PROJECT INFORMATION	
Project Title	Long Ridge Allotment Rangeland Improvements Project
Brief Description	The Long Ridge Allotment is a Forest Service grazing allotment used annually for spring forage from March through June by Sierra Nevada foothill ranchers Gary and Tawny Pamplin of Clovis, California, who own a 125 cow/calf pair ranching operation and Jay TeVelde of Three Rivers Sequoia Ranch, LLC of Three Rivers California who owns a 300 cow/calf pair ranching operation. This section summarizes the combined proposed site improvement projects on the Long Ridge Allotment. The project goal is to improve livestock distribution through providing off-site livestock water developments which would also improve use and condition of upland forage and reduce localized impacts, improve riparian condition and integrity by protecting springs and seeps from cattle impacts and facilitate livestock handling through construction of needed handling facilities. The result of this project will increase reliability of livestock water in relation to future predicted fluctuations in climate. The work would be a collaborative effort between the U.S. Forest Service and the Yosemite-Sequoia Resource Conservation & Development Council (YSRCDC). The YSRCDC will act as fiscal agent and the U.S. Forest service will implement the projects along with the permittees (associated ranchers) whom not only support this project, but would assist with the construction and implementation of these proposed rangeland improvements. NEPA for the project is complete and was done under Categorical Exclusion, which is eligible for a NOE under section 15333, Small Habitat Restoration Projects and section 15304, Minor Alterations to Land. The Forest Service grazing permits provides a forage base for small ranching operations so that they can have a year round operation that limits the need to purchase feed. The sustainability of the Forest Service allotments ensures the success of these small ranches – an intrical part of the history and culture of the Sierra Nevada. Funds for these types of range betterment activities are limited and there is a backlog of need materials and projects from which Forest Service funding allocations do not currently cover adequately. Project Purpose and Proposed Activities: 1. Horseshoe Bend Trail Spring Exclosure and Livestock Water Development.The Sierra National Forest Land and Resource Management Plan desired condition for springs and seeps is that the distribution and health of biotic communities in special aquatic habitats (such as springs and seeps) perpetuates their unique functions and biological diversity. This spring area is being excessively impacted by livestock and is in need of protection from livestock impacts. To meet or move toward this desired condition it is necessary to protect and improve forage and vegetative and soil conditions at Horseshoe Bend Trail Spring in the Long Ridge Allotment the Forest Service proposes to construct a ~100 foot x 100 foot barbed-wire fenced exclosure around the perimeter of the spring and seep area adjacent to the Horseshoe Bend

	system trail (Forest Trail # 23E15) and develop an off-site livestock water (e.g. trough) a distance away from the sensitive riparian area. Livestock use would be prohibited within the fenced exclosure to protect the spring head until riparian vegetation and soil conditions improve while the spring head itself would remain protected indefinitely. 2. Coyote Spring Livestock Water Development To improve livestock distribution and to meet or move toward this desired condition it is necessary to protect and improve forage and vegetative and soil conditions in the Horseshoe Bend area of the Long Ridge Allotment the Forest Service proposes to develop livestock water at Coyote Spring. A spring box would be placed in the spring channel to capture water to be plumbed to a trough for livestock access. 3. Smalley Cove Livestock Handling Facility and Livestock Water Development To facilitate livestock handling and management in the Long Ridge Allotment, a pipe corral and holding pens would be reconstructed to standard to replace the existing wooden corral that is in total disrepair at the Smalley Cove Pasture adjacent to Kerckhoff Lake and Madera County Road 222. A spring box would be placed in the spring to the north of the corral to capture water to be plumbed to a trough for livestock access. 4. Powerhouse #4 Livestock Handling Facilities To facilitate livestock handling and management in the Long Ridge Allotment, a 0.5 acre barbed-wire fenced holding field with a pipe corral and holding pens would be constructed to standard at the junction of the Southern California Edison Powerhouse #4 and Madera County Road 235 adjacent to the San Joaquin River above Kerckhoff Lake. Outcomes: This proposal would result in overall improved livestock management, 0.02 miles of restored riparian habitat integrity and improved water quality and improved riparian habitat through implementation of water developments, fencing and livestock handling facilities
Total Requested Amount	18,606.85
Other Fund Proposed	31,465.90
Total Project Cost	50,072.75
Project Category	Site Improvement/Restoration
Project Area/Size	1,541
Project Area Type	Acres
Have you submitted to SNC this fiscal year?	No
Is this application related to other SNC funding?	No

Project Results
Enhancement

Infrastructure development/improvement
Resource protection

Project Purpose	Project Purpose Percent
Habitat	
Natural Resource	
Water Quality	
Working Landscapes	

County
Madera

Sub Region
South

PROJECT CONTACT INFORMATION

Name	Mr. Steve Haze,
Title	Vice President
Organization	Yosemite/Sequoia Resource Conservation and Development Council
Primary Address	P.O. Box 415, , , North Fork, CA, 93643
Primary Phone/Fax	559-877-8664 **Ext.**
Primary Email	Stevehaze007@gmail.com

PROJECT LOCATION INFORMATION

Project Location	
Address:	57839 Road 225, , , North Fork, CA, 93643
Water Agency:	n/a
Latitude:	37.126381
Longitude:	-119.48112
Congressional District:	n/a
Senate:	n/a
Assembly:	n/a
Within City Limits:	No
City Name:	

ADDITIONAL INFORMATION

Grant Application Type

Grant Application Type: **Category One Site Improvement**
Grant Application Type: **Category One Site Improvement**

PROJECT OTHER CONTACTS INFORMATION

Other Grant Project Contacts	
Name:	Ms. Aimee Smith,
Project Role:	Day-to-Day Responsibility
Phone:	5598772218
Phone Ext:	3151
E-mail:	asmith03@fs.fed.us

UPLOADS

The following pages contain the following uploads provided by the applicant:

Upload Name
Completed Application Checklist
Table of Contents
Full Application Form
Authorization to Apply or Resolution
Narrative Descriptions
CEQA Documentation
CEQA Documentation
CEQA Documentation
CEQA Documentation
CEQA Documentation
CEQA Documentation
CEQA Documentation
CEQA Documentation
CEQA Documentation

CEQA Documentation
CEQA Documentation
CEQA Documentation
CEQA Documentation
CEQA Documentation
Detailed Budget Form
Letters of Support
Letters of Support
Letters of Support
Letters of Support
Letters of Support
Letters of Support
Letters of Support
Letters of Support
Letters of Support
Letters of Support

Letters of Support
Letters of Support
Letters of Support
Letters of Support
Project Location Map
Parcel Map Showing County Assessors Parcel Number
Topographic Map
Topographic Map
Photos of the Project Site
Land Tenure- Only for Site Improvement Projects

To preserve the integrity of the uploaded document, headers, footers and page numbers have not been added by the system.

Instructions for use of this form:
1. Scroll down and check the box indicating completion of requested information in the appropriate format.
   - You can move among the boxes by using your mouse or the "Tab" key.
2. When you have completed the form, print and sign at the bottom.

Please note: *Adobe® Reader® does not allow you to save your work. It is very important that you print out your form immediately after completing it.*

Appendix B1

Full Application Checklist

Project Name: Long Ridge Allotment Rangeland Improvemet EGID#: 705

Applicant: Yosemite/Sequoia Resource Conservation & Development Council

Please mark each box: check if item is included in the application; mark "N/A" if not applicable to the project. "N/A" identifications must be explained in the application. Please consult with SNC staff prior to submission if you have any questions about the applicability to your project of any items on the checklist. All applications must include a CD including an electronic file of each checklist item, if applicable. The naming convention for each electronic file is listed after each item on the checklist. (Electronic File Name = EFN: "naming convention". file extension choices)

Submission requirements for all Category One and Category Two Grant Applications

1. ☒ Completed Application Checklist *(EFN: Checklist.pdf)*
2. ☒ Table of Contents *(EFN: TOC.doc or .docx)*
3. ☒ Full Application Project Information Form *(EFN: fapi.doc or .docx)*
4. ☒ Authorization to Apply or Resolution *(EFN: authorization.doc or .docx)*
5. ☒ Narrative Descriptions - Submit a single document (maximum 10 pages, Arial 12 pt font, 1 inch margins) that includes each of the following narrative descriptions *(EFN: Narrative.doc or .docx)*
   a. ☒ Detailed Project Description
      - ☒ Project Description including Goals/Results, Scope of Work, Location, Purpose, etc.
      - ☒ Project Summary
      - ☒ Environmental Setting
   b. ☒ Workplan and Schedule
   c. ☒ Restrictions, Technical/Environmental Documents and Agreements – Category One projects only
   d. ☒ Organizational Capacity
   e. ☒ Cooperation and Community Support
   f. ☒ Long Term Management and Sustainability
   g. ☒ Performance Measures
   h. ☒ Budget

6. Supplemental and Supporting documents
   a. [X] CEQA/NEPA Compliance Form *(EFN: CEQAform.doc or .docx)*
      [X] California Environmental Quality Act (CEQA) documentation *(EFN: CEQA.pdf)*
      [X] National Environmental Policy Act (NEPA) documentation *(EFN: NEPA.pdf)*
   b. [X] Detailed Budget Form *(EFN: Budget.xls, .xlsx)*
   c. Restrictions, Technical/Environmental Documents and Agreements, as applicable – Category One projects only
      [N/A] Restrictions / Agreements *(EFN: RestAgree.pdf)*
      [N/A] Regulatory Requirements / Permits *(EFN: RegPermit.pdf)*
   d. Cooperation and Community Support
      [X] Letters of Support *(EFN: LOS.doc, .docx or .pdf)*
   e. Long-Term Management and Sustainability
      [N/A] Long-Term Management Plan *(EFN: LTMP.pdf)*
   f. Maps and Photos
      [X] Project Location Map *(EFN: LocMap.pdf)*
      [X] Parcel Map showing County Assessor's Parcel Number(s) *(EFN: ParcelMap.pdf)*
      [X] Topographic Map *(EFN: Topo.pdf)*
      [X] Photos of the Project Site *(10 maximum) (EFN: Photo.jpg, .gif)*

   g. Additional submission requirements <u>for Conservation Easement Acquisition applications only</u>
      [N/A] Acquisition Schedule *(EFN: acqSched.doc,.docx,.rtf,.pdf)*
      [N/A] Willing Seller Letter *(EFN: WillSell.pdf)*
      [N/A] Real Estate Appraisal *(EFN: Appraisal.pdf)*
      [N/A] Conservation Easement Language *(EFN: CE.pdf)*
      [N/A] Third Party Transfer Acknowledgment Letter (if applicable) *(EFN: Transfer.pdf)*

   h. Additional submission requirements <u>for Site Improvement/Restoration Project applications only</u>
      [N/A] Land Tenure Documents – attach only if documentation was not included with Pre-application *(EFN: Tenure.pdf)*
      [N/A] Site Plan *(EFN: SitePlan.pdf)*
      [N/A] Leases or Agreements *(EFN: LeaseAgmnt.pdf)*

I certify that the information contained in the Application, including required attachments, is accurate.

Signed *(Authorized Representative)* — Date 10/18/2012

STEVE HAZE, 1ST VICE PRESIDENT

Name and Title *(print or type)*

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Sierra Resource Conservation District	
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Terrestrial Wildlife Biological Assessment Report Attachment K
Terrestrial Wildlife Management Indicator Species Report Attachment L
Noxious Weed Risk Assessment Attachment M
Aquatic Wildlife Management Indicator Species Report Attachment N

Instructions for use of this form:
1. Scroll down and check the box indicating completion of requested information in the appropriate format.
   • You can move among the boxes by using your mouse or the "Tab" key.
2. When you have completed the form, print and sign at the bottom.

Please note: *Adobe® Reader® does not allow you to save your work. It is very important that you print out your form immediately after completing it.*

Appendix B2

Project Information Form

PROJECT NAME *(Limit name to 10 words or less)* **EGID#** 705

Long Ridge Allotment Rangeland Improvement Project

APPLICANT NAME *(Legal name, address, and zip code)*

Yosemite/Sequoia Resource Conservation & Development Council
P.O. Box 415 North Fork CA 93643

PROJECT DESCRIPTION: Refer to Sec. IV, 5a in the GAP.

Has the project description been updated from the project description submitted with the Pre-Application form? *(Choose One)* ☐ SAME ☐ UPDATED

CONSISTENCY WITH LOCAL GENERAL PLAN

Is this project consistent with the appropriate jurisdiction's (city/county) general plan?

☒ Yes ☐ No *(If not, explain why not.)*

WILLIAMSON ACT STATUS *(for conservation easement acquisition projects only)*

Is the project enrolled in a Williamson Act contract with the local county? ☐ Yes ☐ No N/A

If yes, what is the expiration date of the contract? _____

FUNDING AND BUDGET INFORMATION

SNC Grant Request $18,606.85

☐ Check if SNC is the sole funder of this project

PERSON WITH FISCAL MANAGEMENT RESPONSIBILITY FOR GRANT CONTRACT/INVOICING

Name and title – type or print	*Phone*	*Email Address*
☒ Mr. Steve Haze, 1st Vice President	(559) 877-8664	info@ysrcandd.org
☐ Ms.		

PERSON WITH DAY-TO-DAY RESPONSIBILITY FOR GRANT *(Only include this information if different from pre-application submittal)*

Name and title – type or print	*Phone*	*Email Address*
☐ Mr. (admin) Steve Haze, 1st Vice President	(559) 877-8664	info@ysrcandd.org
☐ Ms. (implementation) Aimee Smith District Rangeland management Specialist	(559) 877-2218 ext 3151	asmith03@fs.fed.us

COUNTY ADMINISTRATOR OR PLANNING DIRECTOR CONTACT INFORMATION *(At least one entry with **Email address** is **REQUIRED**)*

Name: Norman Allinder *Phone Number:* 559.675.7821

Email Address: mc_planning@madera-county.com OR norman.allinder@madera-county.org

Name: *Phone Number:*

Email Address:

NEAREST PUBLIC WATER AGENCY (OR AGENCIES) CONTACT INFORMATION *(At least one entry with Email address is REQUIRED)*

Name: Mariposa Public Utilities District *Phone Number:* 209-966-2515

Email Address: mpud@sti.net

Name: Madera County Flood Control & Water Conservation Agency *Phone Number:* 559-675-7703

Email Address: info@madera-county.com

Please identify the appropriate project category below and provide the associated details *(Choose One – should be the same as the category identified in the pre-application)*

- [x] Category One Site Improvement
- [ ] Category Two Pre-Project Activities
- [ ] Category One Conservation Easement Acquisition

[x] Site Improvement/Conservation Easement Acquisition

Project Area: Long Ridge Allotment

Total Acres: 1,541

SNC Portion (if different): 1,541

Total Miles (i.e. river or stream bank): 0.02

SNC Portion (if different): 0.02/1156 linear ft

For Conservation Easement Acquisitions Only

- [ ] Appraisal Included
- [ ] Will submit appraisal by N/A

Select one primary Site Improvement/Conservation Easement Acquisition deliverable

- [ ] Stream Restoration/Protection
- [ ] Management Practices Changes
- [ ] Natural Resource Protection
- [x] Infrastructure Development/Improvement
- [ ] Conservation Easement

Does the applicant intend to transfer the easement to a third party? [ ] Yes [ ] No N/A

If yes, is the third party organization known? [ ] Yes [ ] No If yes, please attach a letter from this organization documenting their willingness to assume the long term management of the project. N/A

[ ] Pre-Project Activities N/A

Select one primary Pre-Project deliverable

- [ ] Permit
- [ ] CEQA/NEPA
- [ ] Appraisal
- [ ] Plan
- [ ] Condition Assessment
- [ ] Biological Survey
- [ ] Environmental Site Assessment

N/A

RESOLUTION IN SUPPORT OF YOSEMITE/SEQUOIA RC&D COUNCIL DISTRICT APPLICATION TO THE SIERRA NEVADA CONSERVANCY GRANT PROGRAM

DATED OCTOBER 8, 2012

Resolution

Resolved by the Yosemite/Sequoia RC&D Council that the application be made to the Sierra Nevada Conservancy to obtain the Long Ridge Allotment Rangeland Improvements Project, and to enter into an agreement to receive a grant for the "Long Ridge Allotment Rangeland Improvements Project". The Vice President of the Yosemite/Sequoia RC&D Council is here by authorized and directed to prepare the necessary data, conduct investigations, file such application, and execute a grant agreement with the Sierra Nevada Conservancy.

Authorized Original Signature: Steve Haze

Printed Name: STEVE HAZE

Title: EXECUTIVE DIRECTOR / 1ST VICE PRESIDENT

Narrative Descriptions - Detailed Project Description

Introduction

Part of the unique make-up of the Sierra National Forest (SNF) is its local ranchers and grazing permit's that have been actively using the forest for forage since 1905. Currently the SNF authorizes livestock grazing that supports cow/calf operations for twenty-one families (including multi-generation ranches) with base ranches located in the foothills of the Sierra Nevada. The United States Forest Service (USFS), Bass Lake Ranger District (BLRD), makes forage available to qualified livestock operators, utilizing lands deemed suitable for grazing, which is consistent with land management plans. This is done not only to continue the grazing tradition and culture of this region, but also to (1) contribute to economic diversity and to (2) promote stability for communities that depend on range resources for their likelihood.

Project Goal

The Long Ridge Allotment Rangeland Improvements Project (LRARIP) will protect riparian areas from livestock impacts while improving livestock distribution within agricultural lands by improving efficiency and providing economic benefits to several local ranchers operating in the Sierra Nevada. Moreover, the results of the LRARIP will serve as a model for other rangelands in the SNF as well as neighboring National Forests, acting as a pilot project for the region.

The LRARIP will improve livestock distribution by providing off-site livestock water developments which in turn; (1) improves use and condition of upland forage, (2) reduces localized impacts, (3) improves riparian conditions, (4) increases integrity by protecting springs and seeps from cattle impacts, and (5) improves the facilitation of livestock handling through construction of much needed handling facilities. Through this project, ranchers will be able to focus solely on overall livestock distribution and rangeland management needs instead of spending a disproportionate amount of time focusing on localized areas. Furthermore it will enable ranchers to achieve full compliance with USFS grazing permit standards and guidelines (e.g. utilization standards) ultimately resulting in healthier watersheds for both the human and wildlife communities.

The deliverables of the LRARIP will protect riparian areas by developing off-site water facilities/structure that attracts livestock out of sensitive areas resulting in minimized livestock impacts. The materials requested under this proposal would be used to construct, in partnership with the ranchers, necessary livestock handling facilities that will improve efficiency by cutting down on labor costs while easing the handling of livestock management. The use of the Long Ridge Allotment makes a year-round cow/calf operation possible for two local Sierra Nevada foothill ranching families while also, improving the health of the rangeland which is critical to the sustained use of this area by these families and others for years to come.

Project Scope

The Long Ridge Allotment is a USFS grazing allotment used annually for spring forage from March through June by two Sierra Nevada foothill ranchers; (1) Gary and Tawny Pamplin of Clovis, California, who own a 125 cow/calf pair ranching operation

and (2) Jay TeVelde of Three Rivers Sequoia Ranch, LLC of Three Rivers California who owns a 300 cow/calf pair ranching operation (Table 1). These ranchers incorporate the use and management of the Long Ridge Allotment in order to sustain a year-round cow/calf operation.

Table 1. Summary of Sierra Nevada Ranchers Operating on Long Ridge Allotment.

Ranchers Name	Season of Use Permitted	Number of Cow/Calf Pair Permitted	Base Ranch Location
Gary and Tawny Pamplin	March 1 through June 30	101	Clovis, CA
Three Rivers Sequoia Ranch, LLC (Jay TeVelde)	March 1 through June 30	40	Three Rivers, CA

Both the SNF and Resource Management Plan (RMP) state that desired condition for springs and seeps is one which the distribution and health of biotic communities in special aquatic habitats (such as springs and seeps) perpetuates their unique functions and biological diversity. The work completed under the purposed grant project will occur in phases over a three year period of time. Each project has been prioritized by the BLRD based upon current degree of damage and results associated with the deliverable. The BLRD has identified four site-specific projects on the Long Ride Allotment, the work purposed in each is described in detail as follows:

1. Horseshoe Bend Trail Spring Exclosure and Livestock Water Development

Currently the Horseshoe Bend Trail Spring area is being excessively impacted by livestock and is in need of protection from those livestock impacts. In order to move towards the outlined desired condition it is necessary to both project and improve (1) forage, (2) vegetative and (3) soil conditions in this area. To do so we are proposing to construct a ~ 100 foot x 100 foot barbed-wire fenced exclosure around the perimeter of the springs and seep area adjacent to the Horseshoe Bend system Trail (USFS TRAIL #23E15) and to develop an off-site livestock water (e.g. trough) an appropriate distance away from the sensitive riparian areas. Livestock use would be prohibited within the fenced exclosure to protect the spring head until riparian vegetation and soil conditions improve while the spring head itself would remain protected indefinitely. Materials needed for the riparian exclosure include but are not limited to 2-point galvanized steel barbed wire, steel T-posts, wooden posts for H-braces (corner posts) and twisted smooth wire for securing H-braces. Materials needed for the off-site livestock water development include but are not limited to; a galvanized steel water trough (~100 gallon), spring box materials (pipe and/or 2” x 4” lumber), PVC pipe and flexible black pipe for plumbing needs as well as treated wood 4”x4” wood posts for supports for the trough. Tools needed to implement the project will be provided by the permittee and BLRD.

2. Coyote Spring Livestock Water Development

In order to improve livestock distribution and to meet the ultimate desired conditions (outlined by the USFS and RMA) it is necessary to protect and improve forage and vegetative and soil conditions in the Horseshoe Bend area of the Long Ridge Allotment

the Forest Service proposes to develop livestock water at Coyote Spring. A spring box would be placed in the spring channel to capture water to be plumbed to a trough for livestock access. Materials needed for the off-site livestock water development include but are not limited to; a galvanized steel water trough, spring box materials (pipe and/or 2” x 4” lumber), PVC pipe and flexible black pipe for plumbing needs as well as treated wood 4”x4” wood posts for supports for the trough. Tools needed to implement the project will be provided by the permittee and BLRD.

3. Smalley Cove Livestock Handling Facility and Livestock Water Development
To facilitate livestock handling and management in the Long Ridge Allotment, a pipe corral and holding pens would be reconstructed to standard - replacing the existing wooden corral that is in total disrepair at the Smalley Cove Pasture (adjacent to Kerckhoff Lake and Madera County Road 222). A spring box would be placed in the spring to the North of the corral to capture water to then be pumped to a trough for livestock access. By creating new holding pins and installing a spring-box cows/calf would be encouraged to make their way *away* from sensitive areas, reducing localized impacts, and into areas that are better suited to resist these impacts. Materials needed for the corral include but are not limited to; 2 7/8” inch pipe for top rail and center posts and succor rod for panels, gates and quickcrete. Additionally, a galvanized steel water trough (~235 gallon), spring box materials (pipe and/or 2” x 4” lumber), PVC pipe and flexible black pipe for plumbing needs as well as treated wood 4”x4” wood posts for supports for the trough. Tools needed to implement the project will be provided by the permittee and BLRD.

4. Powerhouse #4 Livestock Handling Facilities
To facilitate livestock handling and management in the Long Ridge Allotment, a 0.5 acre barbed-wire fenced holding field with a pipe corral and holding pens would be constructed to standard at the junction of the Southern California Edison Powerhouse #4 and Madera County Road 235 adjacent to the San Joaquin River above Kerckhoff Lake. This action, which may seem relatively simple, as an array of positive impacts for the rangeland and permittees alike. Materials needed for the corral include but are not limited to; 2 7/8” inch pipe for top rail and center posts and succor rod for panels, gates and quickcrete. Materials needed for the holding field include 2-point galvanized steel barbed wire, steel T-posts, wooden posts for H-braces (corner posts) and twisted smooth wire for securing H-braces.

Table 2. Summary of Project Scope for the LRARIP

Location	Description of Proposed Improvement	Associated Costs
Horseshoe Bend Trail	Construct Riparian Exclosure and Off-Site Livestock Water Development	$4,300
Coyote Spring	Construct Off-Site Livestock Water Development	$1,000
Smalley Cove	Construct Corral and Off-Site Livestock Water Development	$5,000

Powerhouse #4	Construct Corral and Holding Field	$4,000

Project Summary

The Long Ridge Allotments Improvements Project (LRARIP) is a joint effort between three parties (1) the United States Forest Service (USFS), Bass Lake Ranger District (BLRD) on the Sierra National Forest (SNF), (2) the Yosemite/Sequoia Resource Conservation and Development Council (Y/S RC&DC) and the associated (3)Ranchers (permittees). This partnership between the National Forest, its permittees and the regional non-profit organization is unique in that it allows for; (1) access to specialist at a reduced rate, (2) the utilization of personnel that is extremely familiar with the associated areas and its specific historical and present day uses, (3) support from a diverse range of partners that it turn leverage the projects outcomes and sphere of influence, (4) maximizes the benefit analysis's outlined in the purposed budget and (5) provides and opportunity to utilize project results as a model for other like-projects across the region.

The LRARIP is designed to restore much needed elements within the Long Ridge Allotment that serves as a season grazing lands for two ranching families in the Sierra Nevada. Within the Long Ridge Allotment (6550 acres) four site-specific projects have been outlined in the areas of: (1) Horseshoe Bend Trail, (2) Coyote Spring, (3) Smalley Cove and (4) Powerhouse #4. The improvements to each of these areas result in (1) improved forage activity, (2) the preservation or riparian and other sensitive areas, (3) the distribution of cattle impacts and the (4) overall economic support (through efficiency and effectiveness) needed for the long-time ranchers utilize this rangeland.

The BSLD and the Y/S RC&DC have been partnering on natural resource and sustainable economic development projects for over a decade, if awarded a new project specific MOA will be created. The Y/S RC&DC will act as fiscal agent as well as complete article that reach out to the public about the good work being completed. The USFS, BLRD will implement the projects along with the permittees (associated ranchers) who would assist with the construction and implementation of these proposed rangeland improvements. NEPA for the project is complete (providing in-kind to the project) and was done under Categorical Exclusion, which is eligible for a NOE under section 15333, *Small Habitat Restoration Projects and* section 15304, *Minor Alterations to Land.* Funds for these types of range betterment activities are limited and there is a backlog of need materials and projects from which USFS funding allocations do not currently cover adequately.

Project Deliverables

The site improvement project will entail the construction of a riparian exclosure, spring developments, corrals and a holding field all located within the Long Ridge Allotment of the Sierra National Forest in Madera County. The desired condition (outcome) for the project includes

- Construction of (1) riparian exclosure
- Development of (3) off-site water developments
- Construction of (2) corrals
- Construction of (1) holding field
- Improvements of 0.02 miles or 1156 linear feet of riparian habitat

- Improvements to forage, vegetation and soil conditions on an estimated **1,541** acres of primary use rangeland from improved livestock distribution and reduced impacts to riparian areas due to off-site water developments
- Increased efficiency and cost savings for ranchers (permittees) in managing/handling livestock
- Cooperative planning and implementation of a cost-share partnership between ranchers (permittees) and the Forest Service
- Provide a staging area in terms of Powerhouse #4 Corral (e.g. holding pens) for recreation stock utilizing the Proposed Horseshoe Bend Trailhead which is part of the San Joauquin River Trail.
-

This proposal would result in overall improved livestock management, 0.02 miles of restored riparian habitat integrity and improved water quality and improved riparian habitat through implementation of water developments, fencing and livestock handling facilities which would specifically result in better livestock distribution across the allotment, limit localized impacts to riparian areas and result in improved forage, vegetation and soil conditions on an estimated 600 acres. In addition, this proposal would facilitate and improve livestock handling during gathering and round-up to ensure that stock are securely and safely handled, in an efficient manner that would minimize operating costs to the permittees and help to ensure viability of their ranching operations and their compliance with terms and conditions of their Term Grazing Permits (e.g. livestock gathered and off allotment at appropriate time and utilization standards met).

Environmental Setting

The Long Ridge Allotment lies just north and east of Kerckhoff Lake on the San Joaquin River, about 5 miles south of the town of North Fork, California. Elevation varies from 1,000 feet to 2,400 feet. There are approximately 4,586 acres of National Forest system lands and 1,964 acres of private land within the Long Ridge allotment. Vegetation communities present within the project area consist of annual grasslands, blue oak woodlands, scatttered gray pine, and Sierran chaparral. The project area has a Mediterranean climate with cool, moist winters and warm, dry summers. The annual precipitation is about 33 inches with most of the precipitation falling between November and April with isolated thunderstorms occuring in the summer months. All areas presently grazed are considered open grassland to scattered brushlands with a dense understory of annual forage species. The areas that are susceptible to cattle disturbance are generally swales and also riparian areas, where more concentrated use occurs due to higher forage production, and higher organic and moisture content in the soils make them more sensitive to trampling. This allotment drains to the San Joaquin River via the Willow Creek and Big Sandy-Fine Gold HUC 6 watershed. Willow Creek flows into the San Joaquin River just downstream of Redinger Lake. There are approximately 21 miles of perennial streams and 257 miles of seasonally flowing streams in the allotment. A seasonal spring located along the Horse Shoe Bend Trail (UTM coordinates 11S 0279387; 4110907) showed signs of denudation and heavy use by livestock as a forage and resting area. Chiseling was also evident along the banks of the spring as well as the channel that has developed below the spring. Recovery of the

vegetation in the reach immediately downstream of the spring would be facilitated by exclosing the spring and associated drainage. The Horseshoe Bend Trail (Forest Trail 23E15) will provide access to pack in materials to both the Horseshoe Bend Trail Riparian Exclosure and Off-site Water Development and Coyote Spring Off-Site Livestock Water Development, since there is no vehicle access to these locations. A Forest Service Packer/Wrangler will be required to get project materials to these locations.

Workplan and Schedule

Work completed will include the construction of: (1) riparian exclosure, (3) off-site water developments (where spring sources are plumbed to a trough), (2) corrals made of pipe and (1) barbed-wire holding field, all located within the Long Ridge Allotment of the Sierra National Forest in Madera County. Table 3 describes the schedule of work which will include:

- Development of (3) spring sources to provide off-riparian site livestock water;
- Construction of (2) pipe corrals including sorting pens and a chute;
- Construction of (1) riparian exclosure fence to protect and restore 0.02 miles of riparian habitat.

Table 3. Schedule of Deliverables

Task	Schedule	Deliverables	Resources	Organization
SNC Authorization	June 2013	Grant awarded	Admin	Y/S RC&D
Scheduling Year 1 Work	September, 2013	Schedule of work developed	Range manager and permittees	Permittees/USFS
Procure and Deliver (P&D) Materials for HBT* Riparian Exclosure and OSLWD**	October, 2013	Order materials and deliver to site	Admin and Range manager	Y/S RC&D/ USFS
Begin HBT Riparian Exclosure and OSLWD	November, 2013	Exclosure fence and OSLWD constructed	Range manager and permittees	Permittees/USFS
SNC 6 Month Report	Dec 2013	Submit Report	Admin	Y/S RC&D
P&D Materials for Powerhouse #4 Corral and Holding Field	January, 2014	Order materials and deliver to site	Admin and Range manager	Y/S RC&D/ USFS
Construct Powerhouse #4 Corral and Holding Field	February, 2014	Corral and holding field constructed	Range manager and permittees	Permittees/USFS
SNC 12 month progress report	June, 2014	Submit 12 month progress report	Admin	Y/S RC&D
Scheduling Year 2	September,	Schedule of work	Range manager	Permittees/USFS

Work	2014	developed	and permittees	
P&D Materials for Coyote Spring OSLWD	October, 2014	Order materials and deliver to site	Admin and Range manager	Y/S RC&D/ USFS
Begin Coyote Spring OSLWD	November, 2014	OSLWD constructed	Range manager and permittees	Permittees/USFS
Scheduling Year 3 Work	September, 2013	Schedule of work developed	Range manager and permittees	Permittees/USFS
P&D Materials for Smalley Cove (SC) Corral and OSLWD	January, 2015	Order materials and deliver to site	Admin and Range manager	Y/S RC&D/ USFS
Construct SC Corral and OSLWD	February, 2015	Corral and OSLWD constructed	Range manager and permittees	Permittees/USFS
Final Report to SNC	**December, 2015**	**Submit Final Report**	**Admin**	**Y/S RC&D**

*HBT = Horseshoe Bend Trail
**OSLWD = Off-site livestock water development

Restrictions/Agreements

No property restrictions apply. All project activity will occur on National Forest System Lands and be implemented by the U.S. Forest Service. Forest Service has Implied Federal Water Rights in addition to California State Riparian-Overlying Water Rights for all activities proposed under this project.

Regulatory Requirements and Permits

Project activity will be implemented and managed by the U.S. Forest Service on National Forest System Lands. The projects qualify for Categorical Exclusion under the National Environmental Policy Act (NEPA) and have a water quality waiver with the State of California, Regional Water Quality Control Board. Forest Service has Implied Federal Water Rights in addition to California State Riparian-Overlying Water Rights for all activities proposed under this project.

California Environmental Quality Act (CEQA)

This project qualifies for a CEQA NOE under Title 14 (15333), *Small Habitat Restoration Projects* because: (1) this project implements minor management practices to improve allotment condition and animal distribution and does not individually or cumulatively have a significant effect on the human environment; (2) the total disturbance footprint for all restoration activity will be less than five acres; (3) there would be no significant adverse impact on endangered, rare or threatened species or their habitat pursuant to section 15065; (4) there are no hazardous materials at or around the project site that will be disturbed or removed; (5) no heavy equipment will be used in the project, and (6) the project will not result in impacts that are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. Giving the conditions we are

requesting the Sierra Nevada Conservancy to be the lead agency under CEQA. If any additional information is needed we would be more than happy to provide.

National Environmental Policy Act (NEPA)

All NEPA for the project rangeland improvements has been completed by the U.S. Forest Service under Categorical Exclusion (FSH 1909.15 Chapter 30, 36 CFR 220.6 (e) (9)) and USDA Forest Service Environmental Assessment for the Castle Peak and Long Ridge Grazing Allotments (July, 2009), which is on file at the Bass Lake Ranger District. Relevant biological reports are included with this application. NEPA activities conducted provide approximately $22,000 of in-kind to the project which is a conservative figuration.

Organizational Capacity

This project will be a collaborative effort between the Y/S RC&DC, Permitees Gary and Tawny Pamplin, Jay TeVelde of Sequoia Ranch LLC and the USFS,BLRD on the SNF. The YSRCDC has extensive experience managing and administering grants and watershed programs and will act as fiscal agent while coordinating public outreach as needed. The USFS has the organizational and practical expertise to implement and monitor the rangeland improvement activities. Project implementation will be managed by a journey level range manager with 18 years or range management and permit administration experience in direct coordination and cooperation with long time permittees who are in good standing who have decades of extensive range improvement expertise particularly with welding, fence construction and spring developments.

Cooperation and Community Support

For over ten years the Y/S RC&DC has always worked collaboratively with a variety of stakeholder groups. The Council consists of approximately 35 groups as well as a variety of other like-partners that have established Memorandum of Understandings. Partners include but are not limited to, Board of Supervisors, Tribal Governments, Fire Safe Councils, Resource Conservation Districts, Community Development Councils, Economic Development Councils, educational institutions and other environmental and community organizations throughout the counties of Madera, Mariposa, Fresno and Tulare. It is on behalf of the Council (and therefore those organizations listed above) that we are preparing this application.

The letters of support attached express the excitement about the project itself outlining specific benefits to the forest and ranchers alike but they also indicate support for the partnership between the USFS and the Y/S RC&DC. The partnership between the BLRD and the grazing permittees involved is long standing. There has been a good working relationship built between the BLRD range manager and these ranchers over a 12 year period that fosters mutual respect, cooperation and successful planning/implementation of projects including the completion of the analysis of the Long Ridge Allotment in compliance with the National Environmental Policy Act and implementation of range improvement projects decided under this analysis. This

partnership will help assure that the work can be completed in a timely manner utilizing permittees' available expertise to keep costs down and increasing effectiveness of the overall project. The Y/S RC&DC has worked with the BLRD on a variety of projects throughout the last decade. If awarded, a new Memorandum of Agreement will be developed between the BLRD and the Y/S RC&DC specifying responsibilities and commitments related directly to this project. The core relationship for this project is between the BLRD and the Y/S RC&DC however, other partners and supporters will also serve as resources as needed.

Additionally it should be noted that the Y/S RC&D Council is a strong supporter of the Sierra Nevada Initiative and the Sierra Nevada Forest and Community Initiative. We believe that this project coincides with the goal and mission of these documents while also enhancing ranches and agricultural lands. The Y/S RC&D Council is an active member of the Sustainable Forest and Community Collaborative, the Dinkey Creek Collaborative and the Willow Creek Planning Collaborative. As supporters and participants of these collaborative groups we develop our projects, including the Long Ridge Allotment Rangeland Improvements Project, in such a way to support these collaborative groups' key principals and goals.

At this point in time the Long Ridge Allotment Rangeland Improvements Project has been highly supported and there is no known opposition to be noted.

Letters of Support Attached: North Fork Rancheria of Mono Indians, Foundation for Resource Conservation**,** Sierra Vista National Scenic Byway Association, Natural Resources Conservation Services, North Fork Community Development Council Picayune Rancheria of the Chuckchansi Indians, Sierra Resource Conservation District Central Sierra Watershed Committee, Coarsegold Resource Conservation District Chowchilla Red Top Resource Conservation District, San Joaquin Valley Leadership Forum, United States Forest Service, Bass Lake Ranger District, Gary Pamplin, Rancher and Sierra National Forest Permittee and John Vincent, Three Rivers Sequoia Ranch LLC, Ranch Manager for Sierra National Forest Permittee

Long Term Management and Sustainability

All new construction of rangeland improvement work will be inspected by a USFS journey level range manager after completion and will become part of the permittees annual maintenance responsibility through a Term Grazing Permit Modification. Improvements are inspected annually prior to livestock turn-out by a USFS journey level range manager to ensure proper function and maintenance of these improvements. Any modifications or repairs to improvements that may be needed will be communicated by the USFS journey level range manager to the permittees prior to livestock turnout.

This proposal is consistent with the USFS policy to continue contributions to the economic and social well-being of people (ranchers) by providing opportunities for economic diversity and by promoting stability for communities (Sierra Nevada foothills) that depend on range resources for their livelihood.

In addition, the unique relationship between the BLRD and grazing permittees sustains open space and important wildlife habitat in the Sierra Nevada foothills. It should be noted that the acreage that makes up these privately owned ranches is an eligibility requirement to hold a USFS grazing permit. The continuation of this

relationship between this use of federal land and the preservation of open space on private land, which depends upon proper stewardship, is a big picture and long-term benefit of this project. Maintaining and improving rangeland on the SNF under this proposal will directly benefit the economic stability of the local community by sustaining the operations of long-time ranchers in the Sierra Nevada while also providing improved conditions in riparian areas.

Performance Measures

1. Linear Stream Bank Protected and Restored:

Approximately 106 linear feet of riparian area along an un-named channel that flows into the San Joaquin River would be protected and restored under this proposal.

2.Acres of Land Improved and Restored:

Approximately 1,541 acres of primary use rangeland will be improved under this proposal.

3.Number and Value of New, Improved or Preserved Economic Activities: This project will benefit the local economy specifically by preserving the economic activities associated with the two family ranches that rely on the continued use and stewardship of National Forest System lands within the Long Ridge Allotment to sustain their year round cow/calf operations.

Budget Narrative

The implementation of the project activities will be cost-effective because both the Ranchers and USFS have the expertise to construct rangeland improvement projects and much of the work will be as in-kind contributions including the project planning and labor. Furthermore the Y/S RC&DC has the organizational capacity needed to effectively manage the grant over a three year period. This project is shovel ready because of the extensive planning completed including coordination with specialists and the permittees and the completion of the NEPA analysis (see Budget Spreadsheet). It should be noted that more money has been put into this project then what is being requested. Much has been completed and with the contribution of SNC funds the project will be complete. The total in-kind match associated with this project to date is over 100%.

Appendix B4

SIERRA NEVADA CONSERVANCY
PROPOSITION 84 - DETAILED BUDGET FORM

Project Name: Long Ridge Rangeland Improvements Project

Applicant: Yosemite/Sequoia Resource Conservation and Development Council

SECTION ONE				**Project Cost Breakdown**			
DIRECT COSTS	**Units**	**Unit Cost**	**Total Cost**	**Year One (2013)**	**Year Two (2014)**	**Year Three**	**Total**
BLRD Packer/Wrangler Salary for Project Implementation	day	$195.98	1,175.88	$587.94	$587.94		$1,175.88
Horseshoe Bend Trail Off-Site Livestock Water Development Materials Galvanized steel trough, plumbing and spring box	total		1,000.00	$1,000.00			$1,000.00
Horseshoe Bend Trail Riparian Exclosure Materials Wire, T-Posts and Corner Posts	total	$3,300.00	3,300.00	$3,300.00			$3,300.00
Powerhouse # 4 Pipe Corral Materials -Pipe, Succor Rod and Quickcrete	total		4,000.00		$4,000.00		$4,000.00
Coyote Spring Off-Site Livestock Water Development Materials Galvanized steel trough, plumbing and spring box	total		1,000.00		$1,000.00		$1,000.00
Smalley Cove Off-Site Livestock Water Development Materials Galvanized steel trough, plumbing and spring box	total		1,000.00			$1,000.00	$1,000.00
Smalley Cove Corral Materials - Pipe, Succor Rod and Quickcrete	total	4,000.00	4,000.00			$4,000.00	$4,000.00
DIRECT COSTS SUBTOTAL:	0	$7,495.98	$15,475.88	$4,887.94	$5,587.94	$5,000.00	$15,475.88

SECTION TWO				**Project Cost Breakdown**			
INDIRECT COSTS	**Units**	**Unit Cost**	**Total Cost**	**Year One**	**Year Two**	**Year Three**	**Total**
Rangeland Improvement Maintenance Materials	total				$100.00	$100.00	$200.00
Development of Public Outreach Materials	hourly	$28	504.00	$168.00	$168.00	$168.00	$504.00
INDIRECT COSTS SUBTOTAL:	0	$28.00	$504.00	$168.00	$268.00	$268.00	$704.00
PROJECT TOTAL:	0	$7,523.98	$15,979.88	$5,055.94	$5,855.94	$5,268.00	$16,179.88

SECTION THREE				**Project Cost Breakdown**			
Administrative Costs (Costs may n*ot to exceed 15% of total Project Cost*) :	**Units**	**Unit Cost**	**Total Cost**	**Year One**	**Year Two**	**Year Three**	**Total**
Administrative Costs		*15%of proj*	*2,426.98*	$808.99	$808.99	$808.99	$2,426.97
ADMINISTRATIVE TOTAL:	0	$0.00	$2,426.98	$808.99	$808.99	$808.99	$2,426.97
SNC TOTAL GRANT REQUEST:	0	$7,523.98	$18,406.86	$5,864.93	$6,664.93	$6,076.99	$18,606.85

SECTION FOUR				**Years Fund Received**			
OTHER PROJECT CONTRIBUTIONS				**Year One**	**Year Two**	**Year Three**	**Total**
List other funding or in-kind contibutors to project (i.e. Sierra Business Council, Department of Water Resources, etc.)							
Permittee Rangeland Improvement Maintenance	day	$240.00	960.00	$0.00	$480.00	$480.00	$960.00
BLRD Range Manager Salary for Project Implementation	day	$334.95	4,019.40	$1,674.75	$1,674.75	$669.90	$4,019.40
Permittee/USFS Travel/Fuel Costs	day	$100.00	3,000.00	$600.00	$1,400.00	$1,000.00	$3,000.00
Permittee Cost-Share Labor for Rangeland Improvements Construction	day	$240.00	10,200.00	$2,440.00	$4,360.00	$3,400.00	$10,200.00
BLRD Rangeland Improvement Inspection	day	$334.95	2,344.65	$334.95	$669.90	$1,339.80	$2,344.65
BLRD Performance Measure and Accomplishment Reporting	day	$334.95	1,004.85	$334.95	$334.95	$334.95	$1,004.85
District Ranger - NEPA Analysis	day	$449.00	449.00	$449.00	$0.00	$0.00	$449.00
Wildlife Biologist - NEPA Analysis	day	$302.00	302.00	$302.00	$0.00	$0.00	$302.00
Fisheries Biologist - NEPA Analysis	day	$382	1,146.00	$1,146.00	$0.00	$0.00	$1,146.00
Hydrologist - NEPA Analysis	day	$356	1,884.00	$1,884.00	$0.00	$0.00	$1,884.00
Botanist - NEPA Analysis	day	$357	1,071.00	$1,071.00	$0.00	$0.00	$1,071.00
Range Manager - NEPA Analysis	day	$335	1,005.00	$1,005.00	$0.00	$0.00	$1,005.00
Archeology - NEPA Analysis	day	$349	1,047.00	$1,047.00	$0.00	$0.00	$1,047.00
Engineering - NEPA Analysis	day	$324	972.00	$972.00	$0.00	$0.00	$972.00
Soils - NEPA Analysis	day	$385	1,155.00	$1,155.00	$0.00	$0.00	$1,155.00
Recreation - NEPA Analysis	day	$302	906.00	$906.00	$0.00	$0.00	$906.00
Total Other Contributions:	0	$5,125.85	$31,465.90	$22,807.59	$8,919.60	$7,224.65	$31,465.90

AQUATIC SPECIES
BIOLOGICAL ASSESSMENT AND BIOLOGICAL EVALUATION REPORT

FOR THE
LONG RIDGE AND CASTLE PEAK GRAZING ALLOTMENTS

Sierra National Forest
Madera County, California

Prepared by: _____ 7/2/09

Phil Strand
Aquatic Biologist
Sierra National Forest

Date

Reviewed by: _____ 7/2/09

Dave Martin
District Ranger
Bass Lake Ranger District
Sierra National Forest

Date

I. INTRODUCTION

The purpose of this Biological Assessment (BA) is to present an analysis of effects for the proposed project and alternatives on federally listed endangered, threatened, candidate, and proposed aquatic species (TEPS) and their habitat. The analysis is conducted to determine whether formal consultation or conference is required with the United States Department of Interior (USDI) Fish and Wildlife Service, pursuant to the Endangered Species Act (ESA). The biological assessment is prepared in compliance with the requirements of U.S. Forest Service Manual 2670 and provides for compliance with Code of Federal Regulations (CFR) 50-402.12.

The purpose of this Biological Evaluation (BE) is to document United State Department of Agriculture Forest Service (USDA-Forest Service) programs or activities in sufficient detail to determine whether an action or proposed action may affect any threatened endangered, proposed, candidate, or sensitive aquatic species and their habitats (FSM 2670.5). Part of the biological evaluation is completed to determine whether a proposed action or any of the alternatives will result in a trend toward the sensitive species becoming federally listed under the ESA.

The federal species list is based on the June 20, 2008 online database (Appendix D: document number 080620020817) of federally threatened, endangered, proposed, and candidate species for the Sierra National Forest from the U.S.D.I. Fish and Wildlife Service (USFWS; http://sacramento.fws.gov/es/spp_list.htm). The U.S.D.A. Forest Service's sensitive species list is based on the Pacific Southwest Region's list of June 10, 1998, as amended on March 6, 2001 and May 7, 2003. These lists are the most current versions for the Sierra National Forest.

Further analysis is presented in this document to determine the effects of the reauthorization of the cattle grazing permits for the Long Ridge and Castle Peak Allotments for the following threatened (T), endangered (E), proposed (P), candidate (C), and/or Forest Service Sensitive (FSS) aquatic species:

California red-legged frog (T), *Rana aurora draytonii*
Foothill yellow-legged frog (FSS), *Rana boylii*
Western pond turtle (FSS), *Clemmys marmorata* (Subspecies *marmorata* and *pallida*)
Hardhead minnow (FSS), *Mylophardon conocephalus*

The other threatened, endangered, proposed, candidate, and/or Forest Service aquatic sensitive species (listed next) either do not occur, do not have habitat within or adjacent to, or are not affected directly, indirectly, or cumulatively by this project. Therefore, these species will not be addressed further in this document nor is formal consultation required with the USFWS for these species. ***The re-authorization of a ten-year term grazing permit for the Long Ridge and Castle Peak Cattle Grazing Allotments will have <u>no effect</u> on these aquatic species or their habitats:***

California tiger salamander (T), *Ambystoma californiense*
Central valley steelhead (T), *Oncorhynchus mykiss*
Conservancy fairy shrimp (E), *Branchinecta conservation*
Delta smelt (T), *Hypomesus transpacificus*
Giant garter snake (T), *Thamnophis gigas*
Lahontan cutthroat trout (T), *Oncorhynchus (=Salmo) clarki henshawi*
Limestone salamander (FSS), *Hydromantes brunus*
Owens tui chubb (E), *Gila bicolor snyderi*
Paiute cutthroat trout (T), *Oncorhynchus (=Salmo) clarki seleniris*
Relictual slender salamander (FSS), *Batrachoseps relictus*

Mountain yellow-legged frog (C/FSS), *Rana muscosa*
Yosemite toad (C/FSS), *Bufo canorus*

There are four critical habitats proposed for the Sierra National Forest (Keck's checker-mallow, San Joaquin valley Orcutt grass, Succulent (=fleshy) owl's –clover, and the Vernal pool fairy shrimp), with none being within or adjacent to either grazing Allotment.

Refer to Appendix A for general information and the rationale for inclusion or exclusion in this document for all listed aquatic species. The aquatic management indicator species are analyzed in a separate report.

II. CONSULTATION HISTORY

A species list for the project area was generated via the USFWS website on June 20, 2008. Of the species that will be discussed further in this document, only the California red-legged frog (CRLF) requires consultation with the USFWS. Consistent with USFWS direction for the species (USFWS 2005), a Habitat Assessment has been completed and forwarded (USDA-Forest Service 2008). The Habitat Assessment and this BA were discussed with Jeremiah Karuzas of the USFWS on 7/5/2008, who requested that the BA be forwarded.

Both informal and formal consultation on CRLF has occurred since it was federally listed as threatened in 1996 (61 **FR** 25813). There have been two Biological Opinions (BO) issued by the USFWS for the California red-legged frog, which have included the Sierra National Forest. One biological opinion (1-1-96-F-145) was for sixty-two timber sales on six Sierra Nevada National Forests in 1996 and 1997 (with BO amendments 1-1-97-I-66 and 1-1-97-I-24). The second BO (1-1-96-160) was for fifty-three fuels reduction and prescribed burn projects on seven Sierra Nevada National Forests. Since 1999 ongoing informal consultation with the USFWS has occurred concerning CRLF potential suitable breeding habitat that is found on the Sierra National Forest. Several coordination meetings and numerous emails and phone conservations have occurred.

III. MANAGEMENT DIRECTION

Existing management direction for listed species can be found in:

- Forest Service Manual and Handbooks (FSM/H 2670)
- National Forest Management Act (NFMA)
- Endangered Species Act (ESA)
- National Environmental Policy Act (NEPA)
- Sierra Nevada Forest Plan Amendment (2001 FEIS and ROD)
- Sierra Nevada Forest Plan Amendment (2004 SEIS and ROD)
- Sierra National Forest Land and Resources Management Plan, as amended (LRMP)
- Species-specific Recovery Plans (including Biological Opinions), which establish population goals for recovery of threatened and endangered species
- Regional Forester policy and management direction

The Forest Service direction for Federally listed and proposed species is to manage National Forest Service habitats to achieve recovery objectives so that special protection measures provided under the Endangered Species Act (ESA) are no longer necessary (FM 2670.13). Each Forest manages Threatened or Endangered Species per the applicable Recovery Plan, if one exists, in order to meet the Forest's share of Threatened and Endangered species recovery goals.

The NFMA and the Secretary of Agriculture's implementing regulations (36 **CFR** 219) require selection of management indictor species (MIS) and evaluation of effects of alternatives on the viability and diversity of plant and animal communities. The effects of the project on MIS are to be assessed during the preparation of NEPA documents prior to project implementation to determine if project modifications are necessary to reduce potential negative effects (FSM 2534.1). The aquatic species MIS are addressed in a separate report.

All applicable standards and guidelines from the Sierra National Forest LRMP and associated amendments (e.g. USDA-Forest Service 2004), and other applicable laws and regulations will be applied to this project. Riparian conservation areas (RCAs) are designated along streams and around water bodies and are areas for specific management direction and analysis (USDA-Forest Service 2004). The following widths apply for RCAs within cattle range allotments:

- *Perennial Streams*: 300 feet on each side of the stream, measured from the bank full edge of the stream
- *Seasonally Flowing Streams (includes intermittent and ephemerals streams)*: 150 feet on each side of stream, measured from the bank full edge of the stream
- *Streams in Inner Gorge*[1]: top of inner gorge
- *Special Aquatic Features*[2] *or Perennial Streams with Riparian Conditions extending more than 150 feet from edge of streambank or Seasonally Flowing streams with riparian conditions extending more than 50 feet from edge of streambank*: 300 feet from edge of feature or riparian vegetation, whichever width is greater
- *Other hydrological or topographic depressions without a defined channel*: RCA width and protection measures determined through project level analysis

Sierra National Forest's LRMP forest-wide standard and guidelines (S/G) that were not superseded by the 2001 or 2004 amendments (USDA-Forest Service 2001, 2004) applicable to cattle range allotments for aquatic species and habitats include:

- Generally, riparian management areas will extend 100 feet horizontally from the edge of perennial streams, lakes and reservoirs, except along those streams designated as essential habitat in the Interagency Agreement for *Collomia rawsoniana*, where the zone will be 150 feet. (S/G #33)

- Give primary management emphasis in riparian areas to protect and enhance the riparian ecosystem, riparian vegetation, water quality, soils, fish and wildlife resources. (S/G #69)

- Streamside Management Zone determination will be based on methods described in FSH 2509.22, Sierra Supplement 1 which gives specific direction for width determinations. (S/G #70)

- In the absence of on-site riparian area protective width determinations, riparian areas will extend 100 feet horizontally from the edge of perennial streams, lakes and reservoirs. Deviations resulting from on-site evaluations will be documented in project environmental assessments. (S/G #71)

- When on-site project evaluations identify the need to afford protection to intermittent and/or ephemeral drainages, the protection zone widths will be defined in accordance with the Forest

[1]Inner gorge is defined by stream adjacent slopes greater than 70 percent gradient
[2]Special Aquatic Features include: lakes, wet meadows, bogs, fens, wetlands, vernal pools, and springs

Streamside Management Zone determination process as described in the FSH 2509.22, Sierra Supplement 1. (S/G #72)

- Manage vegetation in designated riparian areas so existing Forestwide diversity is maintained in all periods. (S/G #74)

- Maintain or enhance productivity of Forest meadows to accommodate wildlife and range resources. (S/G #75)

- In stream reaches occupied by fish, any activity that results in trampling and chiseling of stream banks should not exceed 20% of any given stream reach. Controls such as re-routing trails, relocating dispersed campsites, and/or fencing of areas will be used to manage activities and improve riparian conditions in identified areas not meeting this standard. (S/G #76)

- Allow picketing or tethering of stock in meadows and overnight tie-ups no closer than 100 feet of lakes and streams. (S/G #80)

- Salt grounds will be located more than ¼ mile from streams, meadows and trails. (S/G #88)

- Manage domestic livestock to meet wildlife needs in identified important wildlife habitat areas. (S/G #89)

Forest-wide management standards and guidelines (S/G) for riparian conservation areas (RCA) and critical aquatic refuges (CAR) that are listed in the 2004 Record of Decision (pages 62 – 66; USDA-Forest Service 2004) applicable to cattle range allotments for aquatic species and habitats include:

- Designate riparian conservation area (RCA) widths as described in Part B of this appendix (shown above). The RCA widths displayed in Part B (shown above) may be adjusted at the project level if a landscape analysis has been completed and a site-specific RCO analysis demonstrates a need for different widths. (S/G #91)

- Evaluate new proposed management activities within CARs and RCAs during environmental analysis to determine consistency with the riparian conservation objectives at the project level and the AMS goals for the landscape. Ensure that appropriate mitigation measures are enacted to (1) minimize the risk of activity-related sediment entering aquatic systems and (2) minimize impacts to habitat for aquatic- or riparian-dependent plant and animal species. (S/G #92)

- As part of project-level analysis, conduct peer reviews for projects that propose ground-disturbing activities in more than 25 percent of the RCA or more than 15 percent of a CAR. (S/G #94)

- Ensure that management activities do not adversely affect water temperatures necessary for local aquatic- and riparian-dependent species assemblages. (S/G #96)

- Prohibit storage of fuels and other toxic materials within RCAs and CARs except at designated administrative sites and sites covered by a Special Use Authorization. Prohibit refueling within RCAs and CARs unless there are no other alternatives. Ensure that spill plans are reviewed and up-to-date. (S/G #99)

- Maintain and restore the hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features by identifying roads and trails that intercept, divert, or disrupt natural

surface and subsurface water flow paths. Implement corrective actions where necessary to restore connectivity. (S/G #100)

- Prior to activities that could adversely affect streams, determine if relevant stream characteristics are within the range of natural variability. If characteristics are outside the range of natural variability, implement mitigation measures and short-term restoration actions needed to prevent further declines or cause an upward trend in conditions. Evaluate required long-term restoration actions and implement them according to their status among other restoration needs. (S/G #102)

- Prevent disturbance to streambanks and natural lake and pond shorelines caused by resource activities (for example, livestock, off-highway vehicles, and dispersed recreation) from exceeding 20 percent of stream reach or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots. This standard does not apply to developed recreation sites, sites authorized under Special Use Permits, and designated off-highway vehicle routes. (S/G #103)

- At either the landscape or project-scale, determine if the age class, structural diversity, composition, and cover of riparian vegetation are within the range of natural variability for the vegetative community. If conditions are outside the range of natural variability, consider implementing mitigation and/or restoration actions that will result in an upward trend. Actions could include restoration of aspen or other riparian vegetation where conifer encroachment is identified as a problem. (S/G #105)

- As appropriate, assess and document aquatic conditions following the Regional Stream Condition Inventory protocol prior to implementing ground disturbing activities within suitable habitat for California red-legged frog, Cascades frog, Yosemite toad, foothill and mountain yellow-legged frogs, and northern leopard frog. (S/G #114)

- Identify roads, trails, OHV trails and staging areas, developed recreation sites, dispersed campgrounds, special use permits, grazing permits, and day use sites during landscape analysis. Identify conditions that degrade water quality or habitat for aquatic and riparian-dependent species. At the project level, evaluate and consider actions to ensure consistency with standards and guidelines or desired conditions. (S/G #116)

- Assess the hydrologic function of meadow habitats and other special aquatic features during range management analysis. Ensure that characteristics of special features are, at a minimum, at Proper Functioning Condition, as defined in the appropriate Technical Reports (or their successor publications): (1) "Process for Assessing PFC" TR 1737-9 (1993), "PFC for Lotic Areas" USDI TR 1737-15 (1998) or (2) "PFC for Lentic Riparian-Wetland Areas" USDI TR 1737-11 (1994). (S/G #117)

- Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining bog and fen ecosystems and plant species that depend on these ecosystems. During project analysis, survey, map, and develop measures to protect bogs and fens from such activities as trampling by livestock, pack stock, humans, and wheeled vehicles. Criteria for defining bogs and fens include, but are not limited to, presence of: (1) sphagnum moss (*Spagnum spp.*), (2) mosses belonging to the genus *Meessia*, and (3) sundew (*Drosera spp.*) Complete initial plant inventories of bogs and fens within active grazing allotments prior to re-issuing permits. (S/G #118)

- Locate new facilities for gathering livestock and pack stock outside of meadows and riparian conservation areas. During project-level planning, evaluate and consider relocating existing livestock facilities outside of meadows and riparian areas. Prior to re-issuing grazing permits, assess the compatibility of livestock management facilities located in riparian conservation areas with riparian conservation objectives. (S/G #119)

- Under season-long grazing:

    - For meadows in early seral status: limit livestock utilization of grass and grass-like plants to 30 percent (or minimum 6-inch stubble height).
    - For meadows in late seral status: limit livestock utilization of grass and grass-like plants to a maximum of 40 percent (or minimum 4-inch stubble height).

    Determine ecological status on all key areas monitored for grazing utilization prior to establishing utilization levels. Use Regional ecological scorecards and range plant list in regional range handbooks to determine ecological status. Analyze meadow ecological status every 3 to 5 years. If meadow ecological status is determined to be moving in a downward trend, modify or suspend grazing. Include ecological status data in a spatially explicit Geographical Information System database.

    Under intensive grazing systems (such as rest-rotation and deferred rotation) where meadows are receiving a period of rest, utilization levels can be higher than the levels described above if the meadow is maintained in late seral status and meadow-associated species are not being impacted. Degraded meadows (such as those in early seral status with greater than 10 percent of the meadow area in bare soil and active erosion) require total rest from grazing until they have recovered and have moved to mid- or late seral status. (S/G #120)

- Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from grazing herbaceous vegetation to browsing woody riparian vegetation. (S/G #121)

- Recommend restoration practices in: (1) areas with compaction in excess of soil quality standards, (2) areas with lowered water tables, or (3) areas that are either actively down cutting or that have historic gullies. Identify other management practices, for example, road building, recreational use, grazing, and timber harvests, which may be contributing to the observed degradation. (S/G #122).

IV. DESCRIPTION OF PROPOSED PROJECT

Alternative 1 - No Action

The No Action alternative for grazing authorizations has been defined by the Forest Service Handbook (FSH) (FSH 2209.13, Section 92.31) as no grazing. Under this alternative, term grazing permits would be cancelled. Improvements described under the proposed action would not be necessary. Cancellation of term permits must follow direction in Forest Service Manual (FSM) 2231.62d, Forest Service Handbook (FSH) 2209.13, chapter 10 section 16.24, and Part 2 item 11b of the term permit. Structures related to grazing such as water troughs and fences, would be removed if and when feasible.

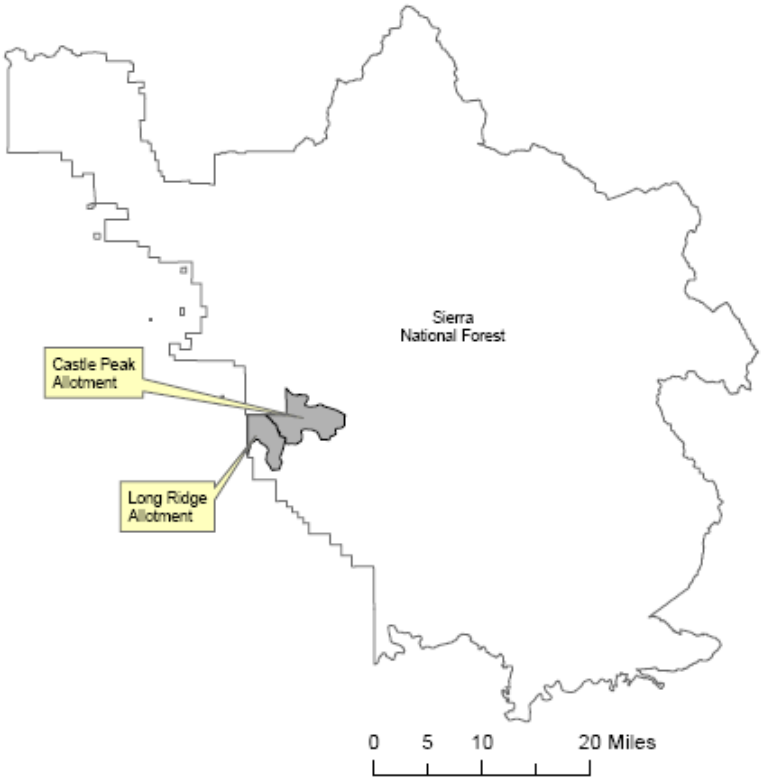
The Proposed Action- Alternative 2

The Bass Lake Ranger District of the Sierra National Forest is proposing to authorize continued livestock grazing on National Forest System (NFS) lands within the Long Ridge and Castle Peak Range Allotments (Map 1) over a total of approximately13,350 acres (Table 1 shows acres of suitable rangeland on NFS lands proposed for continued livestock grazing by unit). Livestock grazing would be administered to meet *Sierra National Forest Land and Resource Management Plan* (Forest Plan) (USDA-Forest Service 1992, as amended) direction for resource management using adaptive management strategies.

Table 1. National Forest Acres Proposed for Continued Livestock Grazing by Unit

Allotment	Unit	Suitable Acres*	Total Unit Acres**
Castle Peak	Redinger	956	4803
	Castle Peak	529	3957
Long Ridge	Long Ridge	1387	4239
	Horse Pasture	192	193
	Smalley Cove Pasture	154	154

* Reasons for non-suitability: areas where livestock have been fenced out to enhance other resource values, areas where livestock access is restricted by physical barriers (e.g. slope, low forage production) and/or property ownership.
** Total Unit Acres does not includes private land acreage



Map 1: Two range allotments in relation to Forest boundary

The Proposed Action (Table 2) is to authorize continued livestock grazing on National Forest System lands within Castle Peak and Long Ridge allotments. Proposed range improvement construction (Table 3) would be completed within 5 years of the decision. In most cases, the Forest Service would provide materials and the permittee would provide labor.

Table 2. Proposed grazing season (period of use) and livestock numbers for Castle Peak and Long Ridge allotments.

Allotment	Pasture	Livestock			Period of Use	
Long Ridge	Long Ridge Horse Pasture (gather pasture)	~100	cattle	cow/ calf	Early March at Livestock Turnout	Early June at Livestock Gather
Long Ridge	Smalley Cove Pasture (PG&E/Forest Service) (gather pasture)	50	cattle	cow/ calf	June 1	June 30
Long Ridge	All Units	125	cattle	cow/ calf	March 1	June 15
Long Ridge	All Units	40	cattle	cow/ calf	March 1	June 15
Castle Peak	Redinger	200	cattle	cow/ calf	March 1	June 30
Castle Peak	Castle Peak	100	cattle	cow/ calf	March 1	June 30
Castle Peak	All Units (including DeMasters Private Land)	40	cattle	cow/ calf	July 1	Sept 15

Table 3. Need for management change and proposed action description.

Allotment	Need for Change	Proposed Action Description
Castle Peak	Range readiness concerns with current permitted on-date	Change in season of use from January 1 through June 30 to March 1 through June 30.
	Change in season of use (extension of season)	Authorize 50 cow/calf pair to graze in Castle Peak allotment (in conjunction with privately leased land) July 1 through September 15. Based on a total reduction of 165 Head Months (HMs) from change in on-dates for Castle Peak.
	Range improvement not up to standard	Timberline Corral would be reconstructed to standard.
Long Ridge	Range readiness concerns with current permitted on-date	Change in season and use from January 1 through June 30 to March 1 through June 15
	Change in permitted numbers requested by permittee	Change in permitted numbers based on monitoring which indicates that the allotment has been managed well within standard and is meeting desired conditions. Also based on initial reduction of 100 HMs by changing season of use to delay on-dates. This reduction would be applied to an increase in permitted numbers from 140 to 165 total (equates to 85 HMs). Total reduction with this proposal is 15 HMs
	Additional holding field needed	Proposal would authorize holding field at junction of Southern California Edison Powerhouse #4 Road and County Road 235
	Long Ridge Corral and portion of Horse Pasture Holding Field fence located on Private Land	Long Ridge Corral and that portion of holding field fence that is on Private Land would be removed and reconstructed on adjacent Forest Service land
	Smalley Cove Pasture	Allow use in this field for gathering only. Up to 50 cow/calf pair are authorized during the month of June. Fence line would be re-aligned to include northern boundary of the National Forest Lands. This pasture incorporates Pacific Gas and Electric (PGE) lands under lease by current permittee.
	Trampling impacts at Teddy's Spring (west side of Long Ridge)	Spring head would be excluded from livestock use with a wire fence
	Trampling impacts at	Spring head would be excluded from livestock use with a wire fence

	spring on western portion of Horseshoe Bend trail	

Mitigation

In response to public comments on the proposal, mitigation measures were developed to reduce possible impacts the action may cause. Implement Pacific Southwest Region Best Management Practices (BMPs) (USDA-Forest Service 1983, 2002) applicable to grazing by:

- Updating the Allotment Management Plans, and;
- Administration of the permits according to the Forest Service Handbook (FSH) 2209.13, Chapter 10 (Permit administration would include grazing utilization monitoring, Annual Operating Instructions, and the enforcement of the allowable use standards (FSH 2209.13, Chapter 10)).

Implement Allowable Use Standards and Guidelines:

- For meadows in early seral status: limit livestock utilization of grass and grass-like plants to 30 percent (or minimum 6-inch stubble height) (RCO#5 120);
- For meadows in late seral status: limit livestock utilization of grass and grass-like plants to a maximum of 40 percent (or minimum 4-inch stubble height) (RCO#5 120);
- Annual grasslands & oak woodlands with > 10 inches annual precipitation and ≤15% slope (1,000-2,500 feet elevation) in satisfactory condition managed for 700 lbs/acre Residual Dry Matter and 1,000 lbs/acre Residual Dry Matter for rangeland in unsatisfactory condition;
- Annual grasslands & oak woodlands with > 10 inches annual precipitation and >15% slope (>2,500 feet elevation) in satisfactory condition managed for 1,000 lbs/acre Residual Dry Matter and 1,200 lbs/acre Residual Dry Matter for rangeland in unsatisfactory condition; and
- Annual grasslands & oak woodlands managed for a minimum of 60 percent cover.

The following project design measures would continue to be implemented through Term Grazing Permits:

- Minimize impacts to fens through salt placement, riding and herding to draw and distribute livestock away from these sensitive areas (Riparian Conservation Objectives #5 118).
- Minimize impacts to pre-historic and historic sites through salt placement and herding to draw and distribute livestock away from these sensitive areas.
- Minimize impacts to streams, seeps and springs through salt placement and herding to draw and distribute livestock away from these sensitive areas (RCO#5 117).

Compliance monitoring of these standards and guidelines would be conducted through grazing permit administration, which would include Annual Operating Instructions, grazing utilization monitoring, and enforcement of the allowable use standards (Forest Service Handbook, 2209.13, Chapter 10).
Desired conditions are for rangelands to be in satisfactory condition and all grazing activities occurring on the forest would have management strategies which achieve or maintain rangeland conditions in satisfactory condition.

Satisfactory rangeland condition is defined in the Forest Plan as having either 1) a livestock forage condition rating of good or excellent or; 2) late seral ecological status greater than or equal to 60% similarity to potential natural community (PNC), or; 3) a resource value rating of greater than or equal to 76% similarity to desired condition, and stable soils with continuous vegetative cover and rooting throughout available profile.

Table 4. Allowable utilization levels by vegetation community.

Landscape	Vegetation type	Standards for Rangeland in satisfactory condition or late ecological status	Standard for rangeland in unsatisfactory condition or early ecological status
Annual grasslands & oak woodlands with > 10 inches annual precipitation and ≤15% slope (1,000-2,500 feet elevation)	grass and grasslike plants and forbs	700 lbs/acre Residual Dry Matter	1,000 lbs/acre Residual Dry Matter
Annual grasslands & oak woodlands with > 10 inches annual precipitation and >15% slope (>2,500 feet elevation)	grass and grasslike plants and forbs	1,000 lbs/acre Residual Dry Matter	1,200 lbs/acre Residual Dry Matter
Meadows/riparian areas within annual grasslands, oak woodlands, montane and subalpine meadows	grass and grasslike plants and forbs	40 % Use by Weight	30 % Use by Weight
All rangeland types	hardwoods: including (oak/willow and other shrub seedlings/regeneration)	Allow browse on no more than 20% of current annual leader growth and advanced regeneration	Allow browse on no more than 10% of current annual leader growth and advanced regeneration
Annual Grasslands & Oak Woodlands	Annual Grasslands & Oak Woodlands/Uplands	Minimum of 60 percent cover	Minimum of 60 percent cover

The following standard and guideline is designed to achieve and/or maintain desired conditions:

- Pacific Southwest Region Best Management Practices (BMPs) applicable to grazing (USDA-Forest Service 2000, pages 143-147) would be met through Allotment Management Plans and administration of the permits according to the Forest Service Handbook (FSH) 2209.13, Chapter 10.

If Desired Conditions are not met, the proposed livestock grazing management would be managed by applying adaptive management to meet Forest Plan direction and other applicable laws and regulations, using the results of monitoring and evaluation to guide management practices to meet Forest Plan standards and guidelines and achieve desired conditions.

- Adaptive management includes any combination of the following actions to meet utilization standards and desired conditions: Adjust stocking rate (reduce livestock numbers).
    - Adjust season of use and numbers (timing, duration and head months);
    - Use of salt to control livestock distribution;
    - Herding of livestock to control distribution;
    - Implement rest and rotation grazing system;
    - Incorporate integrated weed management;
    - Construct or modify fencing to apply restrictions on grazing access if unacceptable impacts occur and cannot be reduced through other management practices (e.g. salt placement, herding, drift fences, and/or fenced exclosures;

- Develop or modify water sources; and
- Seeding or planting of native grasses and/or shrubs.

▪ Continue annual utilization and five-year trend monitoring as part of on-going monitoring plan. Identified areas of concern would be monitored adaptively (e.g. streambank disturbance) on an annual basis until desired conditions are met two consecutive years. Once desired conditions are met at identified areas of concern, monitoring would be completed every three to five-years.

Narrative of Proposed Continued Grazing (Proposed Permitted Use)

Castle Peak Allotment: There is a need for change in livestock on-dates for the Castle Peak allotment. Since 1984, this allotment has had a staggered turn-out date (dates which livestock are authorized to enter the allotment) of 100 cow/calf pair each entering the allotment on the 1st of January, February and March. Under this proposal, the on-date for all permitted livestock to enter Castle Peak allotment would be delayed until March 1st. This proposal would authorize 300 cow/calf pair from March 1st through June 30th. The reduction in head months gained from this delayed date would be off-set by authorizing 40 cow/calf pair to graze July 1st through September 15th within the Castle Peak allotment and private land within the allotment that is leased by the current permittee. Improvements to the existing "Timberline Corral" at Saginaw Creek would also be made. This wooden corral and sorting pens would be rebuilt with pipe material at the existing location. Desired conditions are being met (Range Analysis as referenced in Project File).

Long Ridge Allotment: The livestock on-dates for the Long Ridge allotment have historically been scheduled for early January, which in most years is too early for conditions to support grazing in terms of range readiness. This proposal would delay the on-date for Long Ridge until March 1st. The reduction in head months gained from this delay would be off-set by authorizing an additional 25 cow/calf pair to graze in the allotment during the proposed season of use. The boundary fence for the Smalley Cove pasture would be replaced along County Road 222 and a fence would be constructed along the northern Forest Service boundary of the pasture. This field has had chronic trespass, due to poor fence infrastructure, primarily, by unauthorized livestock and overuse has occurred, particularly in the lower Fish Creek and Smalley Cove riparian areas. This trespass and uncontrolled use has made quantifying the current level of use difficult. Therefore, the proposed livestock use for Smalley Cove pasture is conservative and would authorize up to 50 cow/calf pair for the month of June. This authorized use would be monitored to determine if compliance is being met. If monitoring data shows that the field can support more use over an extended season then an adjustment may be made in season and numbers. A 0.5 acre wire livestock holding trap is proposed at the junction of Country Road 235 and the entrance to Southern California Edison Powerhouse #4. This field would be used to gather straggler livestock at the end of the permitted season. Desired conditions are being met, with the exception of the Smalley Cove pasture (Range Analysis as referenced in Project File), hence the need for change described above.

Reduction in cattle and Season of Use – Alternative 3

Under Alternative 3 the Sierra National Forest would authorize continued livestock grazing on National Forest System (NFS) lands within the Long Ridge and Castle Peak Range Allotments over a total of 13,400 acres (private property not included in acreage). Cattle use under Alternative 3 would be as displayed in Table 5.

Castle Peak:

Under Alternative 3 there would be no summer season grazing authorized in the Castle Peak Allotment. Proposed numbers of cattle would be reduced from the Proposed Action by 95 cow/calf pair overall. This alternative would authorize 205 cow/calf pair from March 1 to June 30. The season of use and permitted

numbers matches up with the summer range used in conjunction with this allotment (Haskell Allotment has 205 permitted cow/calf pair July 1 to September 30).

Long Ridge:
Under Alternative 3, the proposed numbers of cattle would be similar to the proposed action. The season of use would be extended by 2 weeks from the Proposed Action season, to allow livestock to use the allotment through June 30 with 165 cow/calf pair authorized. The season of use matches up with Central Camp Allotment permitted season (on date variable from June 1 –July 1), which is used in conjunction with the Long Ridge Allotment.

Table 5. Proposed grazing season (period of use) and livestock numbers for Castle Peak and Long Ridge allotments.

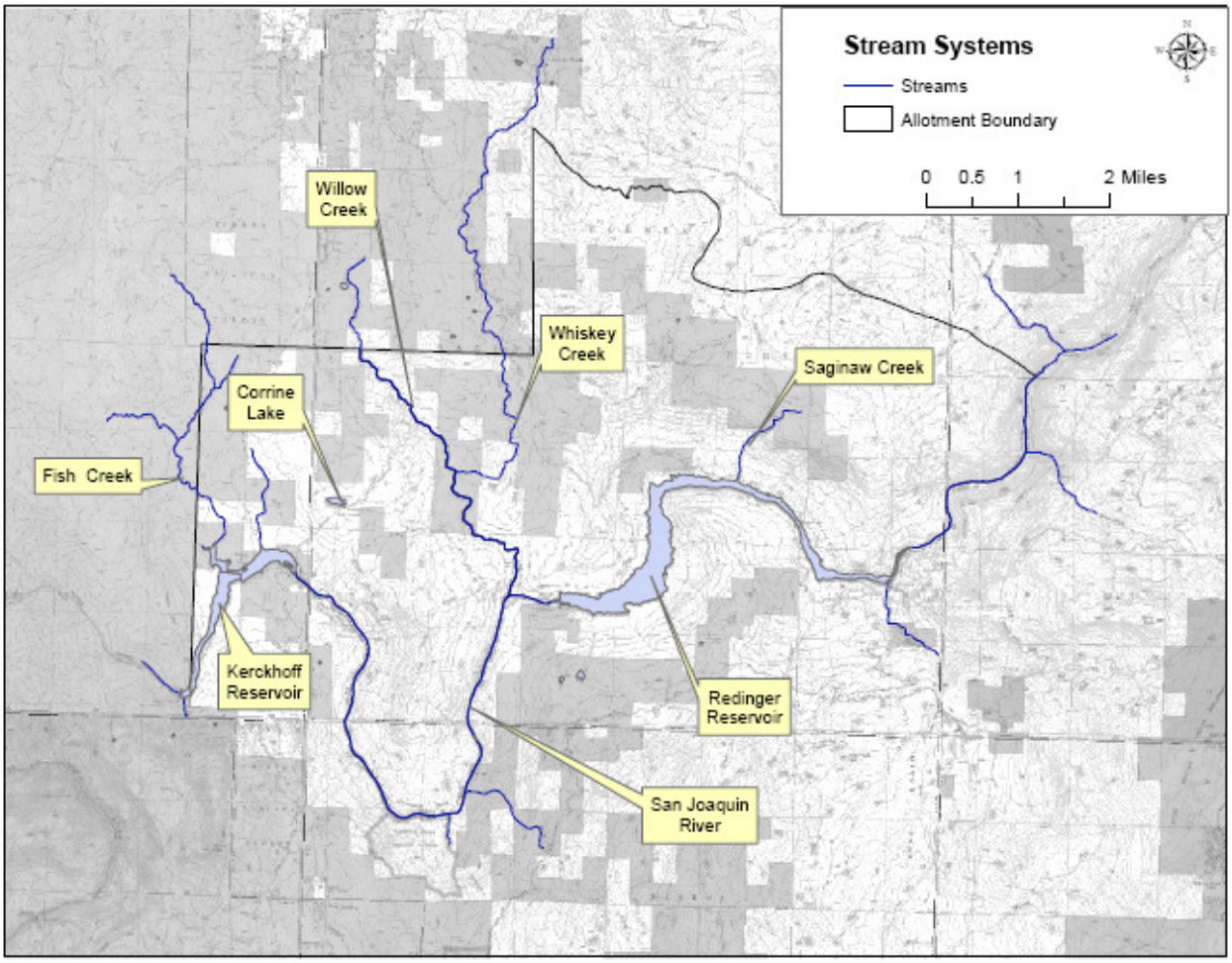
Allotment	Pasture	Livestock			Period of Use	
Long Ridge	Long Ridge Horse Pasture (gather pasture)	~100	cattle	cow/ calf	Early March at Livestock Turnout	Early June at Livestock Gather
Long Ridge	Smalley Cove Pasture (PG&E/Forest Service) (gather pasture)	50	cattle	cow/ calf	June 1	June 30
Long Ridge	All Units	125	cattle	cow/ calf	March 1	June 30
Long Ridge	All Units	40	cattle	cow/ calf	March 1	June 30
Castle Peak	Redinger	100	cattle	cow/ calf	March 1	June 30
Castle Peak	Castle Peak	105	cattle	cow/ calf	March 1	June 30

Mitigation
Mitigation measures would be as presented under Alternative 2.

V. EXISTING ENVIRONMENT

The allotments drain to the San Joaquin River system. The 5th field Hydrologic Unit Codes (HUC) drainages are Shaver-Redinger (1804000610), Willow Creek (1804000611), and Fine Gold Creek (0804000612). Elevations within the allotments vary from 900 feet to 2,400 feet. Primary Use Areas are sites of forage where the majority of cattle grazing occur. Secondary Use Areas have suitable forage and represent areas of transitory movement by cattle between Primary Use Areas. There are approximately 27 miles of perennial streams and 9 miles of intermittent streams within the two allotments (Map 2).

Between 1993 and 2003 portions of the perennial and intermittent tributaries within the allotments were surveyed for herpetofauna. USFS surveys have utilized a Visual Encounter Survey (VES) as described in Fellers and Freel (1995). VES have been successfully applied on the Sierra National Forest in detection of foothill yellow-legged frog; mountain yellow-legged frog; Yosemite toad; and western pond turtle, along with numerous common herpetofauna.



Map 2: Streams and lakes within the two allotments.

Long Ridge Allotment: The Long Ridge Allotment drains to the San Joaquin River, which forms the southern boundary of the allotment. Primary tributaries include Fish and Willow Creeks. Kerckhoff Reservoir and Corrine Lake (both associated with hydroelectric development) are located within the allotment. There are also numerous small stock ponds on private property across the allotment. An interdisciplinary review of Proper Functioning Condition (BLM 1995) at several sites took place during

2008. An unnamed tributary to Kerckhoff Lake was evaluated as Function –At Risk with an upward trend in 2008. However, a flume breach of PG&E's No. 1 Ditch on April 28, 2009 caused significant erosion and mobilization of sediment from the point of failure to Kerckhoff Reservoir via this unnamed tributary. Deposition of this sediment compromised the pool function (i.e., estimated filling of 90%, a 70% increase from the original survey) along the reach analyzed for PFC, and thus the classification was revised to "FAR, downward trend". Fish Creek at the Smalley Cove Gather Pasture was evaluated as Functional At-Risk with No Apparent trend (BLM 1995). A reduction in the period of use at the Smalley Cover Gather Pasture is a component of the Proposed Action. Two springs (Teddy's and another off the Horseshoe Bend Trail) were identified for cattle exclosures to reduce current effects from cattle movement at these sites.

San Joaquin River

The San Joaquin River segment is confined, and channel gradient is generally moderate (<4%). Most of the elevation loss occurs in the boulder-strewn, cascade habitats situated between pools. The substrate through the reach is primarily composed of large boulders and bedrock. Few deposits of gravel or cobble are located throughout the reach. Aquatic habitat is dominated by long, deep pools, although runs, pocket water, shallow pools, riffles, and cascade habitat types are also present.

Prior to flow regulation for hydroelectric development, the river had annual scouring flows during the spring snowmelt. Presently scouring flows occur roughly one year in three. Contractors for Southern California Edison did not detect any special interest herpetofauna during relicensing the Big Creek No. 4 hydroelectric project in the late 1990s.

The river is within the squawfish-sucker-hardhead zone described by Moyle (1976, 2002) as occurring in the Sierra foothills of the San Joaquin Valley. The Horseshoe Bend segment of the river is dominated by hardhead minnow (*Mylopharodon conocephalus*) and Sacramento suckers (*Catostomus occidentalis*). Sacramento pikeminnow and rainbow trout (*Oncorhynchus mykiss*) are also present. This river segment is unique among mid-elevation Sierran streams and reservoirs because populations of hardhead remain established (Moyle 1976, 2002; Moyle et al. 1996). In most cases native species may undergo a short period of abundance following reservoir filling, but typically the reservoirs become dominated by exotic fish species within 5-10 years. The persistence of hardhead through this area was recognized with the designation of a Critical Aquatic Refuge (USDA-Forest Service 2001, 2004).

Kerckhoff Reservoir

Kerckhoff Reservoir is a 160 acre impoundment created by Pacific Gas and Electric as part of the Kerckhoff hydropower project. The reservoir has a storage capacity of 4250 acre feet and was created by damming of the San Joaquin River in the early 1920s. No Forest records of past surveys were located for Kerckhoff Reservoir, although the California Natural Diversity Database (CNDDB) indicates western pond turtle have been observed at this site. Adult bullfrogs

were observed during the site visit. Several centrarchid fish species reside in the reservoir. Emergent vegetation (cat tails) is present along portions of the reservoir, and sedges grow along the waters edge. Alder and willow are present along a 5-10 meter riparian band surrounding the reservoir. Beyond the riparian influence area, are scattered oaks and grey pine. There are several protected coves along the perimeter of the lake

Fish Creek

Fish Creek is a tributary to the San Joaquin River. The stream segment is influenced by Kerckhoff Reservoir, which creates an upstream backwater effect through the reach. The stream channel was < 2% and evaluated as a Rosgen (1996) Type C5, indicating low channel gradient, slight confinement, and moderate sinuosity. Stream habitat is flat water (all runs and pools). The substrate is primarily sand, although several rock outcrops are present. Some bank incision was noted particularly at meander bends. Native minnows were observed in pools, likely Sacramento pikeminnow or Sacramento sucker. It is probable that centrarchid fish species within Kerckhoff Reservoir have access to this lower gradient stream segment. The stream is less than 30% shaded and has emergent vegetation. Surrounding vegetation in the riparian zone is a scattered willow overstory with a dense blackberry understory. The willows give way to oak beyond the riparian zone (5 meters wide), which has scattered alder. All lifestages of bullfrog (*Rana catesbeiana*) were observed in the creek.

Corrine Lake

Corrine Reservoir is an 8 acre impoundment created by Pacific Gas and Electric as part of Crane Valley hydropower project. The reservoir has a storage capacity of 70 acre feet and flows directly to the Wishon Powerhouse on Kerckhoff Reservoir. No Forest Service records of past surveys were located for Corrine Lake. The site was surveyed for herpetofauna by contractors for Pacific Gas and Electric in 1997 and 2000 during the relicensing of the Crane Valley Project. Bullfrogs were observed at the site. Some emergent vegetation (cat tails: *Typha sp*) is present along portions of the lake, and sedges grow to waters edge. Little riparian shading is available at the site (a few oaks along top of bank). Grass and blackberry provide ground cover on lower banks. The site is occupied by both centrarchid and salmonid fishes. Corrine Lake has a "catchable" rainbow trout program and receives an allotment of 6,000 trout each year. The lake also has a reproducing population of largemouth bass (*Micropterus salmoides)* and green sunfish (*Lepomis cyanellus)*.

Castle Peak Allotment: The Castle Peak Allotment drains to the San Joaquin River, which forms the southern boundary of the allotment. Primary tributaries include Willow, Whiskey, and Saginaw Creeks. Redinger Reservoir forms the boundary of the allotment. There are also small stock ponds on private

property across the allotment. An interdisciplinary review of several stream segments took place during 2008. Lower Willow Creek and Saginaw Creek (within Allotment) were both evaluated as being in Proper Functioning Condition (BLM 1995).

Redinger Reservoir

Redinger Reservoir covers 464 acres, and inundates approximately 5.25 miles of riverine habitat. The Reservoir was constructed by Southern California Edison as part of the Big Creek No. 4 Hydroelectric Project. The steep topography of the area results in a minimal amount of shallow water habitat and no extensive coves. The upstream one-third of the reservoir, above Italian Bar Bridge, is particularly narrow and exhibits characteristics of a river. Flow enters the reservoir from the San Joaquin River, Big Creek Powerhouse No. 3. The fish population is dominated by hardhead, Sacramento sucker, and Sacramento pikeminnow. Two introduced centrarchid fishes, bluegill (*Lepomis macrochirus*) and green sunfish (*L. cyanellus*) are present in small numbers. Fish abundance is lower in deep near-shore areas, which is characteristic of the majority of the reservoir shoreline. Centrarchid fish populations are limited by lack of spawning habitat, and lack of near-shore shallow habitat which is important for growth and survival of early fish lifestages.

Willow Creek

Willow Creek is a tributary to the San Joaquin River with a confluence approximately 0.25 mile downstream from Dam 7 (Redinger Reservoir). Flows are regulated by PG&E's Crane Valley Hydroelectric project. Minimum instream flows are supplemented by Whiskey Creek, which enters Willow Creek approximately 2 miles upstream from the confluence with the San Joaquin River. The stream has moderate gradients, is moderately confined, has a boulder/cobble substrate, and limited sinuosity. The habitats are primarily flat water (pools and runs). Upstream of the confluence with Whiskey Creek, the pools and runs have an abundance of sand. Streambanks below Whiskey Creek are generally stable between the rock substrate and encroached vegetation.

The riparian zone is approximately 10 meters wide, comprised of an alder/conifer mix, and has a stream shading of 50%. Due to flow regulation, overbanking flows are rare and there is riparian encroachment. Because of the encroachment, willows and sedges serve as emergent vegetation.

The Forest Service conducted 5 surveys for herpetofauna within the lower segment of Willow Creek during 1999. Additionally, contractors for Pacific Gas and Electric (PG&E) surveyed segments of the creek in 1997 and 2000 during relicensing of the Crane Valley Hydroelectric Project. Surveys have identified bullfrog, Pacific tree frog (*Hyla regilla*), and western pond turtle (*Clemmys marmorata*) along

the creek. The lower segment of Willow Creek is occupied by native minnows, primarily Sacramento pikeminnow, Sacramento sucker, and some hardhead minnow. A few smallmouth bass and bluegill were sampled by PG&E during 2007. Upstream of the confluence with Whiskey Creek, bluegill is more established.

Whiskey Creek

Whiskey Creek is a tributary to Willow Creek with a confluence approximately 2 miles upstream from the San Joaquin River. The majority of the creek and ponds within the drainage are located on private property and have not been surveyed by Forest Service personnel. Based on topographic maps and review of the creek channel at road crossings, the stream is generally moderate-high gradient, has slight confinement, and moderate sinuosity. Habitat was observed to be primarily runs, with shorter pool:riffle sequences. The substrate is primarily cobble. Some bank scour has occurred in the past, but banks now appear generally stable. Juvenile and adult trout (both brown and rainbow) were observed. The canopy cover is estimated to be more than 70%. Surrounding vegetation in riparian zone is alder and willow.

Saginaw Creek

Saginaw Creek is an intermittent tributary to Redinger Reservoir. The stream through the Castle Peak Allotment is primarily high gradient, with a boulder/bedrock substrate that provides a stable channel. However, upstream of the allotment the channel is lower gradient and the banks have less cover. The drainage is a mixture of front country and mixed-conifer vegetation. The creek does not contain fish, although western pond turtle occur in the drainage. Past surveys have also documented Pacific tree frogs.

VI. Species Account and Status

California Red-legged Frog

The California red-legged frog (CRLF; *Rana aurora draytonii*) was federally listed as threatened on May 23, 1996 (61 **FR** 25813). Critical habitat was designated in 2001 (66 **FR** 14625), a final recovery plan was published in 2002 (67 **FR** 57830; USFWS 2002), and updated on April 13, 2004 (69 **FR** 19619) . The Sierra National Forest is a part of the "Sierra Nevada Foothill and Central Valley" recovery unit. However, the Sierra National Forest was not listed as critical habitat for the species in 2001 or 2004 critical habitat designations (66 **FR** 14625 and 69 **FR** 19619), nor were any recovery elements established for the species on the Sierra National Forest in the species recovery plan (67 **FR** 57830; USFWS 2002).

CRLF is a highly aquatic species typically found in ponds or streams with pool depths exceeding 0.7 meters. Desired habitat includes overhanging vegetation such as willows, as well as emergent and submergent vegetation (Hayes and Jennings 1988). It is generally found in or near water, but does disperse away from water after rain storms (Martin 1992). This species of frog breeds along aquatic vegetation in deep, slow water (<2% gradient) environments during the months of November through March in most of their current range (USFWS 1996). Breeding in the Sierra Nevada may occur later due to freezing temperatures between November and February. Breeding would likely occur between March and May at higher elevations. Permanent or nearly permanent pools are required for tadpole development, and emergent and overhanging vegetation is used as refugia by adult frogs. Ponds with cattails or other species provide good cover (Martin 1992). The amount of time needed for metamorphosis is highly dependent on temperature and tadpole development takes 11 to 20 weeks (Jennings and Hayes 1994).

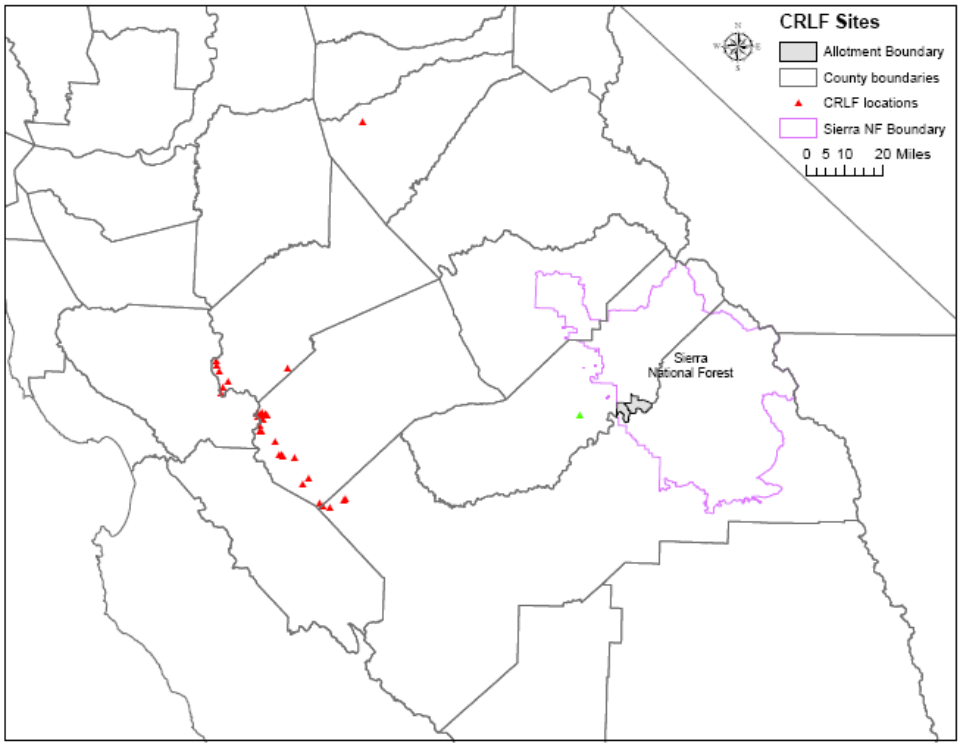
CRLF require permanent aquatic habitats for breeding, feeding and shelter. As adults, they may also utilize moist, sheltered terrestrial habitat near streams. Rathbun et al. (1993) report that this frog estivates in small mammal burrows and moist leaf litter up to 85 feet from water in dense riparian vegetation. This behavior occurs where the aquatic habitat is intermittent in nature. During wet periods, especially in the winter and early spring months, CRLF disperse away from their breeding habitat to seek suitable foraging habitat.

Small to medium perennial streams can provide breeding habitat if they are protected from seasonal scouring flows. Streams in this category generally have the potential for deep pools and riparian vegetation to provide the habitat requirements for this frog.

This species is highly restricted in the Sierra Nevada, and has been eliminated from 95% of its historic range (Jennings and Hayes 1994). Habitat loss and alteration, the introduction of bullfrogs and other predators, and historic commercial timber harvest have been implicated in the population decline (Moyle 1973; Jennings 1988). Presence and abundance of species that prey upon and compete with CRLF such as bullfrogs and centrarchid fishes may make habitat unsuitable.

<u>Species Occurrence on the Sierra National Forest</u>: Few populations of CRLF remain along the Sierra Nevada mountain range. CRLF records were queried from the CNDDB for Fresno, Madera, Kings, and Mariposa counties and are displayed on Map 3. Review of records in the CNDDB reveals no known locations of CRLF within the project area or within 1.6 miles of the project area. There are no historic records of CRLF occurrence within the Sierra National Forest. The CNDDB (summarized in Table 6) shows the nearest location to be along Little Panoche Road in NW Fresno County. This site is approximately 75 air miles from the project area. Review of specimen records from the Museum of Vertebrate Zoology (MVZ: Berkeley, California) for Fresno and Madera counties indicates the closest

CRLF specimens were collected near O'Neals, California (Madera county) in 1952. This site is also displayed on Map 3.



Map 3: locations of California red-legged frogs (green triangle is MVZ record)

CNDDB Occurrence	***Site***	***County***	***Quad***
85	Mine Creek	Fresno	Mercy Hot Springs
90	Little Panoche Valley	Fresno	Ortigalita Peak
507	Little Panoche Detention Dam	Fresno	Laguna Seca Ranch
804	Little Panoche Reservoir	Fresno	Laguna Seca Ranch

Table 6: *Results of CNDDB query for 6/30/2008*

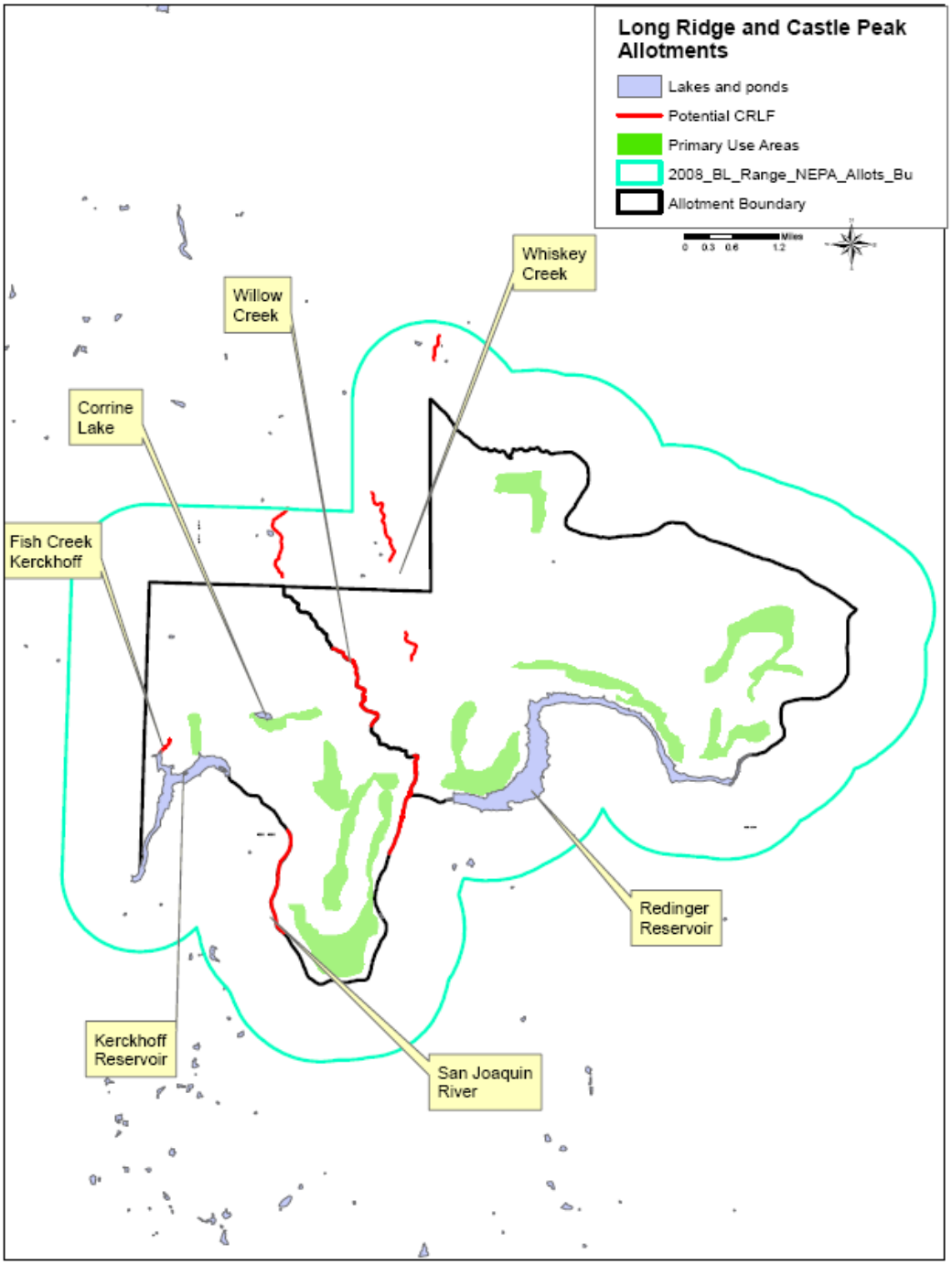
Species experts (CDFG 1994) Mark Jennings and Bob Hansen have been contacted regarding occurrences of CRLF on the Sierra National Forest. Both individuals list 4 historic sightings for CRLF in the area of the Sierra National Forest, although the records are for foothill sites to the west of the actual Forest boundary. The four records are: Willow Creek (near O'Neals); Fine Gold Creek; the San Joaquin Experimental Range; and Miami Creek. Except for the San Joaquin Experimental Range, all sites are on private property. Mr. Jennings indicated that he had surveyed the Experimental range and found bullfrogs. Both Mr. Jennings and Mr. Hansen consider CRLF to be extirpated from areas adjacent to the Sierra National Forest, probably since the late 1960s.

CRLF generally occur at elevations below 5,000 feet in relatively flat (< 4% slope) streams with deep (> 0.7 meters) pools (USFWS 2002). The California Wildlife Habitat Relationships (CWHR) highly suitable habitats (CDFG 2005) for this species are riverine and fresh emergent wetlands with submerged organic, mud, and sand substrates and with short or tall herbaceous species and vegetation closures

greater than 10%. The areas that might support CRLF breeding habitat within the project area (defined as perennial streams and ponds under 5000 feet elevation, with channel gradients less than 4 percent with at least one pool deeper than 0.7 meters) was determined through Habitat Assessment (USDA-Forest Service 2008).

Ten sites (Map 4) were identified from GIS topographic maps and aerial photographs as being potentially suitable breeding habitat for the CRLF. Five of the sites are on federal lands, while the remaining 5 are on private property. The results of data collected during the Habitat Assessment are displayed in Table 7.

Map 4: segments of potential breeding habitat resulting from GIS query.



Stream	Channel gradient	% Pool (linear)	% Runs (linear)	% Riffles (linear)	maximum pool depth (m)	Channel scour	emergent vegetation	salmonids present	centrarchids present	bullfrogs present	migration barriers downstream
Fish Creek (Kerckhoff)	<2%	26	74	0	1.4		x		x	x	
Kerckhoff Reservoir					10		x		x	x	
Corrine Lake					5		x	x	x	x	
Redinger Reservoir					20					x	
San Joaquin River above PH 4	2%	43	52	5	3	x		x		x	x
Willow Creek (lower)	2%	58	25	17	1.8		x			x	x
Willow Creek (Dandy Ranch)	2%	55	37	8	1.8		x			x	x
Whiskey Creek						x		x			x

Table 7: Summary for individual CRLF habitat assessments

Although some potential breeding habitat pools were documented (Fish Creek and lower Willow Creek), connectivity, and quantity of the habitat may be limiting (USDA-Forest Service 2008). Fish and lower Willow Creeks provided the best combination of potential breeding habitat. Willow Creek has had flows regulated by a hydroelectric project for nearly a century, while Fish Creek is influenced by Kerckhoff Reservoir. Segments of Willow Creek were identified during the habitat assessment for the relicensing Crane Valley Project, with subsequent protocol surveys (USFWS 1997) conducted by PG&E contractor's in 1998 and 2001. No CRLF were located during protocol surveys, but bullfrogs were abundant. An estimated acreage of suitable habitat (Table 8) is derived from the total miles of stream with a 300-foot buffer for potential breeding segments identified on Map 4) for a total of approximately 580 acres of potential suitable habitat for this species within the two allotments. Of this total, 57% (330 acres is on private property).

Forest Service	Private	Total
250	330	580

Table 8: Approximate CRLF acreage

Foothill yellow-legged frog

The Pacific Southwest Region of the Forest Service designated the foothill yellow-legged frog (*Rana boylii*) (RABO) as a sensitive species in 1998. Historically, foothill yellow-legged frogs occurred between sea level and 6,000 feet in most Pacific drainages west of the Sierra-Cascade crest from the Santiam River, Marion County, Oregon, to the San Gabriel Drainage, Los Angeles County, California (Hayes and Jennings 1988). Threats to foothill yellow-legged frogs have been attributed to habitat loss and alteration combined with predation and competition from the bullfrog which was introduced to California early in the 1900's (Moyle 1973).

RABO are moderate in size, measuring between 37-82 mm (1.5 – 3.2 inches). They are found in or near rocky streams and rivers in a variety of habitats including valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types (Stebbins 1985). The CWHR highly suitable habitats (CDFG 2005) for this species are riverine and valley foothill riparian with mostly submerged and flooded gravels, cobble, boulders, and bedrock with trees greater than six inches in diameter and canopy closures greater than 10%.

Foothill yellow-legged frogs prefer partial shade, shallow riffles, and cobble sized or greater substrate (Hayes and Jennings 1986). Occasionally, this species is also found in other riparian habitats, including moderately vegetated backwaters, isolated pools (Hayes and Jennings 1986), and slow moving rivers with mud substrates. Breeding occurs in shallow, slow flowing water with at least some pebble and cobble substrate between March and June after high flows have receded. During breeding season and in the summer, RABO are rarely encountered far from permanent water.

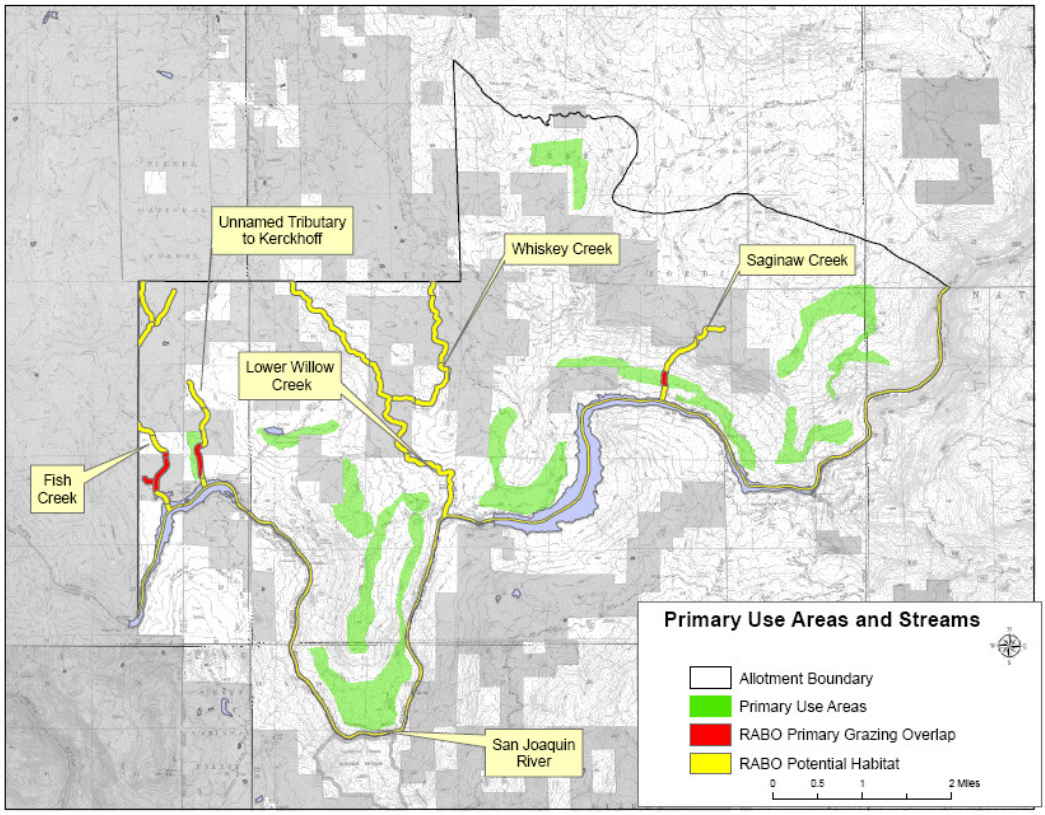
This species generally occurs at elevations below 5,000 feet in perennial streams with breeding areas defined by some shading (> 20%), water temperatures not exceeding 20°C for egg-laying and larval development, shallow riffles ($\leq$ 0.21 m), and cobble or larger substrates (Hayes and Jennings 1986; CDFG 2005).

Species Occurrence on the Sierra National Forest: Jose Creek is the only known population of this species on the Sierra National Forest (adjacent to portions of the Castle Peak Allotment). A RABO sighting was reported downstream from Manzanita Lake (NF Willow Creek) during CRLF protocol surveys in 2001. However, the animal was not captured or photographed for confirmation. Previous surveys and those conducted after the sighting found bullfrogs to be prevalent. The CNDDB indicates a report of RABO by Moyle near the confluence of the two forks of Willow Creek in 1970, several miles upstream of the two allotments,.

Suitable habitat for this species is being considered as perennial and intermittent streams below 5,000 feet in elevation (Map 5). Within the two allotments there is approximately 36 miles of potentially suitable habitat. Surveys to determine the actual suitability of RABO habitat have not covered every site, thus it is probable that actual suitable area is less. An estimated acreage of suitable habitat is derived from the total miles of stream with a 330 foot buffer (165 ft each bank (CDFG 2005)) for an approximate total of 720 acres of potential suitable habitat (Table 9) for this species within the two allotments (30% on private property).

Forest Service	Private	Total
490	230	720

Table 9: Approximate RABO acreage



Map 5: Perennial and intermittent streams below 5000 feet represent potential habitat for RABO

Western pond turtle

The Pacific Southwest Region of the Forest Service designated the western pond turtle as a sensitive species in 1998. The central Sierra Nevada Mountains are an area of overlap between two pond turtle subspecies, *Clemmys marmorata marmorata* (northwestern pond turtle) and *Clemmys marmorata pallida* (southwestern pond turtle). These pond turtles, collectively known as western pond turtles (WPT), are found from sea level to 4,690 feet in elevation (Jennings and Hayes 1994). Historically, WPT occurred along the west slope of Cascade/Sierra Nevada mountain ranges from the Columbia River to northern Baja California (Stebbins 1985).

Habitat for WPT occurs in a variety of both permanent and intermittent aquatic habitats. This turtle is often restricted to areas near the banks or in quiet backwaters where the current is relatively slow and basking sites and refugia are available (CDFG 2005). WPT movements of over 1 mile have been reported when local aquatic habitat conditions change (e.g. drought), however most stay within 325 feet of the stream channel mainly moving during breeding and egg-laying (CDFG 2005). Holland (1991) references information indicating that a significant portion of the turtles occurring in pond environments move out into adjacent wooded or grassland habitats to over-winter, with two turtles found dormant under logs and others in duff and litter under trees. Aerial basking on logs and rocks occurs when air temperature exceeds water temperature (Holland 1991).

Mating occurs in late April to early May (Holland 1991). Young WPT are believed to over-winter in the nest (Holland 1985). When hatchlings leave the nest they occupy shallow water habitats where they feed on nekton (Holland 1991). In California, maturity occurs at about 8 years (CDFG 2005).

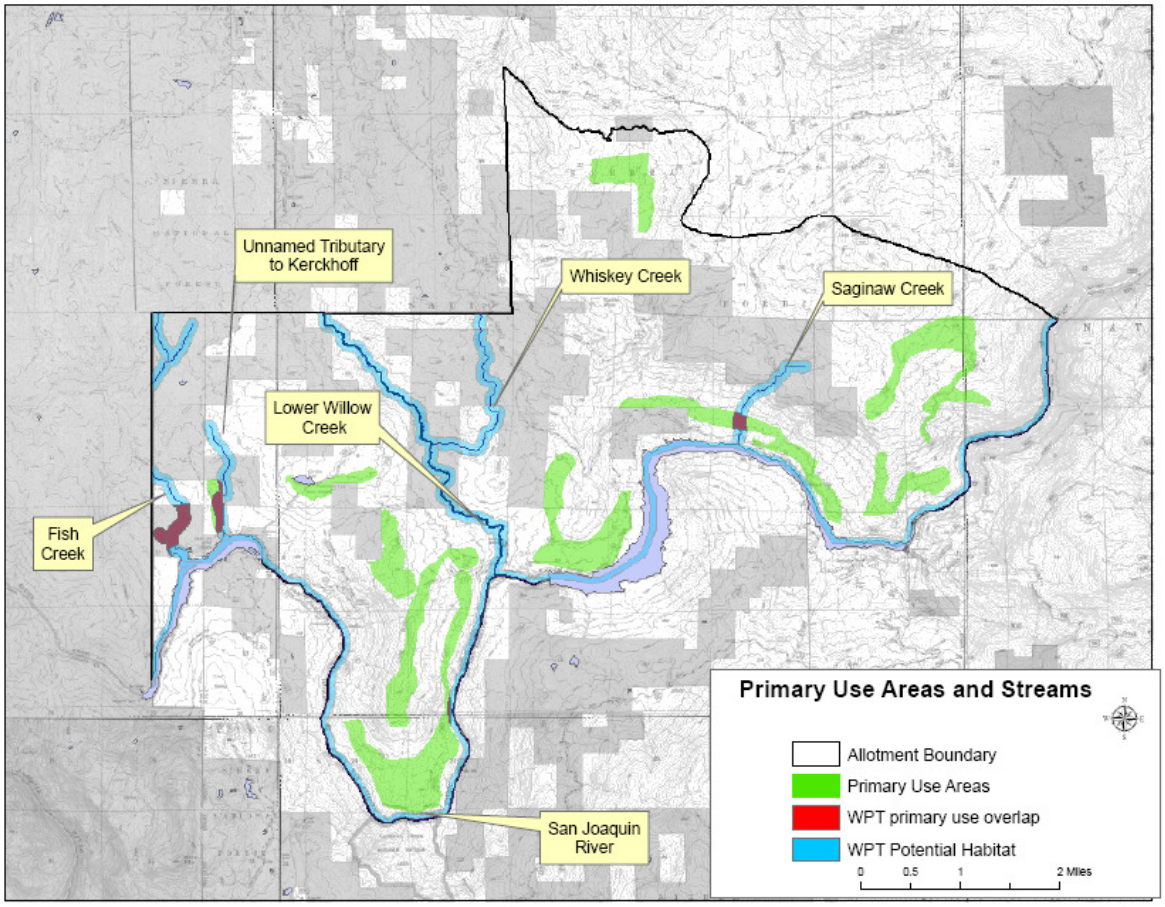
WPT have declined due to loss and fragmentation of habitat, farming and land development, commercial exploitation in the late 19th century, drought, grazing, lacking of recruitment (nesting failures),

introduced predators and competitors (fish, bullfrogs, red fox, black bear), and increased raccoon populations due to human disturbance (Holland 1991).

Species Occurrence on the Sierra National Forest: On the Bass Lake Ranger District there are two main populations of WPT, one of which occurs in the Willow Creek drainage downstream of Bass Lake. There are also Forest Service records of the species occurring in Saginaw Creek, and a CNDDB record of WPT for Kerckhoff Reservoir. Two tributaries on the south side of Redinger Reservoir (Italian and Jose Creeks) also are occupied by WPT. The CWHR highly suitable habitats (CDFG 2005) for this species are blue oak woodland, blue oak – foothill pine, fresh emergent wetland, lacustrine, riverine, valley foothill riparian, and valley oak woodland. Highly suitable areas include those with short or tall herbaceous plants and vegetation closures greater than 40% with trees larger than six inches in diameter and canopy closure greater than 10% is highly suitable. Highly suitable areas in streams, lakes, and pond habitats are those that range from mostly exposed to flooded cobbles, boulders, and bedrock. Potential habitat (Map 6) was evaluated as perennial and intermittent streams (36 miles), along with ponds below 5000 feet elevation. Movements of 325 to either side of the channel would define potential habitat. There is an estimated 1610 acres of potential habitat (Table 10) within the two range allotments. There are additional acres of ponds on private property.

Forest Service	Private	Total
1090	520	1610

Table 10: Approximate WPT acreage



Map 6: WPT potential habitat and overlap with Primary Use Area for grazing

Hardhead minnow

Hardhead minnow (*Mylopharodon conocephalus*) are large cyprinids that are widely distributed from the Kern River in the south, to the Pit River in the north. In the San Joaquin River drainage, populations are scattered in the tributary streams, but absent from the valley reaches of the main river (Moyle and Nichols 1973, Moyle 1976, 2002). In the Sacramento River drainage, hardhead are present in most of the larger tributary streams as well as the main river. They are also present in the Russian and Napa Rivers, and are widely distributed in the Pit River drainage. The Pacific Southwest Region of the Forest Service designated the hardhead as a sensitive species in 1998. The Sierra National Forest LRMP (USDA-Forest Service 1992) does not provide specific management guidelines for this fish. However, Forestwide goals and objectives include managing habitat for Forest Service sensitive species in a manner that prevent any species from becoming a candidate for threatened or endangered status.

Hardhead are typically found in undisturbed areas of larger, low-middle elevation streams (Moyle and Nichols 1973 Moyle 1976, 2002) with elevational ranges from 10-1,450 m. Most occupied streams have summer temperatures in excess of 20° C. The species is intolerant of low oxygen levels, thus their distribution is limited to well-oxygenated streams and the surface waters within reservoirs. Hardhead prefer clear, deep (>1 m) pools with sand-gravel-boulder substrates and slow water velocities (< 25 cm/s) (Moyle and Nichols 1973; Knight 1985; Moyle and Baltz 1985). In streams, adult hardhead tend to remain in the lower half of the water column, while juveniles concentrate in shallow water close to the stream edges (Moyle and Baltz 1985). The species is always found is association with Sacramento pikeminnow and usually with Sacramento sucker, while usually absent in streams with introduced centrarchids (Moyle and Nichols 1973; Moyle 1976, 2002) or streams that have been severely altered by human activity (Baltz and Moyle 1993).

Hardhead are bottom feeders that forage for benthic invertebrates and aquatic plant material in quiet water. They will also feed on plankton and surface insects. Young (<20 cm SL) feed primarily on mayfly larvae, caddisfly larvae, and small snails, whereas larger fish feed more on aquatic plants, as well as crayfish and other large invertebrates. Adults have large molariform pharyngeal teeth, but juvenile teeth are hook like. During spawning season adult males may develop fine nuptial tubercles in the head region (Moyle 1976). Spawning occurs in May-June in Central Valley streams, but spawning season may extend into August in foothill drainages (Wang 1986). Spawning presumably involves mass spawning in gravel riffles (Moyle 1976, 2002). Female fecundity varies from 9,500 to over 20,000 eggs (Burns 1966). Hardhead reach 7-8 cm in length by their first year, but growth slows in subsequent years. Hardhead mature following their second year. Adults are brown-bronze in color while juveniles are silver. Adults may reach lengths in excess of 60 cm SL (Moyle 1976, 2002).

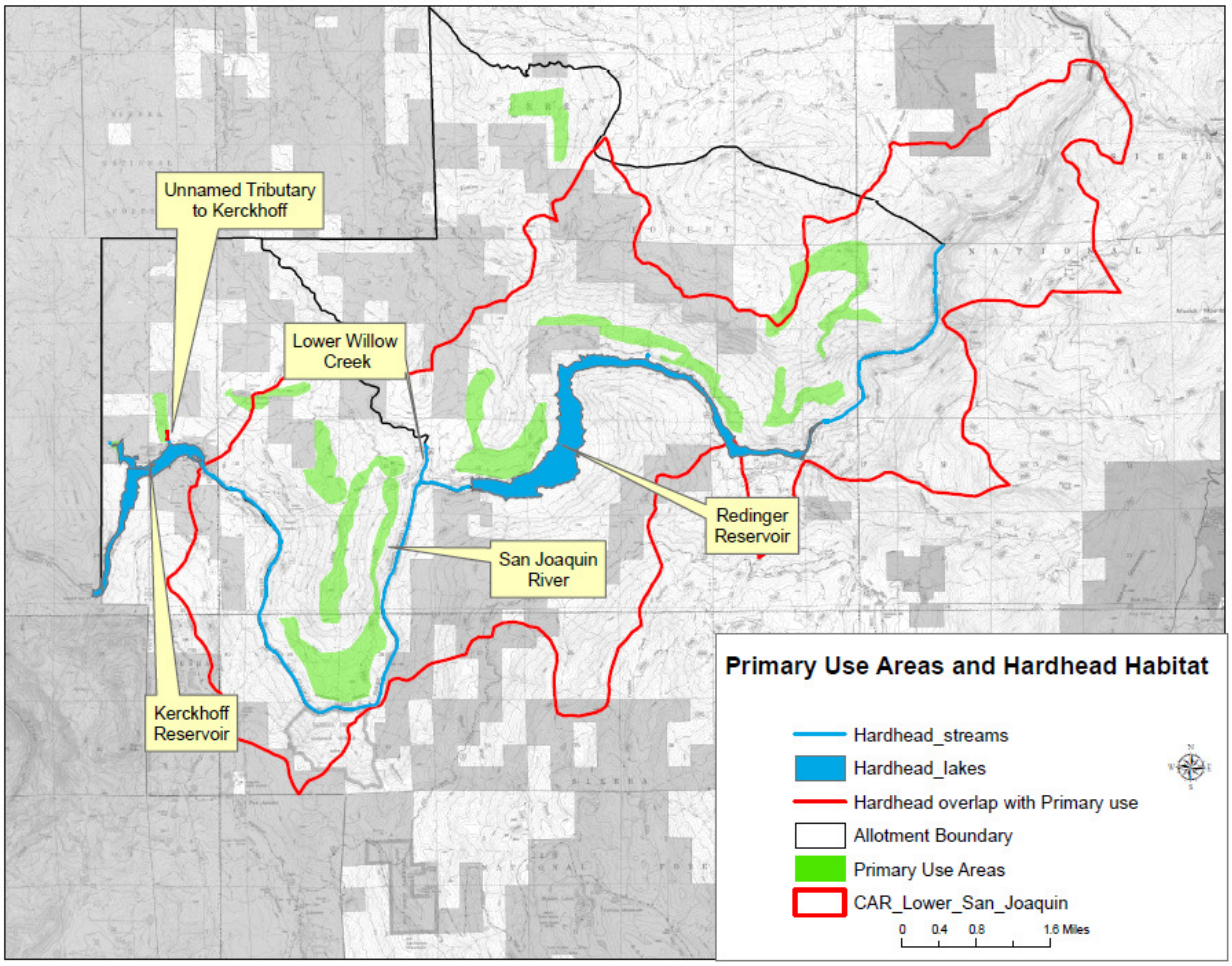
Hardhead are still widespread in foothill streams, but their specialized habitat requirements, combined with widespread alteration of downstream habitats, has results in localized, isolated populations which makes them vulnerable to localized extinctions. In the San Joaquin drainage, a survey of species occurrence indicated only a 9% occupancy of likely historic habitat (Moyle and Nichols 1973). A subsequent survey of the same areas 15 years later indicated hardhead populations had disappeared (Brown and Moyle 1987). Populations behind new dams tend to become abundant for several years until introduced predators become established and the hardhead population may decline dramatically (Moyle 1976, 2002). Hardhead require large to medium-sized, cool to warm-water streams with natural flow regimes for their long-term survival. Because such streams are increasingly dammed and diverted, creating unfavorable or isolated habitats, populations are declining or disappearing gradually throughout its range. Introduction of centrarchid predators, notably small-mouth bass (*Micropterus dolomieui*), leads to declines in hardhead populations (Brown and Moyle 1993).

<u>Species Occurrence on the Sierra National Forest</u>: On the Sierra National Forest, hardhead are prevalent in the San Joaquin River upstream from Big Creek Powerhouse No. 4 and in Redinger Reservoir. They also

occur in low numbers in the lowest ½ mile of Willow Creek, in the San Joaquin River upstream of Redinger Reservoir, Kerckhoff Reservoir, and the lowest 1/8 mile of an unnamed tributary to Kerckhoff Reservoir. This area was designated a Critical Aquatic Refuge (USDA-Forest Service 2001, 2004) due to the continuing presence of hardhead. Habitat for hardhead would be perennial streams with summer temperatures in excess of 20° C. Hardhead prefer clear, deep (>1 m) pools with sand-gravel-boulder substrates and slow water velocities (< 25 cm/s). Potential habitat (Map 7) was evaluated as segments of the San Joaquin River, lower Willow Creek, an unnamed tributary to Kerckhoff Reservoir, Kerckhoff Reservoir, and Redinger Reservoir. There is an estimated 650 acres of potential habitat (Table 11) within the two range allotments.

Forest Service	Private	Total
650	0	650

Table 11: Estimated hardhead acreage



Map 7: Hardhead minnow habitat in relation to Primary Use Grazing Areas

VII. EFFECTS OF THE PROPOSED PROJECT

This section analyzes the effects of re-authorizing cattle grazing in the Long Ridge and Castle Peak Allotments on aquatic species and their habitats. Effects are discussed in terms of direct, indirect, and cumulative impacts on the listed aquatic species and their habitats presented in the previous section (Section V).

Direct effects are caused by a proposed activity and are immediate in nature (e.g. cattle trampling individuals). Indirect effects are caused by a proposed activity but are later in time or farther removed in distance, but are reasonably certain to occur (e.g. cattle trails and congregation areas may compact soils which reduce potential burrow habitat). Interrelated effects are actions that are part of a proposed activity and are dependent upon that proposed activity for their justification (e.g. stabilization of cattle trail stream crossings). Interdependent effects are actions that have no independent utility apart from the proposed activity (e.g. allotment fence maintenance).

A cumulative effect is the effect on the environment that results from the incremental effect of the action when added to the effects of other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes the other actions and regardless of land ownership on which the other actions occur. Reasonably foreseeable future actions include those that are in any stage of project planning and those for which decisions have been made and are awaiting implementation. Cumulative effects are usually stated in terms of spatial (e.g. timber harvest, mining, and the proposed activity overlap in the same area of habitat) and temporal effects (e.g. changes in habitat over time from the past to the present to the future with and without the proposed activity).

Environmental Consequences

Numerous effects on aquatic habitat and species (Figure 1, and Appendix B) have been attributed to prolonged use of riparian areas by cattle. Menke et al. (1996) identify that grazing of domestic livestock had probably affected more area in the Sierra Nevada than any other management practice. This was a consequence from the unregulated grazing between 1850-1891, primarily by sheep. Kinney (1996) notes that "*Without regulated access during the late 1800s, overuse of the common rangeland of the Sierra Nevada occurred, because forage conservation by any one livestock operator would be captured by another. As a result, Sierra Nevada rangeland were overgrazed, in that forage plants did not have enough time to recover after severe, repeated grazing*."

Literature suggests cattle grazing can alter channel function, which reduces natural processes, habitat diversity and habitat complexity for aquatic or riparian animals (Elmore and Beschta 1987; Clary and Webster 1989; EPA 1991; Meehan et. al. 1991; Belsky et. al. 1999). Grazing can affect water quantity by changing the pattern and timing of runoff, as well as increasing sediment loads through removal of riparian vegetative cover and by trampling of streambanks. Hydrologic alteration can result in changes to channel morphology, resulting in channel downcutting, over-widening, and lowering of the water table. Additionally, movement of cattle within riparian zones can lead to reductions in stream shading, compaction of stream banks, and trampling of stream banks (Meehan et al. 1991; Armour et al. 1994). All of these factors can result in negative effects to habitat for herpetofauna. However, quantifying effects related to continued cattle grazing and recovery from past effects has proved difficult to evaluate due to absence of reference sites that have never been grazed by livestock (Kattelmann 1996). Herpetofauna experts have identified livestock grazing as one of the factors contributing to declines of habitat (Jennings 1988; Hayes and Jennings 1988; Jennings 1996; USFWS 2002). It is also recognized that stock ponds associated with livestock may increase habitat for some herpetofauna (Fellers 2005; USFWS 2006).

Animal wastes can directly impair water quality through bacterial contamination and increasing nutrient levels (EPA 1991). Cattle manure is rich in nutrients, which can be a concern for aquatic habitat. Lim et al. (1998) found that a 6.1 m wide vegetated buffer reduced nutrient concentrations by 75%, with the exception of nitrate nitrogen (NO3-N) and ammonium nitrogen (NH3-N), which were not reduced by the filter. Gary et al. (1983) found that mean ammonium nitrate concentrations in their study area indicated that cattle presence was not correlated to changes in ammonium nitrate. In a review of studies related to unconfined livestock impacts on water quality, Robbins (1979) noted that nutrient yields are not directly related to animal wastes, but are also

dependent on hydrogeological and management factors. Campbell and Allen-Diaz (1997) monitored nitrate, orthophosphate, dissolved oxygen, temperature and pH in California streams under three different grazing intensities, and found no significant differences between treatments.

Table 12 indicates the lifestages of the herpetofauna that could potentially be present during the period of grazing under Alternatives 2 and 3. Table 13 summarizes potential suitable habitat for the species being evaluated, and the acres of potential habitat that overlap with sites where grazing is focused (Primary Use Areas) and where additional areas where forage is suitable.

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Period of cattle use	Long Ridge						X	X	X	X	X	X	X
	Castle Peak						X	X	X	X	X	X	X
CRLF	breeding/eggs					X	X	X	X				
	tadpoles						X	X	X	X			
	Subadult	X	X	X	X	X	X	X	X	X	X	X	X
	Adult	X	X	X	X	X	X	X	X	X	X	X	X
RABO	breeding/eggs						X	X	X	X			
	tadpoles							X	X	X	X		
	Subadult	X	X	X	X	X	X	X	X	X	X	X	X
	Adult	X	X	X	X	X	X	X	X	X	X	X	X
CLMA	breeding/eggs						X	X	X	X			
	Hatchlings	X	X	X	X	X	X	X	X	X	X	X	X
	Subadult	X	X	X	X	X	X	X	X	X	X	X	X
	Adult	X	X	X	X	X	X	X	X	X	X	X	X
Hardhead	Spawning						X	X	X				
	Fry							X	X	X	X	X	X
	Juv/Adults	X	X	X	X	X	X	X	X	X	X	X	X

Table 12: Overlap of species life cycle and timing of grazing (X indicates lifestage potentially present) for Alternative 2. Summer grazing (7/1 – 9/15) of 40 cow/calf occurs within both allotments under Alternative 2. Under Alternative 3, summer grazing would not occur within the Castle Peak allotment.

Species	Potential Habitat (ac)	Alternative 1 Potential Habitat within Primary Use Grazing (ac)	Alternatives 2 and 3 Potential Habitat within Primary Use Grazing (ac)	Alternatives 2 and 3 Potential Habitat within Suitable Grazing (ac)
California red-legged frog	580	0	40	20
Foothill yellow-legged frog	730	0	40	60
Western pond turtle	1610	0	90	140
Hardhead minnow	615	0	0.1	2

Table 13: Overlap of grazing Primary Use Areas and Potential Habitat for species. Smalley Cove Holding Pasture included as Primary Use. CRLF acreage represent potential breeding habitat (most sites did not represent suitable breeding during site review.) Suitable grazing represents transitory areas of cattle movement and grazing between Primary Use Areas.

Figure 1 summarizes potential effects attributed to livestock grazing on herpetofauna, considering information presented in Table 12 regarding species life histories and timing of cattle utilization.

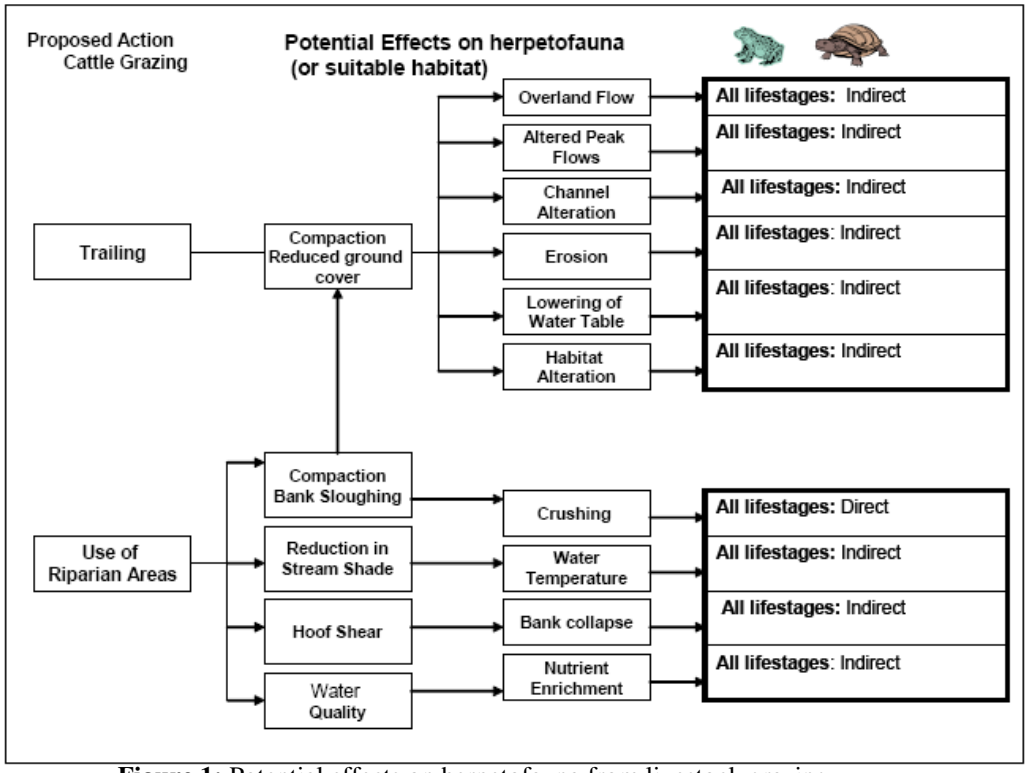


Figure 1: Potential effects on herpetofauna from livestock grazing.

Alternative 1 – No Action

***Direct Effects*:** Under Alternative 1 there would no Forest Service authorized livestock grazing within the Long Ridge or Castle Peak Allotments. Exclusion of cattle would remove cattle from Primary Use Areas providing suitable habitat for special interest herpetofauna and fish. There would be no potential direct effects from cattle trampling on individuals or eggs.

***Indirect Effects*:** None of the potential effects attributed to movement and browsing by cattle within riparian zones noted in the Environmental Consequences section would be anticipated from Alternative 1. Potential effects to habitat resulting from cattle congregation in Primary Use Areas, or trailing through Secondary Use Areas would not occur.

Cumulative Effects: Past, present, and reasonably foreseeable actions within the project areas are displayed in Appendix C. For these allotments, other known activities are off-highway vehicle use, road maintenance, recreational use (both developed and undeveloped), livestock grazing on private property, fish stocking, prescribed fire, and flow regulation for hydroelectric development.

The Project Hydrology Report (Stone 2008) notes that the Cumulative Watershed Analysis including current grazing generated Equivalent Roaded Acres (ERAs) in subwatersheds ranges from 0.15% to 0.65% (with the lower Threshold of Concern (TOC) being 4.0%). The absence of cattle grazing in the two allotments would not result in any increases to existing ERAs, or exceed a lower bound TOC. Cumulative Effects would not be anticipated under Alternative 1.

Alternative 2 – Proposed Action

***Direct Effects*:** As observed in Table 12, there is overlap between the proposed period of cattle grazing within potential habitat for CRLF, RABO, WPT, and hardhead. Direct effects could occur from cattle trampling of individuals or eggs. A western pond turtle was found crushed along a cattle trail on the Sierra National Forest in 1995 (Sanchez per comm.), although not on the Bass Lake Ranger District. This would be more likely to occur

within Primary Use Areas where cattle may congregate, but could also occur in secondary or suitable grazing areas as cattle move between Primary Use Areas.

There are approximately 90 acres of overlap between potential habitat for WPT (Map 6) and Primary Grazing Use areas along two intermittent tributaries (Saginaw Creek and an unnamed tributary to Kerckhoff Reservoir) and a segment of the San Joaquin River. There are an additional 140 acres of suitable grazing overlap, representing transitory movement between Primary Use Areas. Western pond turtle are known to occur along Saginaw Creek .

While RABO does occur in an adjacent drainage, it has not been detected within the two allotments, nor are there records from the MVZ or the CNDDB. Direct effects on RABO would not be anticipated, although there is overlap of approximately 40 acres of potential habitat and Primary Use Grazing Areas (Map 5), and an additional 60 acres overlap with suitable grazing.

Direct effects from cattle on CRLF are not expected since it is highly unlikely that this species occurs within the allotments based on limited breeding habitat available (Fish Creek, Willow Creek, and Corrine Lake), long distances between potential breeding sites, historic annual scouring flows on the San Joaquin River, lack of historic or current detections. However, this an overlap (40 ac) of Primary Use Areas adjacent to sites with potential breeding habitat, with another 20 acres within suitable grazing.

Direct effects to hardhead minnow would not be anticipated due to limited overlap (approximately 2 acres of combined primary and suitable grazing) along Lower Willow Creek, segments of the San Joaquin River, and the unnamed tributary to Kerckhoff Reservoir. Of these streams, only the unnamed tributary to Kerckhoff is small enough that cattle might be enticed to wade into the stream.

***Indirect Effects*:** A myriad of potential effects have been attributed to movement and browsing by cattle within riparian zones, as noted in the Environmental Consequences section. Most of these potential effects would be indirect effects on quantity and quality of habitat for CRLF, RABO, WPT, and hardhead (Figure 1). Most potential indirect effects on habitat relate to erosion resulting from compaction, unstable banks, altered sediment balance, and stream channels. These potential effects could result from cattle congregation in Primary Use Areas, or trailing through Secondary Suitable Use Areas. While overlap of species habitat and Primary Grazing Use Areas appears limited, there is secondary movement of cattle that could affect ephemeral (seasonal) drainages. Ephemeral systems could contribute sediment during periods of flow (during and after precipitation events).

Habitat occupied by hardhead does not appear to have excess accumulation of fines that would be indicative of on-going indirect effects. However, for the occupied unnamed tributary to Kerckhoff Reservoir, the Project Watershed Report (Stone 2009) notes that, "*a flume breach of PG&E's No. 1 Ditch on April 28, 2009 caused significant erosion and mobilization of sediment from the point of failure to Kerckhoff Reservoir via this unnamed tributary. Deposition of this sediment compromised the pool function (i.e., estimated filling of 90%, a 70% increase from the original survey) along the reach"*.

Of the species being evaluated, WPT is known to occur along two streams within the allotments, the two sites also represent potential habitat for RABO. WPT occurs along Saginaw Creek, which also overlaps with an area of Primary Use by cattle. The stream channel in the segment of overlap is higher gradient, with a boulder/bedrock substrate that is less likely to be disturbed by cattle. The Project Hydrology Report (Stone 2008) notes that "*Field observations in this allotment suggest that recent livestock use has not resulted in impacts to stream channels or riparian areas*." Indirect effects on the stream channels within the allotments are not anticipated, however it is likely there would continue to be localized sites of instability resulting from cattle movement.

The Project Hydrology Report (Stone 2009) notes that "*There are no streams in these allotments that appear to have excessive nutrient inputs, which would be identified by observation of heavy accumulations of manure in streams or algal blooms in unexpected areas. This project will minimize pathogen introduction to surface waters by minimizing the time that animals spend in riparian areas and ensuring that riparian areas have adequate remaining vegetation to provide an effective filter*".

Cumulative Effects: Past, present, and reasonably foreseeable actions within the project area are detailed in Appendix C. For these allotments, other known activities are off-highway vehicle use, road maintenance, recreational use (both developed and undeveloped), fish stocking, livestock grazing on private property, prescribed fire, and flow regulation for hydroelectric development. Kinsman I and II utilized prescribed fire in portions of the Saginaw Creek drainage. Following underburning, a reduction in ground may have contributed to short-term increases in sediment to aquatic habitat. The prescribed burn occurred more than 5 years ago and it is expected that needle cast has provided ground cover to areas where burning occurred. The Project Hydrology Report (Stone 2008) includes a Cumulative Watershed Effects Analysis that generated ERAs (including contributions from grazing in these allotments) that ranged from 0.15% to 0.65% (with the lower TOC being 4.0%). The effects of the proposed action are generally similar to past livestock grazing effects; therefore, the cumulative effects are similar to the description of the existing condition. Lower-bound TOCs would not be exceeded under the Proposed Action. As noted under Indirect Effects, excess sediment has been deposited within the deposition reach along an unnamed tributary to Kerckhoff Reservoir as a result of the failure of PG&E Flume No. 1 in April of 2009.

Forest Service actions have Best Management Practices (detailed in Project Hydrology Report), along with Forest standards and guidelines to restrict off-site erosion and activities within Streamside Management Zones. Cattle grazing has occurred across the Forest and within the two allotments for over 100 years. It is expected that cattle grazing will locally result in areas of exposed streambanks and erosion. However, it is not expected that continued cattle grazing as proposed, in addition to other activities in the allotment, would contribute to cumulative effects to TEPS species.

Alternative 3 – Reduced Use

***Direct Effects*:** As observed in Table 12, there is overlap between the proposed period of cattle grazing within potential habitat for CRLF, RABO, WPT, and hardhead. Under Alternative 3, there would be no summer grazing (7/1 – 9/15) within the Castle Peak allotment. There would also be 95 fewer cow/calf within the Redinger Pasture (Castle Peak allotment), although grazing in the Long Ridge allotment would be authorized an additional 14 days. Direct effects could occur from cattle trampling of individuals or eggs. This would be more likely to occur within Primary Use Areas where cattle may congregate, but could also occur in secondary or suitable grazing areas as cattle move between Primary Use Areas. Similar to Alternative 2, no direct effects to hardhead minnow would be expected due to very limited overlap (2 ac) between occupied habitat and Primary Use/Suitable Grazing Areas.

There are approximately 90 acres of overlap between potential habitat for WPT (Map 6) and Primary Grazing Use areas along two intermittent tributaries (Saginaw Creek and an unnamed tributary to Kerckhoff Reservoir) and a segment of the San Joaquin River. Of this total, 13 acres occur within Primary Use Areas in the Redinger Pasture that would represent Primary Use areas subject to 50% fewer cattle than Alternative 2. There are an additional 140 acres of suitable grazing overlap, representing transitory movement between Primary Use Areas. Under Alternative 3 approximately 56 of these acres would be grazed by 50% fewer cattle than Alternative 2.

Direct effects on RABO would not be anticipated, although there is overlap of approximately 40 acres of potential habitat and Primary Use Grazing Areas (Map 5), and an additional 60 acres overlap with suitable grazing. Of the 40 acres of overlap of Primary Use and potential habitat, 6 acres would be subject to 50% fewer cattle under Alternative 3.

Direct effects from cattle on CRLF are not expected since it is highly unlikely that this species occurs within the allotments based on limited breeding habitat available (Fish Creek, Willow Creek, and Corrine Lake), long distances between potential breeding sites, historic annual scouring flows on the San Joaquin River, lack of historic or current detections. However, this an overlap (40 ac) of Primary Use Areas adjacent to sites with potential breeding habitat, with another 20 acres within suitable grazing.

***Indirect Effects*:** Potential effects attributed to movement and browsing by cattle within riparian zones was noted in the Environmental Consequences section. Potential indirect effects would be similar to those identified under Alternative 2. Potential indirect effects could result from cattle congregation in Primary Use Areas, or trailing

through Secondary Suitable Use Areas. While overlap of species habitat and Primary Grazing Use Areas appears limited, there is secondary movement of cattle that could affect ephemeral (seasonal) drainages. Ephemeral systems could contribute sediment during periods of flow (during and after precipitation events). Indirect effects to habitat occupied by hardhead would be similar to Alternative 2.

Of the species being evaluated, WPT is known to occur along two streams within the allotments, the two sites also represent potential habitat for RABO. WPT occurs along Saginaw Creek, which also overlaps with an area of Primary Use by cattle. The stream channel in the segment of overlap is higher gradient, with a boulder/bedrock substrate that is less likely to be disturbed by cattle. The Project Hydrology Report (Stone 2009) notes that "*Field observations in this allotment suggest that recent livestock use has not resulted in impacts to stream channels or riparian areas*." Indirect effects on the stream channels within the allotments are not anticipated, however it is likely there would continue to be localized sites of instability resulting from cattle movement. Instances of localized instability could be reduced under Alternative 3 due to reductions in permitted cow/calf numbers (95 fewer) and elimination of summer grazing within the Castle Peak allotment (40 fewer cow/calf 7/1 – 9/15).

The Project Hydrology Report (Stone 2009) notes that "*There are no streams in these allotments that appear to have excessive nutrient inputs, which would be identified by observation of heavy accumulations of manure in streams or algal blooms in unexpected areas. This project will minimize pathogen introduction to surface waters by minimizing the time that animals spend in riparian areas and ensuring that riparian areas have adequate remaining vegetation to provide an effective filter*".

Cumulative Effects: Past, present, and reasonably foreseeable actions within the project area are detailed in Appendix C and would be similar to those presented under Alternative 2. Lower-bound TOCs would not be exceeded under Alternative 3.

Forest Service actions have Best Management Practices (detailed in Project Hydrology Report), along with Forest standards and guidelines to restrict off-site erosion and activities within Streamside Management Zones. Cattle grazing has occurred across the Forest and within the two allotments for over 100 years. It is expected that cattle grazing will locally result in areas of exposed streambanks and erosion. However, it is not expected that continued cattle grazing as proposed, in addition to other activities in the allotment, would contribute to cumulative effects to TEPS species.

VI. DETERMINATIONS

Species	No Action Determination	Alternatives 2 and 3 Determination	Rationale for the Determinations for Proposed Action
California red-legged frog	***No effect***	***May affect, not likely to adversely effect***	• Closest known populations are more than 70 miles from either range allotment. • Species has not historically been found on the Sierra NF and potential breeding habitat is limited. • Migration barriers, scouring flows, bullfrogs, and introduced fish all affect suitability of habitat. • Limited overlap (40 ac) of Primary Use Areas with potential breeding sites within the allotments.
Foothill yellow-legged frog	***No effect***	***May affect individuals, but is not likely to lead to federal listing or loss of viability.***	• One known population on Sierra National Forest, while in an adjacent drainage it is not within either cattle grazing allotment. • Approximate overlap of 6% potential habitat with Primary Use Grazing Areas.
Western pond turtle	***No effect***	***May affect individuals, but is not likely to lead to federal listing or loss of viability.***	• WPT occur along two creeks within the allotments. • Approximate overlap of 6% potential habitat with Primary Use Grazing.
Hardhead minnow	***No effect***	***May affect individuals, but is not likely to lead to federal listing or loss of viability.***	• Occupied habitat is primarily reservoirs and perennial streams that have boulder/bedrock substrate, limiting possibility of direct effects. • Limited overlap (2 acres) of combined primary and suitable grazing along lower Willow Creek, segments of the San Joaquin River, and an unnamed tributary to Kerckhoff Reservoir. Represents less than 1% of habitat in analysis area.

VII. RECOMMENDATIONS FOR LONG RIDGE AND CASTLE PEAK ALLOTMENT ANNUAL OPERATING INSTRUCTIONS (AOI)

- All new range facilities (e.g. fences, spring developments, troughs) proposed during the life of the permit will need review by the appropriate SNF specialists.
- Exclude springs from livestock use with a wire fence at Teddy's Spring and site identified along the Horseshoe Bend Trail

- Properly functioning condition (PFC) assessments will be conducted by SNF specialists at least twice during the life of the permit. Findings may require permit administration actions (BMP 8-3; SNFPA S&G 117).
- Trample/chisel bank stability surveys will be conducted by SNF specialists along Fish Creek at least twice during the life of the permit. If findings show more than 20 percent of a stream reach is disturbed, permit administration actions may be required (BMP 8-3; SNFPA S&G 103).

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APPENDIX A - CHECKLIST FOR AQUATIC SPECIES ON SIERRA NATIONAL FOREST Based On: the U.S.D.I. Fish & Wildlife Service's Species List Updated As Of June 20, 2008 (http://sacramento.fws.gov/es/spp_list.htm) USFWS SPECIES Species List for Long Ridge; Castle Peak; and Chiquito Range Allotments, and Fish Camp Fuels Reduction Project PROVIDED JUNE 20, 2008 (DOCUMENT #:080620020817)
THE U.S.D.A. FOREST SERVICE PACIFIC SOUTHWEST REGION'S SENSITIVE SPECIES LIST OF JUNE 8, 1998 AS AMENDED ON MARCH 6, 2001 AND MAY 7, 2003; AND THE SIERRA NATIONAL FOREST LAND MANAGEMENT PLAN'S MANAGEMENT INDICATOR SPECIES LIST OF 1991.

Species Name	Elev Range (feet)	Habitat	Species Analysis Boundary on SNF	Is suitable habitat within or adjacent to the project?	Is there potential for the species or its habitat to be directly, indirectly, or cumulatively affected by the project?	Rationale
Amphibians						
CALIFORNIA RED-LEGGED FROG *Rana aurora draytonii* Federally listed Threatened AAABH01022	≤ 5,000	Riparian areas, breeding habitat is deep pools (≥ 0.7 m), stock ponds, streams ≤ 4% gradient, look within 1 mi of project (site assessment; CWHR&USDI)	1 mile around project area [USDI]	Yes	Yes	Habitat present. Species unlikely to be present.
CALIFORNIA TIGER SALAMANDER *Ambystoma californiense* Federally listed Proposed Threatened AAAAA01147	≤ 3,200	Annual grass habitat and grassy understory of valley-foothill hardwoods. Spend most of the year in underground in burrows of ground squirrels and man-made structures, during breeding can us rocks and logs. Breed in vernal pools, some human-made ponds w/o fish, not in streams. [CWHR]	Not in Sierra National Forest	No	No	Species occurs outside the forest boundaries.
RELICTUAL SLENDER SALAMANDER *Batrachoseps relictus* Forest Service R5 Sensitive AAAAD02X20 (general)	1,500 – 7,600	Western slope of the Sierra Nevada, California, from the lower Kern River canyon in Kern Country to highlands drained by the Tule River and Kern River in central Tulare County, and from one site on the western margin fo the Kern Platueau (Jockusch et al. 1998). Found under surface objects including rocks, bark and woody debris and is associated with streams, springs and wet areas. Only move within 5 feet of cover. Surface activity limited to wet winter months. [CWHR]	Not in Sierra National Forest.	Yes	No, taxonomic changes for this species indicate it does not occur in the project area	
LIMESTONE SALAMANDER *Hydromantes brunus* Forest Service R5 Sensitive AAAD09010	830 – 2,630	Restricted to Briceburg, Mariposa Co. CA, Merced River and Tribs, limestone outcrops, mixed chaparral, Calif. Buckeye indicate habitat. [CWHR]	0.06 miles around project area [CWHR] in Merced River Watershed	No	No	
YOSEMITE TOAD *Bufo canorus* Federally listed Candidate Forest Service R5 Sensitive AAABB01040	6,400 – 11,300	Alpine to Fresno Co. Breed in edges of meadows or slow, flowing runoff streams with short emergent sedges or rushes. Found in montane meadows and forest cover (lodgepole or whitebark pines) around the meadows. [CWHR]	0.6 miles around project area [CWHR]	No	No	Below elevational range of species.

Species Name	Elev Range (feet)	Habitat	Species Analysis Boundary on SNF	Is suitable habitat within or adjacent to the project?	Is there potential for the species or its habitat to be directly, indirectly, or cumulatively affected by the project?	Rationale
FOOTHILL YELLOW-LEGGED FROG *Rana boylii* Forest Service R5 Sensitive AAABH01050	≤ 6400	Sierran foothills. Breed in shallow, slow flowing water with at least some pebble and cobble substrate. Found in riffles and pools with some shading (>20%), and moderately vegetated backwaters, isolated pools. [CWHR]	0.03 miles around project area [CWHR];	Yes	Yes	May affect.
MOUNTAIN YELLOW-LEGGED FROG *Rana muscosa* Federally listed Candidate Forest Service R5 Sensitive AAABH01140	4,500 – 12,000	Plumas to Tulare Co. Found in ponds, tarns, lakes and streams with sufficient depth and adequate refuge for overwintering. [CWHR]	0.03 miles around project area [CWHR];	No	No	Below elevation range of species.
Reptiles						
SOUTHWESTERN POND TURTLE *Clemmys marmorata pallida* **NORTHWESTERN POND TURTLE** *Clemmys marmorata marmorata* Forest Service R5 Sensitive ARAAD02030/31/32	≤ 4,700	Aquatic habitat in spring and summer. Adjacent upland habitat fall and winter. In rivers, needs slow flowing areas with deep underwater refugia and emergent basking sites. Migration, hibernation, and nesting occur on land up to 330 feet from riparian area. [CWHR]	0.06 miles around project area [CWHR]	Yes	Yes	May affect.
GIANT GARTER SNAKE *Thamnophis gigas* Federally listed Threatened ARADB36150	≤ 1,000 valley floor	Only occurs on Central Valley floor. Nocturnal. Highly aquatic, associated with permanent/semi-permanent bodies of water. Probably extirpated from Northern Fresno county south. [CWHR]	Not in Sierra National Forest	No	No	Species occurs outside the forest boundaries.
Fishes						
OWENS TUI CHUB *Gila bicolor snyderi* Federally listed Endangered AFCJB1303J		Restricted to Owens River on the Inyo NF. [Moyle]	Not in Sierra National Forest	No	No	Species occurs outside the forest boundaries.
DELTA SMELT *Hypomesus transpacificus* Federally listed Threatened AFCHB01040		Restricted to the lower most reaches of the San Joaquin River near the Delta. [Moyle]	Not in Sierra National Forest	No	No	Species occurs outside the forest boundaries.

Species Name	Elev Range (feet)	Habitat	Species Analysis Boundary on SNF	Is suitable habitat within or adjacent to the project?	Is there potential for the species or its habitat to be directly, indirectly, or cumulatively affected by the project?	Rationale
HARDHEAD *Mylopharodon conocephalus* Forest Service R5 Sensitive AFCJB25010	≤ 4,760	Low to mid elev streams in SJ drainage, temps. 20-28'C [Moyle];	SJR 6th field HUC, SJR CAR,	Yes	Yes	
LAHONTAN CUTTHROAT TROUT *Oncorhynchus clarki henshawi* Federally listed Threatened Management Indictor Species AFCHA02081	5,000 – 7,000	Restricted to West Fork Cow Creek on HSRD and West Fork Portuguese Creek on BLRD, Sierra NF. [Sierra]	Cow Creek/ Portuguese Creek Watersheds/CARs	No	No	Project area not located within the associated watersheds.
PAIUTE CUTTHROAT TROUT *Oncorhynchus clarki seleniris* Federally listed Threatened Management Indicator Species AFCHA02089	5,000 – 7,000	Restricted to Stairway Creek on BLRD and Sharktooth Creek on HSRD, Sierra NF. [Sierra]	Stairway Creek/ Sharktooth Creek Watersheds/CARs	No	No	Project area not located within the associated watersheds.
BENTHIC MACROINVERTEBRATES Management Indicator Species	Any	Can occur in any stream, lake, reservoir, pond, etc. at any elevation.	Project subH20s & dwnstrm subH20s if appropriate	Yes	Yes	
PACIFIC TREE FROG *Hyla regilla* Management Indicator Species	Any	Wet Meadows.	Forest stream, meadows, lakes, ponds	No	No.	No wet meadow habitat in project area.
CENTRAL VALLEY STEELHEAD *Oncorhynchus mykiss* Federally listed Threatened AFCHA0209G/H	< 6,000	Likely extirpated from the San Joaquin drainage. [Moyle]. Prevented from entering Sierra NF by large dams below forest boundary on Merced, San Joaquin &Kings Rivers.	Not in Sierra National Forest	No	No	Species occurs outside of forest boundaries.
Invertebrates						
CONSERVANCY FAIRY SHRIMP AND VERNAL POOL FAIRY SHRIMP CRITICAL HABITAT *Branchinecta conservation* Federally listed Endangered	Valley floor	Ephemeral wetlands, large cool-water vernal pools. Nearest location to Sierra NF is in 5 miles to the west of Auberry – Forest boundary.	Not in Sierra National Forest	No	No	Species occurs outside of forest boundaries.

References for Appendix A

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USDI Fish and Wildlife Service. 2005. Guidance on Site Assessments and Field Surveys for California Red-legged frog. Portland, Oregon.

Acronyms

- BLRD = Bass Lake Ranger District, Sierra National Forest
- CA = California
- Calif = California
- CAR = Critical Aquatic Refuge
- CO = County
- CWHR = California Department of Fish and Game's California Wildlife Habitat Relationships program
- Elev = Elevation
- HSRD = High Sierra Ranger District, Sierra National Forest
- HUC = Hydrologic Unit Code (watershed delineations)
- Mi = Mile
- NF = National Forest
- SJ = San Joaquin
- SJR = San Joaquin River
- Tribs = Tributaries
- USDI = US Department of Interior, Fish and Wildlife Service

Appendix B

	Actions	Direct	Indirect	Consequence
Cattle Grazing	Trailing	Compaction	Overland Flow	Downcutting
			Change in Peak Flows	Erosion
				Overwidening of channel
				Filling of pools
				Covering of Spawning gravels
				Change in macroinvertebrate community
			Lowering of water table	Habitat alteration
	Use of riparian areas	Reduction in ground cover	Bank sloughing	Erosion
				Habitat alteration
				Crushing of redds
		Reduction in Stream shading	Water temperature	Decline in coldwater habitat
				Decline in dissolved oxygen
			Change in litter input	Change in macroinvertebrates
		Hoof shear	Collapsing of banks	Loss of undercut banks
		Water quality	nutrient enrichment	change in macroinvertebrate
				algae accumulation
				Change in pH

Appendix C

Cumulative Impacts for Bass Lake Range NEPA- Long Ridge and Castle Peak Allotments

Past, Present and Reasonably Foreseeable Actions

According the Council on Environmental Quality (CEQ) NEPA regulations, "cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions (40 CFR 1508.7). Effects are spatial and temporal. EXAMPLE: *historic timber harvest in Haskell Allotment affected meadow condition by adversely altering hydrologic function.* In determining cumulative effects, the effects of the following past and present and future actions were added to the direct and indirect effects of the proposed action and alternatives:

Table 3.1: Past, Present and Reasonably Foreseeable Actions

Past and Present Actions	IDT: Analyze the lingering effect of past actions and effect of current actions to your resource
Project or Activity Name	**Affected Area**
Vegetation Management/Actions	
Blackman/Bar/Point Precommercial Thinning Castle Peak/ Chiquito	Castle Peak/ Chiquito Allotments
Lion's Point Proposed Plantation Release/Fuel Break Maintenance Mastication Project	Castle Peak Allotment
Fuelbreak Maintenance	Bass Lake Ranger District, Madera and Mariposa Counties: Fuelbreak Maintenance Project-Goat/Thornberry/Ponderosa/North Fork Fuelbreaks; Pinegrove/Ponderosa Prescribed Burn
Historic Timber harvest (incl. road building related to timber harvest)	Bass Lake Ranger District, Madera and Mariposa Counties - Across the analysis area
Fire wood cutting/gathering	Bass Lake Ranger District, Madera and Mariposa Counties - Across the analysis area
Kinsman I and Kinsman II Prescribed Fire	Bass Lake Ranger District, COUNTY - Madera. LEGAL - 8S, R24E, Sec. 19,20,21,24,25. Between Forest Road 4S81,Source Point , Saginaw Creek above Kinsman Flat on the Sierra Nat
Fire suppression	Bass Lake Ranger District - throughout
Commercial Livestock Grazing	Bass Lake Ranger District - throughout
Hazard Tree Removal	Bass Lake Ranger District, Ongoing, Castle Peak and Long Ridge.
Road side hazard tree removal	Hazard Tree Removal Decision Memo, Mariposa R. D., Rock Hazard 7/99 - 9/99 completed, Beasore
Recreation Management/Actions	

Trail maintenance	Bass Lake Ranger District, Madera and Mariposa Counties
Motorized vehicle use (OHVs)	Across the analysis area
Reissue of Various Special Use Permits DM	Bass Lake Ranger District, COUNTY - Madera, Mariposa. Various locations on Bass Lake District.
Installation of buried telephone line from Box Canyon to Corrine Lake Road:	Long Ridge Allotment
Installation of buried telephone line from Corrine Lake Road to Dandy Indian Allotment	Long Ridge Allotment
Fiber Optic Installation Road 222	Long Ridge Allotment
SCE: Sam Daniels site	Long Ridge Allotment
Recreational activities: fishing, camping, backpacking, Mt. biking, trapping	Bass Lake Ranger District - throughout
California Department of Fish and Game (CDFG) Fish Stocking	Bass Lake Ranger District, Madera and Mariposa Counties
Infrastructure Management/Actions	
Flume breach of PG&E's No. 1 Ditch on April 28, 2009 caused significant erosion and mobilization of sediment from the point of failure to Kerckhoff Reservoir via this unnamed tributary.	Long Ridge Allotment

Future Foreseeable Actions	**IDT: Analyze the potential effect of future actions to your resource (Timetable: 20 years into the future)**
Project or Activity Name	**Affected Area**
Vegetation Management/Actions	
Commercial Livestock Grazing	Bass Lake Ranger District - throughout
Recreation Management/Actions	
Access Travel Management	Designate OHV routes on the SNF. Affects all Allotments; Entire Forest outside Wilderness
Road 222 Realignment and bridge replacement	Replace bridge near Kerckhoff Reservoir and re-route portion of Road 222, Road 222 near Smalley Cove. Long Ridge Allotment

Appendix D:

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

June 20, 2008

Document Number: 080620020817

Phil Strand
Sierra National Forest
1600 Tollhouse Road
Clovis, CA 93611

Subject: Species List for Long Ridge; Castle Peak; and Chiquito Range Allotments, and Fish Camp Fuels Reduction Project

Dear: Mr. Strand

We are sending this official species list in response to your June 20, 2008 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be September 18, 2008.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at www.fws.gov/sacramento/es/branches.htm.

Endangered Species Division

TAKE PRIDE IN AMERICA

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested
Document Number: 080620020817
Database Last Updated: January 31, 2008

Quad Lists

Listed Species

Invertebrates

- Branchinecta conservatio
  - Conservancy fairy shrimp (E)
- Branchinecta lynchi
  - Critical habitat, vernal pool fairy shrimp (X)
  - vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus
  - valley elderberry longhorn beetle (T)
- Lepidurus packardi
  - Critical habitat, vernal pool tadpole shrimp (X)
  - vernal pool tadpole shrimp (E)

Fish

- Hypomesus transpacificus
  - delta smelt (T)
- Oncorhynchus (=Salmo) clarki henshawi
  - Lahontan cutthroat trout (T)
- Oncorhynchus mykiss
  - Central Valley steelhead (T) (NMFS)

Amphibians

- Ambystoma californiense
  - California tiger salamander, central population (T)
- Rana aurora draytonii
  - California red-legged frog (T)

Reptiles

- Gambelia (=Crotaphytus) sila
  - blunt-nosed leopard lizard (E)

Mammals

- Dipodomys nitratoides exilis
  - Fresno kangaroo rat (E)

Plants

- Castilleja campestris ssp. succulenta
  - Critical habitat, succulent (=fleshy) owl's-clover (X)
  - succulent (=fleshy) owl's-clover (T)
- Orcuttia inaequalis

- Critical habitat, San Joaquin Valley Orcutt grass (X)
- San Joaquin Valley Orcutt grass (T)

Candidate Species

Amphibians

- Bufo canorus
  - Yosemite toad (C)
- Rana muscosa
  - mountain yellow-legged frog (C)

Mammals

- Martes pennanti
  - fisher (C)

Quads Containing Listed, Proposed or Candidate Species:

MUSICK MTN. (397A)

CASCADEL POINT (397B)

NORTH FORK (398A)

MILLERTON LAKE EAST (398D)

SQUAW DOME (417A)

LITTLE SHUTEYE PEAK (417B)

MAMMOTH POOL DAM (417D)

WHITE CHIEF MTN. (418A)

FISH CAMP (418B)

County Lists

No county species lists requested.

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

Important Information About Your Species List
How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.

- During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.
- Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our critical habitat page for maps.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site

specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

Updates

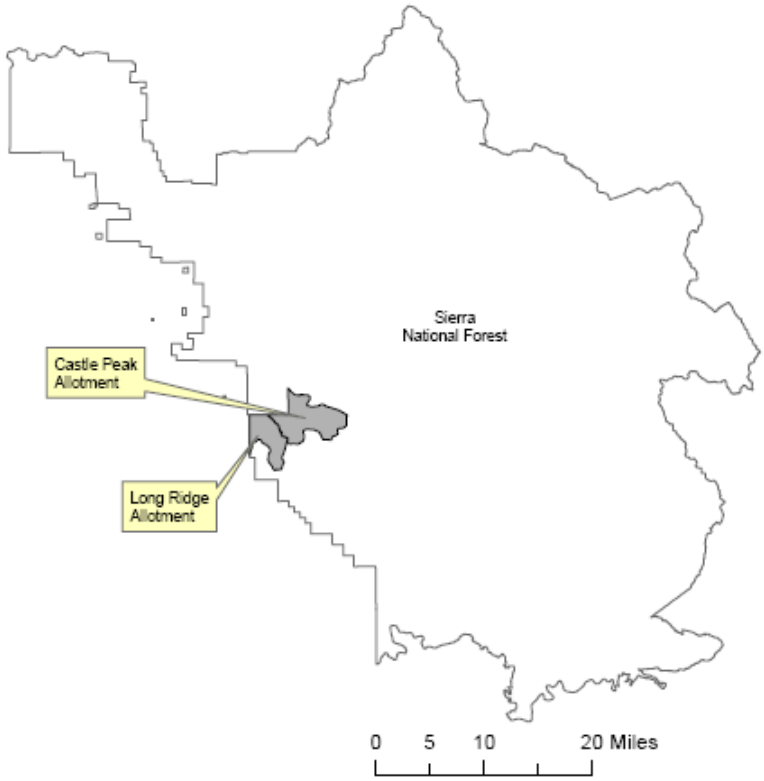
Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be September 18, 200

Aquatic Wildlife
Management Indicator Species Report

Long Ridge and Castle Peak Grazing Allotments

Bass Lake Ranger District

Sierra National Forest



Prepared By: _____ **Date:** 7/2/09

Philip C. Strand
Aquatic Biologist
Sierra National Forest

1. *Introduction*

The purpose of this report is to evaluate and disclose the impacts of the Long Ridge and Castle Peak grazing allotments on the habitat of aquatic Management Indicator Species (MIS) identified in the Sierra Forest (SNF) Land and Resource Management Plan (LRMP) (USDA – Forest Service 1992) as amended by the Sierra Nevada Forests Management Indicator Species Amendment (SNF MIS Amendment) Record of Decision (USDA - Forest Service 2007a). This report documents the effects of the proposed action and alternatives on the habitat of selected project-level MIS.

MIS are animal species identified in the SNF MIS Amendment Record of Decision (ROD) signed December 14, 2007, which was developed under the 1982 National Forest System Land and Resource Management Planning Rule (1982 Planning Rule) (36 CFR 219). The current rule applicable to project decisions is the 2004 Interpretive Rule, which states "Projects implementing land management plans…must be developed considering the best available science in accordance with §219.36(a)…and must be consistent with the provisions of the governing plan." (Appendix B to §219.35). Guidance regarding MIS set forth in the Sierra NF LRMP as amended by the 2007 SNF MIS Amendment ROD directs Forest Service resource managers to (1) at project scale, analyze the effects of proposed projects on the habitat of each MIS affected by such projects, and (2) at the bioregional scale, monitor populations and/or habitat trends of MIS, as identified in the Sierra NF LRMP as amended.

1.a. Direction Regarding the Analysis of Project-Level Effects on MIS Habitat

Project-level effects on MIS habitat are analyzed and disclosed as part of environmental analysis under the National Environmental Policy Act (NEPA). This involves examining the impacts of the proposed project alternatives on MIS habitat by discussing how direct, indirect, and cumulative effects will change the habitat in the analysis area.

These project-level impacts to habitat are then related to broader scale (bioregional) population and/or habitat trends. The appropriate approach for relating project-level impacts to broader scale trends depends on the type of monitoring identified for MIS in the LRMP as amended by the SNF MIS Amendment ROD. Hence, where the Sierra NF LRMP as amended by the SNF MIS Amendment ROD identifies distribution population monitoring for an MIS, the project-level habitat effects analysis for that MIS is informed by available distribution population monitoring data, which are gathered at the bioregional scale. The bioregional scale monitoring identified in the Sierra NF LRMP, as amended, for MIS analyzed for the Long Ridge and Castle Peak grazing allotments is summarized in Section 3 of this report.

Adequately analyzing project effects to MIS generally involves the following steps:

- Identifying which habitat and associated MIS would be either directly or indirectly affected by the project alternatives; these MIS are potentially affected by the project.
- Summarizing the bioregional-level monitoring identified in the LRMP, as amended, for this subset of MIS.
- Analyzing project-level effects on MIS habitat for this subset of MIS.
- Discussing bioregional scale habitat and/or population trends for this subset of MIS.
- Relating project-level impacts on MIS habitat to habitat and/or population trends at the bioregional scale for this subset of MIS.

These steps are described in detail in the Pacific Southwest Region's draft document "MIS Analysis and Documentation in Project-Level NEPA, R5 Environmental Coordination" (May 25, 2006). This Management Indicator Species (MIS) Report documents application of the above steps to select project-level MIS and analyze project effects on MIS habitat for the Long Ridge and Castle Peak grazing allotments.

1.b. Direction Regarding Monitoring of MIS Population and Habitat Trends at the Bioregional Scale.

The bioregional scale monitoring strategy for the Sierra NF's MIS is found in the Sierra Nevada Forests Management Indicator Species Amendment (SNF MIS Amendment) Record of Decision (ROD) of 2007. Bioregional scale habitat monitoring is identified for all twelve of the terrestrial MIS. In addition, bioregional scale population monitoring, in the form of distribution population monitoring, is identified for all of the terrestrial MIS except for the greater sage-grouse. For aquatic macroinvertebrates, the bioregional scale monitoring identified is Index of Biological Integrity and Habitat. The current bioregional status and trend of populations and/or habitat for each of the MIS is discussed in the Sierra Nevada Forests Bioregional Management Indicator Species (SNF Bioregional MIS) Report (USDA - Forest Service 2008).

- **MIS Habitat Status and Trend.**

All habitat monitoring data are collected and/or compiled at the bioregional scale, consistent with the LRMP as amended by the 2007 SNF MIS Amendment ROD (USDA - Forest Service 2007a).

Habitats are the vegetation types (for example, early seral coniferous forest) or ecosystem components (for example, snags in green forest) required by an MIS for breeding, cover, and/or feeding. MIS for the Sierra Nevada National Forests represent 10 major habitats and 2 ecosystem components (USDA - Forest Service 2007a), as listed in Table 1. These habitats are defined using the California Wildlife Habitat Relationship (CWHR) System (CDFG 2005). The CWHR System provides the most widely used habitat relationship models for California's terrestrial vertebrate species (ibid). Table 1 explains the acronyms used for available habitat stages in the CWHR system. It is also described in detail in the SNF Bioregional MIS Report (USDA - Forest Service 2008).

Habitat status is the current amount of habitat on the Sierra Nevada Forests. Habitat trend is the direction of change in the amount or quality of habitat over time. The methodology for assessing habitat status and trend is described in detail in the SNF Bioregional MIS Report (USDA - Forest Service 2008).

- **MIS Population Status and Trend.**

All population monitoring data are collected and/or compiled at the bioregional scale, consistent with the LRMP as amended by the 2007 SNF MIS Amendment ROD (USDA - Forest Service 2007a). The information is presented in detail in the 2008 SNF Bioregional MIS Report (USDA - Forest Service 2008).

Population monitoring strategies for MIS of the Sierra NF are identified in the 2007 Sierra Nevada Forests Management Indicator Species (SNF MIS) Amendment ROD (USDA - Forest Service 2007a). Population status is the current condition of the MIS related to the population monitoring data required in the 2007 SNF MIS Amendment ROD for that MIS. Population trend is the direction of change in that population measure over time.

There are a myriad of approaches for monitoring populations of MIS, from simply detecting presence to detailed tracking of population structure (USDA - Forest Service 2001, Appendix E, page E-19). A distribution population monitoring approach is identified for all of the terrestrial MIS in the 2007 SNF MIS Amendment, except for the greater sage-grouse (USDA - Forest Service 2007a). Distribution population monitoring consists of collecting presence data for the MIS across a number of sample locations over time. Presence data are collected using a number of direct and indirect methods, such as surveys (population surveys), bird point counts, tracking number of hunter kills, counts of species sign (such as deer pellets), and so forth. The specifics regarding how these presence data are assessed to track changes in distribution over time vary by species and the type of presence data collected, as described in the SNF Bioregional MIS Report (USDA - Forest Service 2008).

For aquatic macroinvertebrates, condition and trend is determined by analyzing macroinvertebrate data using the predictive, multivariate River Invertebrate Prediction And Classification System (RIVPACS) (Hawkins 2003) to determine whether the macroinvertebrate community has been impaired relative to reference condition within perennial water bodies. This monitoring consists of collecting aquatic macroinvertebrates and measuring stream habitat features according to the Stream Condition Inventory

(SCI) manual (Frazier et al. 2005). Evaluation of the condition of the biological community is based upon the "observed to expected" (O/E) ratio, which is a reflection of the number of species observed at a site versus the number expected to occur there in the absence of impairment. Sites with a low O/E scores have lost many species predicted to occur there, which is an indication that the site has a lower than expected richness of sensitive species and is therefore impaired.

2. Selection of Project level MIS

Management Indicator Species (MIS) for the Sierra NF are identified in the 2007 Sierra Nevada Forests Management Indicator Species (SNF MIS) Amendment (USDA - Forest Service 2007a). The habitats and ecosystem components and associated MIS analyzed for the project were selected from this list of MIS, as indicated in Table 1. In addition to identifying the habitat or ecosystem components (1st column), the CWHR type(s) defining each habitat/ecosystem component (2nd column), and the associated MIS (3rd column), the Table discloses whether or not the habitat of the MIS is potentially affected by the Long Ridge and Castle Peak grazing allotments (4th column).

Table 1. Selection of MIS for Project-Level Habitat Analysis for the Long Ridge and Castle Peak grazing allotments.

Habitat or Ecosystem Component	CWHR Type(s) defining the habitat or ecosystem component[1]	Sierra Nevada Forests Management Indicator Species *Scientific Name*	Category for Project Analysis [2]
Riverine & Lacustrine†	lacustrine (LAC) and riverine (RIV)	aquatic macroinvertebrates	3
Shrubland (west-slope chaparral types)	montane chaparral (MCP), mixed chaparral (MCH), chamise-redshank chaparral (CRC)	fox sparrow *Passerella iliaca*	N/A
Sagebrush	Sagebrush (SGB)	greater sage-grouse *Centrocercus urophasianus*	N/A
Oak-associated Hardwood & Hardwood/conifer	montane hardwood (MHW), montane hardwood-conifer (MHC)	mule deer *Odocoileus hemionus*	N/A
Riparian	montane riparian (MRI), valley foothill riparian (VRI)	yellow warbler *Dendroica petechia*	N/A
Wet Meadow†	Wet meadow (WTM), freshwater emergent wetland (FEW)	Pacific tree frog *Pseudacris regilla*	1
Early Seral Coniferous Forest	ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree sizes 1, 2, and 3, all canopy closures	Mountain quail *Oreortyx pictus*	N/A
Mid Seral Coniferous Forest	ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree size 4, all canopy closures	Mountain quail *Oreortyx pictus*	N/A
Late Seral Open Canopy Coniferous Forest	ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree size 5, canopy closures S and P	Sooty (blue) grouse *Dendragapus obscurus*	N/A
Late Seral Closed Canopy Coniferous Forest	ponderosa pine (PPN), Sierran	California spotted owl *Strix occidentalis*	N/A

	mixed conifer (SMC), white fir (WFR), red fir (RFR), tree size 5 (canopy closures M and D), and tree size 6.	*occidentalis*	
		American marten *Martes americana*	
		northern flying squirrel *Glaucomys sabrinus*	
Snags in Green Forest	Medium and large snags in green forest	hairy woodpecker *Picoides villosus*	N/A
Snags in Burned Forest	Medium and large snags in burned forest (stand-replacing fire)	black-backed woodpecker *Picoides arcticus*	N/A

[1] All CWHR size classes and canopy closures are included unless otherwise specified; **dbh** = diameter at breast height; **Canopy Closure classifications:** S=Sparse Cover (10-24% canopy closure); P= Open cover (25-39% canopy closure); M= Moderate cover (40-59% canopy closure); D= Dense cover (60-100% canopy closure); **Tree size classes:** 1 (Seedling)(<1" dbh); 2 (Sapling)(1"-5.9" dbh); 3 (Pole)(6"-10.9" dbh); 4 (Small tree)(11"-23.9" dbh); 5 (Medium/Large tree)(≥24" dbh); 6 (Multi-layered Tree) [In PPN and SMC] (Mayer and Laudenslayer 1988).

[2] **Category 1:** MIS whose habitat is not in or adjacent to the project area and would not be affected by the project.

Category 2: MIS whose habitat is in or adjacent to project area, but would not be either directly or indirectly affected by the project.

Category 3: MIS whose habitat would be either directly or indirectly affected by the project.

[†] Species in these categories will be analyzed separately under the aquatic species MIS report for the Long Ridge and Castle Peak grazing allotments

N/A See Terrestrial Wildlife Management Indicator Species Report (Otto 2009)

Category 1 MIS

Species that will not be discussed further in this document include Category 1 and Category 2 MIS. Pacific tree frog is a category 1 aquatic MIS species. There are no wet meadows (habitat component for Pacific tree frog) within the Long Ridge or Castle Peak grazing allotments.

Category 2 MIS

Category 2 defines MIS whose habitat is in or adjacent to the project area, but whose habitat would not be directly or indirectly affected by the project. There are no Category 2 Aquatic MIS for the Long Ridge and Castle Peak grazing allotments.

Category 3 MIS

The MIS whose habitat would be either directly or indirectly affected by the Long Ridge and Castle Peak Grazing allotments is identified as Category 3 in Table 1, are carried forward in this analysis, which will evaluate the direct, indirect, and cumulative effects of the proposed action and alternatives on the habitat of these MIS. The MIS selected for project-level MIS analysis for the two grazing allotments are aquatic macroinvertebrates (lacustrine and riverine ecosystem component). Species specific analysis begins in section 5 of this document.

3. Bioregional Monitoring Requirements for MIS Selected for Project-Level Analysis

3.a. MIS Monitoring Requirements.

The Sierra Nevada Forests Management Indicator Species (SNF MIS) Amendment (USDA - Forest Service 2007a) identifies bioregional scale habitat and/or population monitoring for the Management Indicator Species for ten National Forests, including the Sierra NF (USDA - Forest Service 2007a). The habitat and/or population monitoring requirements for Sierra NF's MIS are described in the Sierra Nevada Forests Bioregional Management Indicator Species (SNF Bioregional MIS) Report (USDA - Forest Service 2008) and are summarized below for the MIS being analyzed for the Long Ridge and Castle Peak grazing allotments. The applicable habitat and/or population monitoring results are described in the SNF Bioregional MIS Report (USDA - Forest Service 2008) and are summarized in Section 5 below for the MIS being analyzed for the Long Ridge and Castle Peak grazing allotments.

Habitat monitoring at the bioregional scale is identified for all the habitats and ecosystem components, including the following analyzed for the Long Ridge and Castle Peak grazing allotments: Lacustrine/Riverine.

Distribution population monitoring consists of collecting presence data for the MIS across a number of sample locations over time (also see USDA - Forest Service 2001, Appendix E).

3.b. How MIS Monitoring Requirements are Being Met.
Habitat and/or distribution population monitoring for all MIS is conducted at the Sierra Nevada scale. Refer to the SNF Bioregional MIS Report (USDA - Forest Service 2008) for details by habitat and MIS.

4. Description of Proposed Project.

Alternative 1 - No Action

The No Action alternative for grazing authorizations has been defined by the Forest Service Handbook (FSH) (FSH 2209.13, Section 92.31) as no grazing. Under this alternative, term grazing permits would be cancelled. Improvements described under the proposed action would not be necessary. Cancellation of term permits must follow direction in Forest Service Manual (FSM) 2231.62d, Forest Service Handbook (FSH) 2209.13, chapter 10 section 16.24, and Part 2 item 11b of the term permit. Structures related to grazing such as water troughs and fences, would be removed if and when feasible.

Alternative 2- The Proposed Action

The Bass Lake Ranger District of the Sierra National Forest is proposing to authorize continued livestock grazing on National Forest System (NFS) lands within Long Ridge and Castle Peak Range Allotments. Livestock grazing would be administered to meet *Sierra National Forest Land and Resource Management Plan* (Forest Plan) (USDA Forest Service 1992; amended 2004) direction for resource management using adaptive management strategies. The purpose of the proposed action is to meet Forest Plan goals to provide for healthy ecosystems and make forage available on a sustainable basis for use by livestock (Table 1).

Allotment	Unit	Suitable Acres*	Total Unit Acres**
Castle Peak	Redinger	956	4803
	Castle Peak	529	3957
Long Ridge	Long Ridge	1387	4239
	Horse Pasture	192	193
	Smalley Cove Pasture	154	154

* Reasons for non-suitability: areas where livestock have been fenced out to enhance other resource values, areas where livestock access is restricted by physical barriers (e.g. slope, low forage production) and/or property ownership.
** Total Unit Acres does not includes private land acreage

Table 1: Livestock forage(acres)

The Proposed Action (Table 2) is to authorize continued livestock grazing on National Forest System lands within Castle Peak and Long Ridge allotments. Proposed range improvement construction (Table 3) would be completed within 5 years of the decision. In most cases, the Forest Service would provide materials and the permittee would provide labor.

Table 2. Proposed grazing season (period of use) and livestock numbers for Castle Peak and Long Ridge allotments.

Allotment	Pasture	Livestock			Period of Use	
Long Ridge	Long Ridge Horse Pasture (gather pasture)	~100	cattle	cow/ calf	Early March at Livestock Turnout	Early June at Livestock Gather
Long Ridge	Smalley Cove Pasture (PG&E/Forest Service) (gather pasture)	50	cattle	cow/ calf	June 1	June 30
Long Ridge	All Units	125	cattle	cow/ calf	March 1	June 15
Long Ridge	All Units	40	cattle	cow/ calf	March 1	June 15
Castle Peak	Redinger	200	cattle	cow/ calf	March 1	June 30
Castle Peak	Castle Peak	100	cattle	cow/ calf	March 1	June 30
Castle Peak	All Units (including DeMasters Private Land)	40	cattle	cow/ calf	July 1	Sept 15

Table 3. Need for management change and proposed action description.

Allotment	Need for Change	Proposed Action Description
Castle Peak	Range readiness concerns with current permitted on-date	Change in season of use from January 1 through June 30 to March 1 through June 30.
	Change in season of use (extension of season)	Authorize 50 cow/calf pair to graze in Castle Peak allotment (in conjunction with privately leased land) July 1 through September 15. Based on a total reduction of 165 Head Months (HMs) from change in on-dates for Castle Peak.
	Range improvement not up to standard	Timberline Corral would be reconstructed to standard.
Long Ridge	Range readiness concerns with current permitted on-date	Change in season and use from January 1 through June 30 to March 1 through June 15
	Change in permitted numbers requested by permittee	Change in permitted numbers based on monitoring which indicates that the allotment has been managed well within standard and is meeting desired conditions. Also based on initial reduction of 100 HMs by changing season of use to delay on-dates. This reduction would be applied to an increase in permitted numbers from 140 to 165 total (equates to 85 HMs). Total reduction with this proposal is 15 HMs
	Additional holding field needed	Proposal would authorize holding field at junction of Southern California Edison Powerhouse #4 Road and County Road 235
	Long Ridge Corral and portion of Horse Pasture Holding Field fence located on Private Land	Long Ridge Corral and that portion of holding field fence that is on Private Land would be removed and reconstructed on adjacent Forest Service land
	Smalley Cove Pasture	Allow use in this field for gathering only. Up to 50 cow/calf pair are authorized during the month of June. Fence line would be re-aligned to include northern boundary of the National Forest Lands. This pasture incorporates Pacific Gas and Electric (PGE) lands under lease by current permittee.
	Trampling impacts at Teddy's Spring (west side of Long Ridge)	Spring head would be excluded from livestock use with a wire fence
	Trampling impacts at spring on western portion of Horseshoe Bend trail	Spring head would be excluded from livestock use with a wire fence

Narrative of Proposed Continued Grazing (Proposed Permitted Use)

Castle Peak Allotment: There is a need for change in livestock on-dates for the Castle Peak allotment. Since 1984, this allotment has had a staggered turn-out date (dates which livestock are authorized to enter the allotment) of 100 cow/calf pair each entering the allotment on the 1st of January, February and March. Under this proposal, the on-date for all permitted livestock to enter Castle Peak allotment would be delayed until March 1st. This proposal would authorize 300 cow/calf pair from March 1st through June 30th. The reduction in head months gained from this delayed date would be off-set by authorizing 40 cow/calf pair to graze July 1st through September 15th within the Castle Peak allotment and private land within the allotment that is leased by the current permittee. Improvements to the existing "Timberline Corral" at Saginaw Creek would also be made. This wooden corral and sorting pens would be rebuilt with pipe material at the existing location. Desired conditions are being met (Range Analysis as referenced in Project File).

Long Ridge Allotment: The livestock on-dates for the Long Ridge allotment have historically been scheduled for early January, which in most years is too early for conditions to support grazing in terms of range readiness. This proposal would delay the on-date for Long Ridge until March 1st. The reduction in head months gained from this delay would be off-set by authorizing an additional 25 cow/calf pair to graze in the allotment during the proposed season of use. The boundary fence for the Smalley Cove pasture would be replaced along County Road 222 and a fence would be constructed along the northern Forest Service boundary of the pasture. This field has had chronic trespass, due to poor fence infrastructure, primarily, by unauthorized livestock and overuse has occurred, particularly in the lower Fish Creek and Smalley Cove riparian areas. This trespass and uncontrolled use has made quantifying the current level of use difficult. Therefore, the proposed livestock use for Smalley Cove pasture is conservative and would authorize up to 50 cow/calf pair for the month of June. This authorized use would be monitored to determine if compliance is being met. If monitoring data shows that the field can support more use over an extended season then an adjustment may be made in season and numbers. A 0.5 acre wire livestock holding trap is proposed at the junction of Country Road 235 and the entrance to Southern California Edison Powerhouse #4. This field would be used to gather straggler livestock at the end of the permitted season. Desired conditions are being met, with the exception of the Smalley Cove pasture (Range Analysis as referenced in Project File), hence the need for change described above.

Alternative 3 - Reduction in cattle and Season of Use

Under Alternative 3 the Sierra National Forest would authorize continued livestock grazing on National Forest System (NFS) lands within the Long Ridge and Castle Peak Range Allotments over a total of 13,400 acres (private property not included in acreage). Cattle use under Alternative 3 would be as displayed in Table 5.

Table 5. Proposed grazing season (period of use) and livestock numbers for Castle Peak and Long Ridge allotments.

Allotment	Pasture	Livestock			Period of Use	
Long Ridge	Long Ridge Horse Pasture (gather pasture)	~100	cattle	cow/ calf	Early March at Livestock Turnout	Early June at Livestock Gather
Long Ridge	Smalley Cove Pasture (PG&E/Forest Service) (gather pasture)	50	cattle	cow/ calf	June 1	June 30
Long Ridge	All Units	125	cattle	cow/ calf	March 1	June 30
Long Ridge	All Units	40	cattle	cow/ calf	March 1	June 30
Castle Peak	Redinger	100	cattle	cow/ calf	March 1	June 30
Castle Peak	Castle Peak	105	cattle	cow/ calf	March 1	June 30

Castle Peak:
Under Alternative 3 there would be no summer season grazing authorized in the Castle Peak Allotment. Proposed numbers of cattle would be reduced from the Proposed Action by 95 cow/calf pair overall. This alternative would authorize 205 cow/calf pair from March 1 to June 30. The season of use and permitted numbers matches up with the summer range used in conjunction with this allotment (Haskell Allotment has 205 permitted cow/calf pair July 1 to September 30).

Long Ridge:
Under Alternative 3, the proposed numbers of cattle would be similar to the proposed action. The season of use would be extended by 2 weeks from the Proposed Action season, to allow livestock to use the allotment through June 30 with 165 cow/calf pair authorized. The season of use matches up with Central Camp Allotment permitted season (on date variable from June 1 –July 1), which is used in conjunction with the Long Ridge Allotment.

Past, Present, and Reasonably Foreseeable Actions
Table 6 provides a list of past, present, and reasonably foreseeable actions for consideration during cumulative effects analysis.

According the Council on Environmental Quality (CEQ) NEPA regulations, "cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions (40 CFR 1508.7). Effects are spatial and temporal. EXAMPLE: *historic timber harvest in Haskell Allotment affected meadow condition by adversely altering hydrologic function.* In determining cumulative effects, the effects of the following past and present and future actions were added to the direct and indirect effects of the proposed action and alternatives:

***Table 6**: Past, Present and Reasonably Foreseeable Actions*

Past and Present Actions	**IDT: Analyze the lingering effect of past actions and effect of current actions to your resource**
Project or Activity Name	**Affected Area**
Vegetation Management/Actions	
Blackman/Bar/Point Precommercial Thinning Castle Peak/ Chiquito	Castle Peak/ Chiquito Allotments
Lion's Point Proposed Plantation Release/Fuel Break Maintenance Mastication Project	Castle Peak Allotment
Fuelbreak Maintenance	Bass Lake Ranger District, Madera and Mariposa Counties: Fuelbreak Maintenance Project-Goat/Thornberry/Ponderosa/North Fork Fuelbreaks; Pinegrove/Ponderosa Prescribed Burn
Historic Timber harvest (incl. road building related to timber harvest)	Bass Lake Ranger District, Madera and Mariposa Counties - Across the analysis area
Fire wood cutting/gathering	Bass Lake Ranger District, Madera and Mariposa Counties - Across the analysis area
Kinsman I and Kinsman II Prescribed Fire	Bass Lake Ranger District, COUNTY - Madera. LEGAL - 8S, R24E, Sec. 19,20,21,24,25. Between Forest Road 4S81,Source Point , Saginaw Creek above Kinsman Flat on the Sierra Nat
Fire suppression	Bass Lake Ranger District - throughout

Commercial Livestock Grazing	Bass Lake Ranger District - throughout
Hazard Tree Removal	Bass Lake Ranger District, Ongoing, Castle Peak and Long Ridge.
Road side hazard tree removal	Hazard Tree Removal Decision Memo, Mariposa R. D., Rock Hazard 7/99 - 9/99 completed, Beasore
Recreation Management/Actions	
Trail maintenance	Bass Lake Ranger District, Madera and Mariposa Counties
Motorized vehicle use (OHVs)	Across the analysis area
Reissue of Various Special Use Permits DM	Bass Lake Ranger District, COUNTY - Madera, Mariposa. Various locations on Bass Lake District.
Installation of buried telephone line from Box Canyon to Corrine Lake Road:	Long Ridge Allotment
Installation of buried telephone line from Corrine Lake Road to Dandy Indian Allotment	Long Ridge Allotment
Fiber Optic Installation Road 222	Long Ridge Allotment
SCE: Sam Daniels site	Long Ridge Allotment
Recreational activities: fishing, camping, backpacking, Mt. biking, trapping	Bass Lake Ranger District - throughout
California Department of Fish and Game (CDFG) Fish Stocking	Bass Lake Ranger District, Madera and Mariposa Counties
Infrastructure Management/Actions	
A flume breach of PG&E's No. 1 Ditch on April 28, 2009 caused significant erosion and mobilization of sediment from the point of failure to Kerckhoff Reservoir via an unnamed tributary.	Long Ridge Allotment

Future Foreseeable Actions	**IDT: Analyze the potential effect of future actions to your resource (Timetable: 20 years into the future)**
Project or Activity Name	**Affected Area**
Vegetation Management/Actions	
Commercial Livestock Grazing	Bass Lake Ranger District - throughout
Recreation Management/Actions	
Access Travel Management	Designate OHV routes on the SNF. Affects all Allotments; Entire Forest outside Wilderness
Road 222 Realignment and bridge replacement	Replace bridge near Kerckhoff Reservoir and re-route portion of Road 222, Road 222 near Smalley Cove. Long Ridge Allotment

Applicable Sierra National Forest standards and guidelines, along with direction for the Sierra Nevada Forest Plan Amendment:
The Sierra Nevada Forest Plan Amendment (USDA-Forest Service 2001, amended 2004) provides an Aquatic Management Strategy (AMS). The fundamental principle of the AMS is to retain, restore, and protect the processes and landforms that provide habitat for aquatic and riparian-dependent organisms, and produce and deliver high-quality waters. The AMS includes designation of Riparian Conservation Areas (RCAs). RCAs are designated along streams and around water bodies and are areas for specific management direction and analysis (USDA-Forest Service 2004).

- *Perennial Streams*: 300 feet on each side of the stream, measured from the bank full edge of the stream
- *Seasonally Flowing Streams (includes intermittent and ephemerals streams)*: 150 feet on each side of stream, measured from the bank full edge of the stream
- *Streams in Inner Gorge*[1]: top of inner gorge
- *Special Aquatic Features*[2] *or Perennial Streams with Riparian Conditions extending more than 150 feet from edge of streambank or Seasonally Flowing streams with riparian conditions extending more than 50 feet from edge of streambank*: 300 feet from edge of feature or riparian vegetation, whichever width is greater
- *Other hydrological or topographic depressions without a defined channel*: RCA width and protection measures determined through project level analysis

Sierra National Forest's LRMP forest-wide standard and guidelines (S/G) that were not superseded by the 2001 or 2004 amendments (USDA-Forest Service 2001, 2004) applicable to cattle range allotments for aquatic species and habitats include:

- Generally, riparian management areas will extend 100 feet horizontally from the edge of perennial streams, lakes and reservoirs, except along those streams designated as essential habitat in the Interagency Agreement for *Collomia rawsoniana*, where the zone will be 150 feet. (S/G #33)

- Give primary management emphasis in riparian areas to protect and enhance the riparian ecosystem, riparian vegetation, water quality, soils, fish and wildlife resources. (S/G #69)

- In the absence of on-site riparian area protective width determinations, riparian areas will extend 100 feet horizontally from the edge of perennial streams, lakes and reservoirs. Deviations resulting from on-site evaluations will be documented in project environmental assessments. (S/G #71)

- Manage vegetation in designated riparian areas so existing Forestwide diversity is maintained in all periods. (S/G #74)

- Maintain or enhance productivity of Forest meadows to accommodate wildlife and range resources. (S/G #75)

- In stream reaches occupied by fish, any activity that results in trampling and chiseling of stream banks should not exceed 20% of any given stream reach. Controls such as re-routing trails, relocating dispersed campsites, and/or fencing of areas will be used to manage activities and improve riparian conditions in identified areas not meeting this standard. (S/G #76)

- Allow picketing or tethering of stock in meadows and overnight tie-ups no closer than 100 feet of lakes and streams. (S/G #80)

[1]Inner gorge is defined by stream adjacent slopes greater than 70 percent gradient
[2]Special Aquatic Features include: lakes, wet meadows, bogs, fens, wetlands, vernal pools, and springs

- Salt grounds will be located more than ¼ mile from streams, meadows and trails. (S/G #88)

- Manage domestic livestock to meet wildlife needs in identified important wildlife habitat areas. (S/G #89)

Forest-wide management standards and guidelines (S/G) for riparian conservation areas (RCA) and critical aquatic refuges (CAR) that are listed in the 2004 Record of Decision (pages 62 – 66; USDA-Forest Service 2004) applicable to cattle range allotments for aquatic species and habitats include:

- Designate riparian conservation area (RCA) widths as described in Part B of this appendix (shown above). The RCA widths displayed in Part B (shown above) may be adjusted at the project level if a landscape analysis has been completed and a site-specific RCO analysis demonstrates a need for different widths. (S/G #91)

- Evaluate new proposed management activities within CARs and RCAs during environmental analysis to determine consistency with the riparian conservation objectives at the project level and the AMS goals for the landscape. Ensure that appropriate mitigation measures are enacted to (1) minimize the risk of activity-related sediment entering aquatic systems and (2) minimize impacts to habitat for aquatic- or riparian-dependent plant and animal species. (S/G #92)

- As part of project-level analysis, conduct peer reviews for projects that propose ground-disturbing activities in more than 25 percent of the RCA or more than 15 percent of a CAR. (S/G #94)

- Ensure that management activities do not adversely affect water temperatures necessary for local aquatic- and riparian-dependent species assemblages. (S/G #96)

- Maintain and restore the hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features by identifying roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths. Implement corrective actions where necessary to restore connectivity. (S/G #100)

- Prior to activities that could adversely affect streams, determine if relevant stream characteristics are within the range of natural variability. If characteristics are outside the range of natural variability, implement mitigation measures and short-term restoration actions needed to prevent further declines or cause an upward trend in conditions. Evaluate required long-term restoration actions and implement them according to their status among other restoration needs. (S/G #102)

- Prevent disturbance to streambanks and natural lake and pond shorelines caused by resource activities (for example, livestock, off-highway vehicles, and dispersed recreation) from exceeding 20 percent of stream reach or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots. This standard does not apply to developed recreation sites, sites authorized under Special Use Permits, and designated off-highway vehicle routes. (S/G #103)

- At either the landscape or project-scale, determine if the age class, structural diversity, composition, and cover of riparian vegetation are within the range of natural variability for the vegetative community. If conditions are outside the range of natural variability, consider implementing mitigation and/or restoration actions that will result in an upward trend. Actions could include restoration of aspen or other riparian vegetation where conifer encroachment is identified as a problem. (S/G #105)

- Identify roads, trails, OHV trails and staging areas, developed recreation sites, dispersed campgrounds, special use permits, grazing permits, and day use sites during landscape analysis. Identify conditions that degrade water quality or habitat for aquatic and riparian-dependent

species. At the project level, evaluate and consider actions to ensure consistency with standards and guidelines or desired conditions. (S/G #116)

- Assess the hydrologic function of meadow habitats and other special aquatic features during range management analysis. Ensure that characteristics of special features are, at a minimum, at Proper Functioning Condition, as defined in the appropriate Technical Reports (or their successor publications): (1) "Process for Assessing PFC" TR 1737-9 (1993), "PFC for Lotic Areas" USDI TR 1737-15 (1998) or (2) "PFC for Lentic Riparian-Wetland Areas" USDI TR 1737-11 (1994). (S/G #117)

- Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining bog and fen ecosystems and plant species that depend on these ecosystems. During project analysis, survey, map, and develop measures to protect bogs and fens from such activities as trampling by livestock, pack stock, humans, and wheeled vehicles. Criteria for defining bogs and fens include, but are not limited to, presence of: (1) sphagnum moss (*Spagnum spp.*), (2) mosses belonging to the genus *Meessia*, and (3) sundew (*Drosera spp.*) Complete initial plant inventories of bogs and fens within active grazing allotments prior to re-issuing permits. (S/G #118)

- Locate new facilities for gathering livestock and pack stock outside of meadows and riparian conservation areas. During project-level planning, evaluate and consider relocating existing livestock facilities outside of meadows and riparian areas. Prior to re-issuing grazing permits, assess the compatibility of livestock management facilities located in riparian conservation areas with riparian conservation objectives. (S/G #119)

- Under season-long grazing:

    - For meadows in early seral status: limit livestock utilization of grass and grass-like plants to 30 percent (or minimum 6-inch stubble height).
    - For meadows in late seral status: limit livestock utilization of grass and grass-like plants to a maximum of 40 percent (or minimum 4-inch stubble height).

    Determine ecological status on all key areas monitored for grazing utilization prior to establishing utilization levels. Use Regional ecological scorecards and range plant list in regional range handbooks to determine ecological status. Analyze meadow ecological status every 3 to 5 years. If meadow ecological status is determined to be moving in a downward trend, modify or suspend grazing. Include ecological status data in a spatially explicit Geographical Information System database.

    Under intensive grazing systems (such as rest-rotation and deferred rotation) where meadows are receiving a period of rest, utilization levels can be higher than the levels described above if the meadow is maintained in late seral status and meadow-associated species are not being impacted. Degraded meadows (such as those in early seral status with greater than 10 percent of the meadow area in bare soil and active erosion) require total rest from grazing until they have recovered and have moved to mid- or late seral status. (S/G #120)

- Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from grazing herbaceous vegetation to browsing woody riparian vegetation. (S/G #121)

- Recommend restoration practices in: (1) areas with compaction in excess of soil quality standards, (2) areas with lowered water tables, or (3) areas that are either actively down cutting or that have historic gullies. Identify other management practices, for example, road building,

recreational use, grazing, and timber harvests, which may be contributing to the observed degradation. (S/G #122).

5. Effects of Proposed Project on the Habitat for the Selected Project-Level MIS.

The following section documents the analysis for the following Category 3 species: aquatic macroinvertebrates. The analysis of the effects of the Long Ridge and Castle Peak grazing allotments on the aquatic MIS habitat for the selected project-level MIS is conducted at the project scale. The analysis used the California Wildlife Habitat Relationship model (CWHR (Mayer and Laudenslayer 1988)) data to determine vegetative type within the entire Long Ridge and Castle Peak grazing allotments. Existing acres of vegetation type (base vegetation layer) were determined using the Sierra National Forest Corporate GIS vegetation feature class of 2001 *ExistingVeg2001_pl.* The Forest stream and lake layers were used to develop Lacustrine/Riverine habitat. Detailed information on the MIS is documented in the SNF Bioregional MIS Report (USDA - Forest Service 2008), which is hereby incorporated by reference.

Cumulative effects at the bioregional scale are tracked via the SNF MIS Bioregional monitoring, and detailed in the SNF Bioregional MIS Report (USDA - Forest Service 2008).

Lacustrine/Riverine Habitat (Aquatic Macroinvertebrates)

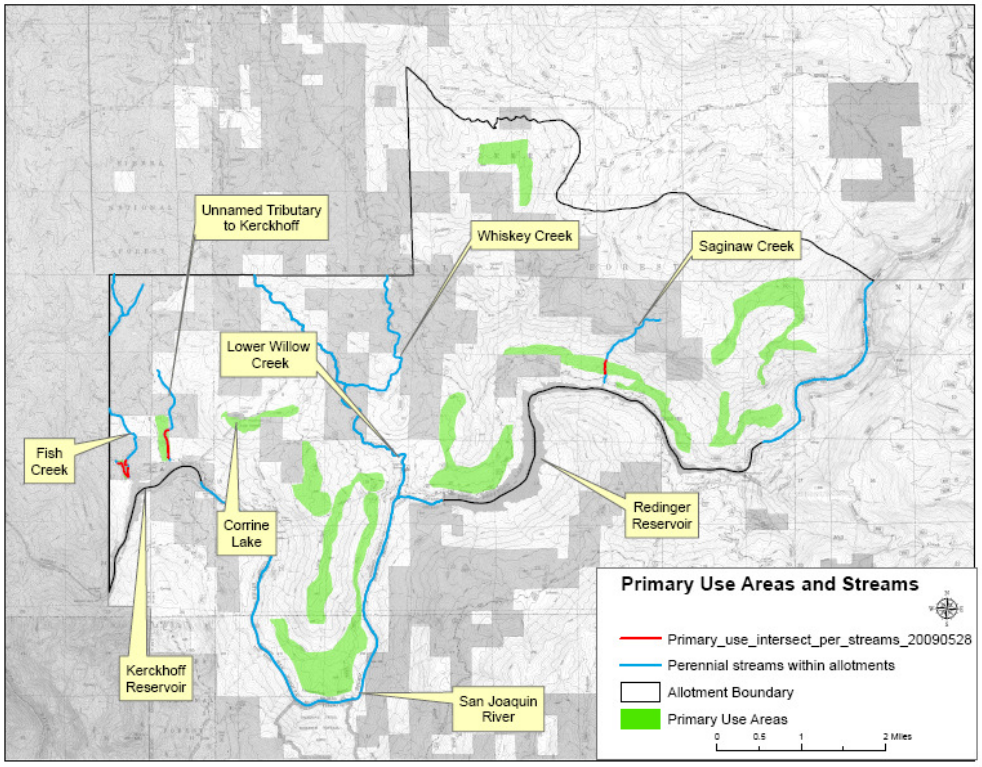
Habitat/Species Relationship.

Aquatic or Benthic Macroinvertebrates (BMI) have been demonstrated to be very useful as indicators of water quality and aquatic habitat condition (Resh and Price 1984; Karr et al. 1986; Hughes and Larsen 1987; Resh and Rosenberg 1989). They are sensitive to changes in water chemistry, temperature, and physical habitat. BMI are an important component of the foodweb, providing a food source for birds, mammals, amphibians, reptiles, and fish.

Project-level Effects Analysis – Lacustrine/Riverine Habitat

Habitat Factor(s) for the Analysis: Flow; Sedimentation; and Water surface shade.

Current Condition of the Habitat Factor(s) in the Project Area: The Long Ridge and Castle Peak allotments drain to the San Joaquin River system (Map 1). The 5th field Hydrologic Unit Codes (HUC) drainages are Shaver-Redinger (1804000610), Willow Creek (1804000611), and Fine Gold Creek (0804000612). Elevations within the allotments vary from 900 feet to 2,400 feet. Primary Use Areas are sites of forage where the majority of cattle grazing occur. Secondary Use Areas represent transitory movement by cattle between Primary Use Areas. There are approximately 21.5 miles of perennial streams and 622 acres of lakes/reservoirs within the two allotments, which represent habitat for benthic macroinvertebrates. Overlaps between primary allotment streams and Primary Use Areas for grazing are displayed in Map 1.



Map 1: Long Ridge and Castle Peak Allotment drainage

Flow: Due to the low elevations (under 3000 feet) within the two allotments, most streams are ephemeral or intermittent. These streams flow in response to precipitation events. The San Joaquin River, Willow Creek, and Whiskey Creek have headwaters at higher elevations beyond the allotment boundaries. These streams are influenced by snowmelt and are perennial. Both Willow Creek and the San Joaquin River have flows regulated under Federal Energy Regulatory Commission (FERC) licenses for hydroelectric power generation. The licenses are conditioned with Minimum Instream Flows (MIF) for the bypass (water diverted to Powerhouse) reaches. During July and August of dry water years, flows in Willow Creek (including Whiskey Creek) may be less than 2.0 cfs. Flows in the San Joaquin River are greatly reduced from historic discharge. Whiskey Creek does not have regulated flow.

Sedimentation: Sediment accumulation was noted at several sites during project review for Proper Functioning Condition ((PFC) BLM 1995). Saginaw Creek was determined to be Properly Functioning, but aggradation of coarse sand was observed in some pools (estimated 35%). Fish Creek (tributary to Kerckhoff Reservoir) was rated as Functioning at Risk (FAR), trend unknown. Aggradation was noted through the stream reach, with an estimated filling of pools by fines of 25 to 35%. An intermittent stream draining to Kerckhoff Reservoir was rated as Functioning at Risk with an upward trend. The rating was partially due to aggradation in some pools (estimated 20%). However, a flume breach of PG&E's No. 1 Ditch on April 28, 2009 caused significant erosion and mobilization of sediment from the point of failure to Kerckhoff Reservoir via this unnamed tributary. Deposition of this sediment compromised the pool function (i.e., estimated filling of 90%, a 70% increase from the original survey) along the reach analyzed for PFC, and thus the classification was revised to "FAR, downward trend". Excess fines were not observed during the Functioning Condition Analysis along Willow Creek, however accumulations of fines are evident upstream of Whiskey Creek. Accumulation of fines was not noted in either the San Joaquin River or Whiskey Creek.

Water Surface Shade: The San Joaquin River (as previously noted) is flow regulated. Present flows are greatly diminished from historic, thus the river at MIF is restricted within a large bedrock/boulder channel. Spills associated with snowmelt occur approximately 1 year out of three, thus vegetation has not become established within the historic channel. This condition

results in limited stream shading along the river. Willow Creek is also flow regulated, but rarely has overbanking flows. The creek is subject to riparian encroachment, thus is well-shaded. Whiskey Creek was also observed to have a dense riparian canopy. The intermittent streams within the allotments have variable riparian shading. There is some shading along the perimeter of Kerckhoff Reservoir, but Corrine Lake and Redinger Reservoir have limited vegetation that provides shade.

Alternative 1 (No Action)

The No Action alternative for grazing authorizations has been defined as No Grazing. Under this alternative, term grazing permits would be cancelled. Any ongoing activities with existing decisions or permits would not be changed if this alternative were selected including: underburning, fish stocking, cattle grazing on private land, plantation maintenance, recreation, and recreation residences.

Direct and Indirect Effects to Habitat.

Flow: Flow is affected by climate, geology, elevation, aspect, and topography. Kondolf (1993) indicates channel adjustment to grazing elimination lags other indicators of stream recovery, and could be further delayed if grazing continues within the watershed upstream of the allotments. Under the No Action Alternative (Alternative 1), there would be no anticipated changes from current flow patterns.

Sediment: Sediment consists of both fine-sized substrate and coarse sand (< 2 mm), and is an element of stream balance. Several sites where fines were accumulating within pools were noted during project review. The Project Hydrology Report (Stone 2008) indicates roads may account for some the material, while others may be the result of channel incision. Locally some incision appears to be related to past grazing, or activities on private property. The sediment deposited along the depositional reach of the unnamed tributary to Kerckhoff Reservoir will likely persist. Removal of cattle would assist bank recover locally at sites where their movements restrict establishment of cover.

Water Surface Shade: Shading along the San Joaquin River and Willow Creek is affected by hydroelectric diversions, thus removal of cattle would not be expected to affect shade on these two streams. Shading along the lakes and reservoirs would remain constant. Water Surface Shading along Fish Creek may increase with removal of cattle.

Cumulative Effects to Habitat In the Analysis Area

Past, present, and reasonably foreseeable actions within the project areas are off-highway vehicle use, road maintenance, recreational use (both developed and undeveloped), livestock grazing on private property, fish stocking, prescribed fire, and flow regulation for hydroelectric development.

The Project Hydrology Report (Stone 2008) notes that the Cumulative Watershed Analysis including current grazing generated Equivalent Roaded Acres (ERAs) in subwatersheds ranges from 0.15% to 0.65% (with the lower Threshold of Concern (TOC) being 4.0%). The absence of cattle grazing in the two allotments would not result in any increases to existing ERAs, or exceed a lower bound TOC. Cumulative Effects would not be anticipated under Alternative 1.

Flow: Conditions would be expected to similar to current flow regime.

Sedimentation: No current excessive erosion was noted at the Fish Creek site. Head-cutting and vertical incision is no longer occurring along the unnamed tributary to Kerckhoff Reservoir, which along with re-vegetation of the banks suggests this erosion is an older, historic feature, and not related to current land use activities. The Project Hydrology Report (Stone 2008) notes that the source of the sediment in Saginaw Creek

is likely from erosion caused by runoff from the Mammoth Pool Road. Similar to Direct and Indirect effects, there could locally be a reduction in sediment.

Water surface shade: Effects on water surface shade would be similar that discussed under Direct and Indirect Effects.

Cumulative Effects Conclusion: Similar to the discussion under Direct and Indirect effects, alteration to flows would not be expected to result from Alternative 1 (No Action). Aquatic habitat for benthic macroinvertebrates within the project area subwatersheds would be maintained at approximately 21.5 miles and 622 acres of reservoirs. A cumulative effect to BMI habitat would not be expected as a result of implementing Alternative 1.

Alternative 2 (Proposed Action)

Under Alternative 2 the Sierra National Forest would authorize continued livestock grazing on National Forest System (NFS) lands within the Long Ridge and Castle Peak Range Allotments over a total of 13,400 acres (private property not included in acreage). Under this proposal, the on-date for all permitted livestock to enter Castle Peak allotment would be delayed until March 1st. This proposal would authorize 300 cow/calf pair from March 1st through June 30th. The reduction in head months gained from this delayed date would be off-set by authorizing 40 cow/calf pair to graze July 1st through September 15th within the Castle Peak allotment and private land within the allotment that is leased by the current permittee.

Alternative 2 would delay the on-date for Long Ridge until March 1st. The reduction in head months gained from this delay would be off-set by authorizing an additional 25 cow/calf pair to graze in the allotment during the proposed season of use.

Direct and Indirect Effects to Habitat

Flow: Armour et al. (1994) list effects to flow attributed to livestock grazing including lowering of the groundwater table due to channel aggradation or effects of compaction on overland flow. The Project Hydrology Report (Stone 2008) identifies channel incision along Fish Creek and the intermittent tributary to Kerckhoff Reservoir. The report notes that excessive bank erosion is not occurring on Fish Creek, which suggest active channel degradation is not occurring. The report also notes that head-cutting and vertical incision is no longer occurring on the intermittent tributary to Kerckhoff, suggesting this erosion is an older, historic feature, and not related to current land use activities.

The allotments would use range readiness monitoring to determine turn-out dates and herd management to discourage congregating in riparian areas - this would reduce the potential for trampling impacts, as well as the possible associated effects including changes in stream channel morphology that could result from channel widening. Monitoring of trample/chisel, riparian utilization, and PFC will provide the basis for identifying areas in need of additional measures to minimize trampling impacts through time. No affects to current flow would be anticipated from Alternative 2.

Sedimentation: Sediment in streams can be increased due to bank erosion, trampling/chiseling, bank sloughing, or channel widening due to overgrazing of streambank vegetation) or increased runoff and erosion resulting from trampling and defoliation of streamside areas (Kaufmann and Krueger 1984; Fitch and Adams 1998). All of these impacts are related to trampling creating compaction, bank disturbance, or overgrazing of streambank and floodplain vegetation. Johnson (1992) notes that many studies support the conclusions that heavy grazing nearly always results in decreased infiltration and increased sediment production, while moderate grazing affects these parameters but is frequently not statistically different than no grazing, and these effects are related to reductions in biomass and increases in bare ground.

Sediment accumulation was noted at Saginaw Creek, Fish Creek (tributary to Kerckhoff Reservoir), and the intermittent stream draining to Kerckhoff. As noted under Flow, stream channel incision does not appear to be actively generating sediment to these sites. The sediment deposited along the depositional reach of the unnamed tributary to Kerckhoff Reservoir will likely persist. The allotments would implement range readiness monitoring to ensure that soil moisture is low enough to minimize compaction; riparian utilization standards to ensure that animals do not spend too much time in riparian areas; trample/chisel and PFC monitoring to ensure that livestock use meets Forest Standards and Guidelines, along with associated Best Management Practices to allow modifications through the Annual Operating Instructions to correct any problems that are identified.

Water Surface Shade: The Proposed Action would reduce the amount of time that the Gathering Pasture at Fish Creek would be used by cattle. This site is currently showing effects from cattle use. Additional monitoring of cover of this site would be incorporated under the Proposed Action. No changes to shading along reservoirs or lakes would be anticipated due to limited overlap of Primary Use Areas, primarily at Corrine Lake and to a lesser extent along Kerckhoff Reservoir.

Cumulative Effects to Habitat in the Analysis Area

The Project Hydrology Report (Stone 2008) indicates effects of the Proposed Action would be generally similar to past livestock grazing effects; therefore, the cumulative effects are similar to the description of the existing condition. Because animal numbers are reduced under the Proposed Action, the total impacts will be reduced, and the cumulative effect will be a slight improvement in condition throughout the primary use areas. The Equivalent Roaded Acre (ERA) method for grazing does not take animal numbers into account; therefore the decrease in numbers does not change the values that were calculated for the existing condition. Flow and Sediment would be expected to remain similar to current conditions.

There is an overlap of approximately 0.92 miles (including the Smalley Cove Pasture) of Primary Use Grazing Areas and perennial/intermittent streams within the allotments. Considering the limited amount of overlap involved, a change in Water Surface Shade that could affect water temperature would not be anticipated.

Streambank alteration monitoring of the two FAR reaches will ensure that identified grazing impacts are addressed in the Annual Operating Instructions (BMP 8-2 and 8-3). This will minimize the risk of livestock grazing contributing to CWE response or increasing the risk of a response in these areas.

Cumulative Effects Conclusion: Project design measures would be expected to maintain habitat for BMI. Similar to the discussion under Direct and Indirect effects, there would not be an expected cumulative alteration to Flow as a result of project implementation. Sediment inputs would not be expected to increase. Aquatic habitat for macroinvertebrates within the project area subwatersheds would be maintained at approximately 21.5 miles of streams and 622 acres of reservoir/lakes. A cumulative effect to BMI habitat would not be expected as a result of implementing Alternative 2 (Proposed Action).

Alternative 3 (Reduced Summer Grazing on Castle Peak Allotment)

Under Alternative 3 the Sierra National Forest would authorize continued livestock grazing on National Forest System (NFS) lands within the Long Ridge and Castle Peak Range Allotments over a total of 13,400 acres (private property not included in acreage). The season of use would be extended by 2 weeks from the Alternative 2 season, to allow livestock to use the allotment through June 30 with 125 cow/calf pair authorized.

Under Alternative 3 there would be no summer season authorized in Castle Peak Allotment (reduction of 40 cow/calf). Proposed numbers would additionally be reduced from Alternative 2 by 95 cow/calf pair overall. This alternative would authorize 205 cow/calf pair from March 1 to June 30. The season of use and permitted numbers matches up with the summer range used in conjunction with this allotment (Haskell Allotment has 205 permitted cow/calf pair July 1 to September 30).

Direct and Indirect Effects to Habitat

Flow: Similar to Alternative 2, no affects to current flow would be anticipated from Alternative 3.

Sedimentation: Sediment accumulation was noted at Saginaw Creek, Fish Creek (tributary to Kerckhoff Reservoir), and the intermittent stream draining to Kerckhoff. As noted under Alternative 2 Flow, stream channel incision does not appear to be actively generating sediment to these sites. Alternative 3 reduces the number of cattle within the Redinger pasture (Castle Peak allotment) by 50%. Summer use in the Castle Peak allotment would also be reduced (40 fewer cow/calf). Fewer cattle would reduce potential for stream channel instability. The sediment deposited along the depositional reach of the unnamed tributary to Kerckhoff Reservoir will likely persist. The allotments would implement range readiness monitoring to ensure that soil moisture is low enough to minimize compaction; riparian utilization standards to ensure that animals do not spend too much time in riparian areas; trample/chisel and PFC monitoring to ensure that livestock use meets Forest Standards and Guidelines, along with associated Best Management Practices to allow modifications through the Annual Operating Instructions to correct any problems that are identified.

Water Surface Shade: Similar to Alternative 2, Alternative 3 would reduce the amount of time that the Gathering Pasture at Fish Creek would be used by cattle. This site is currently showing effects from cattle use. No changes to shading along reservoirs or lakes would be anticipated from Alternative 3 due to limited overlap of Primary Use Areas, primarily at Corrine Lake and to a lesser extent along Kerckhoff Reservoir.

Cumulative Effects to Habitat in the Analysis Area

The Project Hydrology Report (Stone 2008) indicates effects of Alternative 3 would be generally similar to past livestock grazing effects; therefore, the cumulative effects are similar to the description of the existing condition. There would be approximately 950 acres of Primary Use Area in the Castle Peak allotment that would have use reduced by 50%. This represents more than 85% of the Primary Use Area in the Castle Peak allotment. Because animal numbers are reduced under Alternative 3, the total impacts would be reduced, and the cumulative effect would be an expected improvement in condition throughout the primary use areas. The improvement would be expected within riparian areas of the Redinger Pasture (Castle Peak allotment) with the exclusion of cattle during the summer. The Equivalent Roaded Acre (ERA) method for grazing does not take animal numbers into account; therefore the decrease in numbers does not change the values that were calculated for the existing condition. Flow and Sediment would be expected to remain similar to current conditions.

There is an overlap of approximately 0.92 miles (including the Smalley Cove Pasture) of Primary Use Grazing Areas and perennial/intermittent streams within the allotments. Considering the limited amount of overlap involved, a change in Water Surface Shade that could affect water temperature would not be anticipated.

Streambank alteration monitoring of the two FAR reaches would ensure that identified grazing impacts are addressed in the Annual Operating Instructions (BMP 8-2 and 8-3). This will minimize the risk of livestock grazing contributing to CWE response or increasing the risk of a response in these areas.

Cumulative Effects Conclusion: Project design measures are expected maintain habitat for BMI. Similar to the discussion under Direct and Indirect effects, there would not be an expected alteration in Flow as a result of Alternative 3. Sediment inputs would not be expected to increase. Aquatic habitat for macroinvertebrates within the project area subwatersheds would be maintained at approximately 21.5 miles of streams and 622 acres of reservoir/lakes. A cumulative effect to BMI habitat would not be expected as a result of implementing Alternative 3.

Summary of Aquatic Macroinvertebrate Status and Trend at the Bioregional Scale
The Sierra NF LRMP (as amended by the SNF MIS Amendment) requires bioregional-scale Index of Biological Integrity and Habitat monitoring for aquatic macroinvertebrates; hence, the lacustrine and riverine effects analysis for the Long Ridge and Castle Peak allotments must be informed by these monitoring data. The sections below summarize the Biological Integrity and Habitat status and trend data for aquatic macroinvertebrates. This information is drawn from the detailed information on habitat and population trends in the Sierra Nevada Forests Bioregional MIS Report (USDA Forest Service 2008), which is hereby incorporated by reference.

Habitat and Index of Biological Integrity Status and Trend. The data collected at the Bioregional scale indicate that the IBI metrics for macroinvertebrates are stable.

Relationship of Project-Level Habitat Impacts to Bioregional-Scale Aquatic Macroinvertebrates Habitat Trend. Changes in flow, sedimentation, and shade would not be expected under any alternative for the Long Ridge and Castle Peak Grazing Allotments. Locally there could improvement in stream shading through changes in management at Smalley Cover (Alternatives 2 and 3), and through reductions in number of cattle and season of use (Alternative 3). Existing trend in the habitat or aquatic macroinvertebrates across the Sierra Nevada bioregion would not be expected to be altered under any project alternative.

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BIOLOGICAL ASSESSMENT
FOR FEDERALLY LISTED THREATENED OR ENDANGERED PLANT SPECIES

AND

BIOLOGICAL EVALUATION
FOR FOREST SERVICE SENSITIVE PLANT SPECIES

FOR THE PROPOSED

CASTLE PEAK AND LONG RIDGE GRAZING ALLOTMENTS

SIERRA NATIONAL FOREST

Bass Lake Ranger District

Madera County, California

July 2009

Prepared By /s/ *Joanna Clines* DATE July 11, 2009
Joanna Clines
Forest Botanist

I. INTRODUCTION

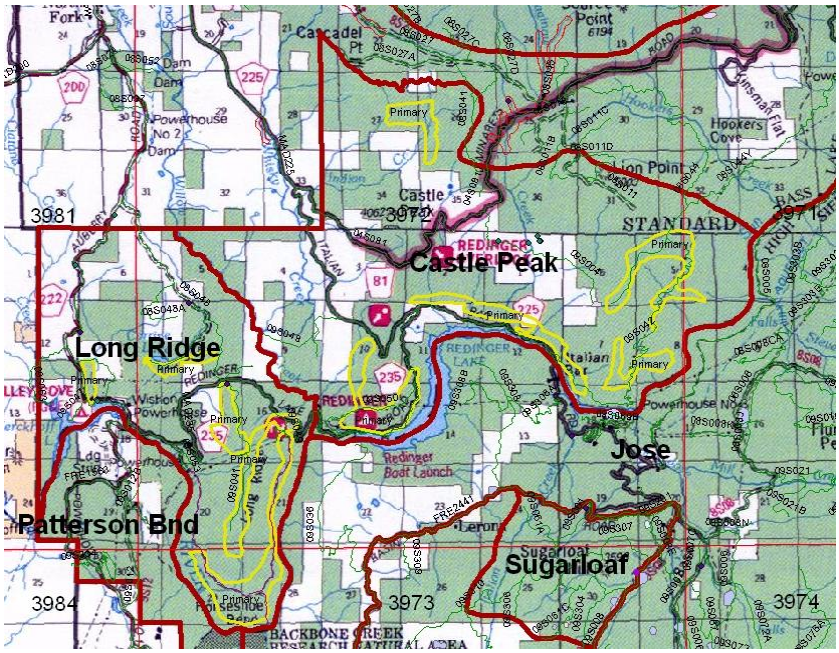
The purpose of this Biological Assessment/Biological Evaluation (BA/BE) is to review the proposal to authorize cattle grazing in the Castle Peak and Long Ridge Allotments in sufficient detail to determine the potential effects on Threatened, Endangered, and Sensitive (TES) plant species. Specifically, the BA will document effects on federally proposed, threatened, or endangered species and/or critical habitat; and determine whether formal consultation or conference is required with the United States Department of Interior, Fish and Wildlife Service, pursuant to the Endangered Species Act. The BE will analyze effects on Forest Service sensitive plant species in order to determine whether the proposed action will result in a trend toward a sensitive species becoming Federally listed. This BA/BE was prepared in compliance with standards and direction established in Forest Service Manual 2670.3 and 2672.42 and conforms with legal requirements set forth under Section 7 of the Endangered Species Act (19 U.S.C. 1536 (c), 50 CFR 402.12 (f) and 402.14 (c).

The Sierra National Forest, Bass Lake Ranger District is proposing to authorize continued livestock grazing in the Castle Peak and Long Ridge allotments, located in Madera County, California, approximately 5 miles due south the town of North Fork (Map 1).

The Threatened, Endangered, or Sensitive plants considered in this document are:

Calyptridium pulchellum	MARIPOSA ANNUAL PUSSYPAWS	Fed. Threatened
Carpenteria californica	CARPENTERIA	FS Sensitive
Leptosiphon serrulatus	MADERA LEPTOSIPHON	FS Sensitive

Appendix A provides the rationale for dismissing the other Sierra National Forest Sensitive plant species from consideration in the BA/BE.



Map 1. Castle Peak and Long Ridge Grazing Allotments (maroon outline indicates Sierra NF grazing allotment boundaries, Castle Peak and Long Ridge are labeled in black). Primary Use Areas are outlined in yellow.

II. CONSULTATION TO DATE

The Sierra National Forest botanist checked the US Fish and Wildlife Service web site for federally listed plants that may be found in the project area (USDI 2009). The list contains two plant species and two categories of critical habitat that may occur within the Forest. *Sidalcea keckii* (Keck's checkerbloom) is only known from outside the Forest to the south. Keck's checkerbloom grows in clay soils (derived from serpentine) in sparsely-vegetated grasslands at elevations between 400 and 1,400 feet in the foothills to the south of the Sierra National Forest. If this species were to be found in the Sierra National Forest in the future, it would not be likely to occur north of the San Joaquin River in the granitic soils of the Castle Peak and Long Ridge Allotments. The proposed critical habitat for *Sidalcea keckii* falls entirely outside the national forest boundary.

The proposed critical habitat for vernal pool plants does not fall within the Castle Peak or Long Ridge allotments, and none of the federally listed vernal pool plants are known or expected to occur in the Sierra National Forest.

Calyptridium pulchellum (Mariposa annual pussypaws) is known to occur in the Sierra National Forest at elevations below 3600 feet, and a population occurs two miles north of the Long Ridge Allotment on land owned by the Pacific Gas and Electric Company. Suitable habitat occurs in the project area, however no new populations were found during botanical surveys for this project. Because no populations were found in the allotments, no effects would be expected due to the proposed action or the alternative. No consultation with USFWS is necessary.

III. CURRENT MANAGEMENT DIRECTION

Management direction for annual grassland rangelands can be found in the Environmental Assessment for the Castle Peak and Long Ridge Allotments and in Section V. of this document.

Management direction for federally listed or candidate species and Forest Service Pacific Southwest Region sensitive species is summarized as follows:

Forest Service Manual 2672 provides standards for biological evaluations and provides a list of all Regional Forester designated sensitive wildlife and plant species occurring on National Forest System lands. Current policy as shown in the Forest Service Manual (FSM 2672.4) is to conduct a pre-field review of available information, and in instances where there is evidence of sensitive plant species or habitat, conduct a field reconnaissance if necessary to determine whether the project poses a threat to sensitive plants. The results of surveys and conflict determination are documented in the BE.

Sierra National Forest Land and Resource Management Plan, as amended (USDA FS; 1992, 2004). The Forest Plan direction for Sensitive species is to develop and implement management practices to ensure Sensitive species do not become threatened or endangered because of Forest Service actions. Under Forest Plan *Management Standards and Guidelines*, the forest is to a) develop sensitive plant species management guides to identify population goals and compatible management activities that will maintain viability (S&G 67) and b) manage sensitive plant species to avoid future listing as threatened and endangered. Standard and Guideline 68 directs the Forest to ensure maintenance of genetic and geographic diversity and viable populations of Sensitive plants. The Forest Plan also states that the Forest will conduct sensitive plant surveys and field investigations prior to any ground-disturbing activity in areas that sensitive plants are known or suspected to occur. Avoidance or mitigation measures are to be included in project plans and Environmental Assessments (USDA FS 1992). The Forest Wide Goals and Objectives identified in the Forest Plan for threatened, endangered, and proposed plant species and Forest Service R5 sensitive plant species are: a) Manage fish, wildlife and plant habitats to maintain viable populations of all resident fish, wildlife and plant species, b) Manage habitat

for State and Federally listed threatened and endangered fish, wildlife and plant species to meet the objectives of their recovery plans, c) Emphasize habitat improvement for sensitive, threatened, endangered and harvest species, d) Manage habitat for Forest Service sensitive fish, wildlife and plant species in a manner that prevents any species from becoming a candidate for threatened or endangered status. Manage botanical resources to maintain present diversity of species.

Sierra Nevada Forest Plan Amendment, 2004:

Standard and Guideline for Sensitive Plant Surveys

> 125. "Conduct field surveys for TEPS plant species early enough in the project planning process that the project can be designed to conserve or enhance TEPS plants and their habitat. Conduct surveys according to procedures outlined in the Forest Service Handbook (FSH 2609.25.11). If additional field surveys are to be conducted as part of project implementation, survey results must be documented in the project file."

IV. DESCRIPTION OF PROPOSED PROJECT

Alternative 1 - No Action

The No Action alternative for grazing authorizations has been defined by the Forest Service Handbook (FSH) (FSH 2209.13, Section 92.31) as no grazing. Under this alternative, term grazing permits would be cancelled. Improvements described under the proposed action would not be necessary. Cancellation of term permits must follow direction in Forest Service Manual (FSM) 2231.62d, Forest Service Handbook (FSH) 2209.13, chapter 10 section 16.24, and Part 2 item 11b of the term permit. Structures related to grazing such as water troughs and fences, would be removed if and when feasible.

The Proposed Action- Alternative 2

The Bass Lake Ranger District of the Sierra National Forest is proposing to authorize continued livestock grazing on National Forest System (NFS) lands within the Long Ridge and Castle Peak Range Allotments (Map 1) over a total of approximately13,350 acres (Table 1 shows acres of suitable rangeland on NFS lands proposed for continued livestock grazing by unit). Livestock grazing would be administered to meet *Sierra National Forest Land and Resource Management Plan* (Forest Plan) (USDA-Forest Service 1992, as amended) direction for resource management using adaptive management strategies.

Table 1. National Forest Acres Proposed for Continued Livestock Grazing by Unit

Allotment	Unit	Suitable Acres*	Total Unit Acres**
Castle Peak	Redinger	956	4803
	Castle Peak	529	3957
Long Ridge	Long Ridge	1387	4239
	Horse Pasture	192	193
	Smalley Cove Pasture	154	154

* Reasons for non-suitability: areas where livestock have been fenced out to enhance other resource values, areas where livestock access is restricted by physical barriers (e.g. slope, low forage production) and/or property ownership.
** Total Unit Acres does not includes private land acreage

The Proposed Action (Table 2) is to authorize continued livestock grazing on National Forest System lands within Castle Peak and Long Ridge allotments. Proposed range improvement construction (Table 3) would be completed within 5 years of the decision. In most cases, the Forest Service would provide materials and the permittee would provide labor.

Table 2. Proposed grazing season (period of use) and livestock numbers for Castle Peak and Long Ridge

allotments.

Allotment	Pasture	Livestock			Period of Use	
Long Ridge	Long Ridge Horse Pasture (gather pasture)	~100	cattle	cow/ calf	Early March at Livestock Turnout	Early June at Livestock Gather
Long Ridge	Smalley Cove Pasture (PG&E/Forest Service) (gather pasture)	50	cattle	cow/ calf	June 1	June 30
Long Ridge	All Units	125	cattle	cow/ calf	March 1	June 15
Long Ridge	All Units	40	cattle	cow/ calf	March 1	June 15
Castle Peak	Redinger	200	cattle	cow/ calf	March 1	June 30
Castle Peak	Castle Peak	100	cattle	cow/ calf	March 1	June 30
Castle Peak	All Units (including DeMasters Private Land)	40	cattle	cow/ calf	July 1	Sept 15

Table 3. Need for management change and proposed action description.

Allotment	Need for Change	Proposed Action Description
Castle Peak	Range readiness concerns with current permitted on-date	Change in season of use from January 1 through June 30 to March 1 through June 30.
	Change in season of use (extension of season)	Authorize 50 cow/calf pair to graze in Castle Peak allotment (in conjunction with privately leased land) July 1 through September 15. Based on a total reduction of 165 Head Months (HMs) from change in on-dates for Castle Peak.
	Range improvement not up to standard	Timberline Corral would be reconstructed to standard.
Long Ridge	Range readiness concerns with current permitted on-date	Change in season and use from January 1 through June 30 to March 1 through June 15
	Change in permitted numbers requested by permittee	Change in permitted numbers based on monitoring which indicates that the allotment has been managed well within standard and is meeting desired conditions. Also based on initial reduction of 100 HMs by changing season of use to delay on-dates. This reduction would be applied to an increase in permitted numbers from 140 to 165 total (equates to 85 HMs). Total reduction with this proposal is 15 HMs
	Additional holding field needed	Proposal would authorize holding field at junction of Southern California Edison Powerhouse #4 Road and County Road 235
	Long Ridge Corral and portion of Horse Pasture Holding Field fence located on Private Land	Long Ridge Corral and that portion of holding field fence that is on Private Land would be removed and reconstructed on adjacent Forest Service land
	Smalley Cove Pasture	Allow use in this field for gathering only. Up to 50 cow/calf pair are authorized during the month of June. Fence line would

		be re-aligned to include northern boundary of the National Forest Lands. This pasture incorporates Pacific Gas and Electric (PGE) lands under lease by current permittee.
	Trampling impacts at Teddy's Spring (west side of Long Ridge)	Spring head would be excluded from livestock use with a wire fence
	Trampling impacts at spring on western portion of Horseshoe Bend trail	Spring head would be excluded from livestock use with a wire fence

Mitigation

In response to public comments on the proposal, mitigation measures were developed to reduce possible impacts the action may cause. Implement Pacific Southwest Region Best Management Practices (BMPs) (USDA-Forest Service 1983, 2002) applicable to grazing by:

- Updating the Allotment Management Plans, and;
- Administration of the permits according to the Forest Service Handbook (FSH) 2209.13, Chapter 10 (Permit administration would include grazing utilization monitoring, Annual Operating Instructions, and the enforcement of the allowable use standards (FSH 2209.13, Chapter 10)).

Implement Allowable Use Standards and Guidelines:

- For meadows in early seral status: limit livestock utilization of grass and grass-like plants to 30 percent (or minimum 6-inch stubble height) (RCO#5 120);
- For meadows in late seral status: limit livestock utilization of grass and grass-like plants to a maximum of 40 percent (or minimum 4-inch stubble height) (RCO#5 120);
- Annual grasslands & oak woodlands with > 10 inches annual precipitation and ≤15% slope (1,000-2,500 feet elevation) in satisfactory condition managed for 700 lbs/acre Residual Dry Matter and 1,000 lbs/acre Residual Dry Matter for rangeland in unsatisfactory condition;
- Annual grasslands & oak woodlands with > 10 inches annual precipitation and >15% slope (>2,500 feet elevation) in satisfactory condition managed for 1,000 lbs/acre Residual Dry Matter and 1,200 lbs/acre Residual Dry Matter for rangeland in unsatisfactory condition; and
- Annual grasslands & oak woodlands managed for a minimum of 60 percent cover.

The following project design measures would continue to be implemented through Term Grazing Permits:

- Minimize impacts to fens through salt placement, riding and herding to draw and distribute livestock away from these sensitive areas (Riparian Conservation Objectives #5 118).
- Minimize impacts to pre-historic and historic sites through salt placement and herding to draw and distribute livestock away from these sensitive areas.
- Minimize impacts to streams, seeps and springs through salt placement and herding to draw and distribute livestock away from these sensitive areas (RCO#5 117).

Compliance monitoring of these standards and guidelines would be conducted through grazing permit administration, which would include Annual Operating Instructions, grazing utilization monitoring, and enforcement of the allowable use standards (Forest Service Handbook, 2209.13, Chapter 10).
Desired conditions are for rangelands to be in satisfactory condition and all grazing activities occurring on the forest would have management strategies which achieve or maintain rangeland conditions in satisfactory condition.

Satisfactory rangeland condition is defined in the Forest Plan as having either 1) a livestock forage condition rating of good or excellent or; 2) late seral ecological status greater than or equal to 60%

similarity to potential natural community (PNC), or; 3) a resource value rating of greater than or equal to 76% similarity to desired condition, and stable soils with continuous vegetative cover and rooting throughout available profile.

Table 4. Allowable utilization levels by vegetation community.

Landscape	Vegetation type	Standards for Rangeland in satisfactory condition or late ecological status	Standard for rangeland in unsatisfactory condition or early ecological status
Annual grasslands & oak woodlands with > 10 inches annual precipitation and ≤15% slope (1,000-2,500 feet elevation)	grass and grasslike plants and forbs	700 lbs/acre Residual Dry Matter	1,000 lbs/acre Residual Dry Matter
Annual grasslands & oak woodlands with > 10 inches annual precipitation and >15% slope (>2,500 feet elevation)	grass and grasslike plants and forbs	1,000 lbs/acre Residual Dry Matter	1,200 lbs/acre Residual Dry Matter
Meadows/riparian areas within annual grasslands, oak woodlands, montane and subalpine meadows	grass and grasslike plants and forbs	40 % Use by Weight	30 % Use by Weight
All rangeland types	hardwoods: including (oak/willow and other shrub seedlings/regeneration)	Allow browse on no more than 20% of current annual leader growth and advanced regeneration	Allow browse on no more than 10% of current annual leader growth and advanced regeneration
Annual Grasslands & Oak Woodlands	Annual Grasslands & Oak Woodlands/Uplands	Minimum of 60 percent cover	Minimum of 60 percent cover

The following standard and guideline is designed to achieve and/or maintain desired conditions:

- Pacific Southwest Region Best Management Practices (BMPs) applicable to grazing (USDA-Forest Service 2000, pages 143-147) would be met through Allotment Management Plans and administration of the permits according to the Forest Service Handbook (FSH) 2209.13, Chapter 10.

If Desired Conditions are not met, the proposed livestock grazing management would be managed by applying adaptive management to meet Forest Plan direction and other applicable laws and regulations, using the results of monitoring and evaluation to guide management practices to meet Forest Plan standards and guidelines and achieve desired conditions.

- Adaptive management includes any combination of the following actions to meet utilization standards and desired conditions: Adjust stocking rate (reduce livestock numbers).
    - Adjust season of use and numbers (timing, duration and head months);
    - Use of salt to control livestock distribution;
    - Herding of livestock to control distribution;
    - Implement rest and rotation grazing system;
    - Incorporate integrated weed management;
    - Construct or modify fencing to apply restrictions on grazing access if unacceptable impacts occur and cannot be reduced through other management practices (e.g. salt placement, herding, drift fences, and/or fenced exclosures;
    - Develop or modify water sources; and
    - Seeding or planting of native grasses and/or shrubs.

        - Continue annual utilization and five-year trend monitoring as part of on-going monitoring plan. Identified areas of concern would be monitored adaptively (e.g. streambank disturbance) on an annual basis until desired conditions are met two consecutive years. Once desired conditions are met at identified areas of concern,

monitoring would be completed every three to five-years.

Narrative of Proposed Continued Grazing (Proposed Permitted Use)

Castle Peak Allotment: There is a need for change in livestock on-dates for the Castle Peak allotment. Since 1984, this allotment has had a staggered turn-out date (dates which livestock are authorized to enter the allotment) of 100 cow/calf pair each entering the allotment on the 1st of January, February and March. Under this proposal, the on-date for all permitted livestock to enter Castle Peak allotment would be delayed until March 1st. This proposal would authorize 300 cow/calf pair from March 1st through June 30th. The reduction in head months gained from this delayed date would be off-set by authorizing 40 cow/calf pair to graze July 1st through September 15th within the Castle Peak allotment and private land within the allotment that is leased by the current permittee. Improvements to the existing "Timberline Corral" at Saginaw Creek would also be made. This wooden corral and sorting pens would be rebuilt with pipe material at the existing location. Desired conditions are being met (Range Analysis as referenced in Project File).

Long Ridge Allotment: The livestock on-dates for the Long Ridge allotment have historically been scheduled for early January, which in most years is too early for conditions to support grazing in terms of range readiness. This proposal would delay the on-date for Long Ridge until March 1st. The reduction in head months gained from this delay would be off-set by authorizing an additional 25 cow/calf pair to graze in the allotment during the proposed season of use. The boundary fence for the Smalley Cove pasture would be replaced along County Road 222 and a fence would be constructed along the northern Forest Service boundary of the pasture. This field has had chronic trespass, due to poor fence infrastructure, primarily, by unauthorized livestock and overuse has occurred, particularly in the lower Fish Creek and Smalley Cove riparian areas. This trespass and uncontrolled use has made quantifying the current level of use difficult. Therefore, the proposed livestock use for Smalley Cove pasture is conservative and would authorize up to 50 cow/calf pair for the month of June. This authorized use would be monitored to determine if compliance is being met. If monitoring data shows that the field can support more use over an extended season then an adjustment may be made in season and numbers. A 0.5 acre wire livestock holding trap is proposed at the junction of Country Road 235 and the entrance to Southern California Edison Powerhouse #4. This field would be used to gather straggler livestock at the end of the permitted season. Desired conditions are being met, with the exception of the Smalley Cove pasture (Range Analysis as referenced in Project File), hence the need for change described above.

Reduction in cattle and Season of Use – Alternative 3

Under Alternative 3 the Sierra National Forest would authorize continued livestock grazing on National Forest System (NFS) lands within the Long Ridge and Castle Peak Range Allotments over a total of 13,400 acres (private property not included in acreage). Cattle use under Alternative 3 would be as displayed in Table 5.

Castle Peak:

Under Alternative 3 there would be no summer season grazing authorized in the Castle Peak Allotment. Proposed numbers of cattle would be reduced from the Proposed Action by 95 cow/calf pair overall. This alternative would authorize 205 cow/calf pair from March 1 to June 30. The season of use and permitted numbers matches up with the summer range used in conjunction with this allotment (Haskell Allotment has 205 permitted cow/calf pair July 1 to September 30).

Long Ridge:

Under Alternative 3, the proposed numbers of cattle would be similar to the proposed action. The season of use would be extended by 2 weeks from the Proposed Action season, to allow livestock to use the allotment through June 30 with 165 cow/calf pair authorized. The season of use matches up with Central Camp Allotment permitted season (on date variable from June 1 –July 1), which is used in

conjunction with the Long Ridge Allotment.

Table 5. Proposed grazing season (period of use) and livestock numbers for Castle Peak and Long Ridge allotments.

Allotment	Pasture	Livestock			Period of Use	
Long Ridge	Long Ridge Horse Pasture (gather pasture)	~100	cattle	cow/ calf	Early March at Livestock Turnout	Early June at Livestock Gather
Long Ridge	Smalley Cove Pasture (PG&E/Forest Service) (gather pasture)	50	cattle	cow/ calf	June 1	June 30
Long Ridge	All Units	125	cattle	cow/ calf	March 1	June 30
Long Ridge	All Units	40	cattle	cow/ calf	March 1	June 30
Castle Peak	Redinger	100	cattle	cow/ calf	March 1	June 30
Castle Peak	Castle Peak	105	cattle	cow/ calf	March 1	June 30

Mitigation
Mitigation measures would be as presented under Alternative 2.

V. EXISTING ENVIRONMENT

Field surveys were conducted for sensitive plants and invasive non-native plants during spring and summer 2007 and 2008 by Forest Service botanists. The primary roads accessing the project area were driven or walked to get a general idea of potential for TES plants and noxious weeds to occur. Surveys of Primary Use Areas were conducted on foot, and were especially focused on areas of suitable habitat for the Mariposa annual pussypaws, carpenteria, slender-stalked monkey flower, orange lupine, and Madera leptosiphon. Only species that were found or are suspected of being present are further analyzed, please see Appendix A for more information about the other species. A list of plant species observed during field surveys for the allotments can be found in the files of the Forest Botanist at North Fork, CA.

Mariposa annual pussypaws – *Calyptridium pulchellum*

Habitat for the Mariposa annual pussypaws (*Calyptridium pulchellum*) is gravelly or sandy flats or gentle slopes associated with granitic outcrops, below 3600 feet elevation (USDI, 1998). Suitable habitat occurs in the project area, however no new populations were found during botanical surveys for this project.

Forest Service Sensitive Plant Species in the project area:
Aside from *Carpenteria californica,* which occurs along Willow Creek in the Long Ridge Allotment outside of primary use areas, no populations of Forest Service sensitive plants are known to occur within the project area. There is a chance that *Leptosiphon serrulatus* does occur but was not detected during surveys, thus the analysis will evaluate potential effects to any possible undiscovered populations that may exist in the allotments. Appendix A provides a full list of the Threatened, Endangered, and Sensitive plants found in or near the Sierra National Forest, a summary of information about their biology and habitat, and rationale for including or excluding them in this analysis.

Carpenteria – *Carpenteria californica*
Carpenteria is an evergreen shrub with opposite leaves and showy white flowers (Figure 1). This monophyletic species is endemic to the central Sierra Nevada in southern Madera County and northern Fresno County (CNDDB, 2009).

Figure 1. *Carpenteria californica* shrub in full bloom. Photo by J. Clines

The entire range of this rare shrub is within about a 225 square mile area of the San Joaquin and Kings River drainages, between 1500 and 4500 feet elevation, mostly in Fresno County but recently documented two occurrences in Madera County. Carpenteria is known from approximately 8 occurrences. The smallest occurrence consists of a few shrubs; the largest occupies an overall area of approximately 60 square miles in which stands of a few shrubs to many hundreds of shrubs occur primarily in draws and along streams. The only occurrence relevant for this analysis is found along Willow Creek between the Long Ridge and Castle Peak allotments, about 1 mile northeast of Corinne Lake. The population consists of about 55 shrubs on a steep, east-facing slope on the west side of the stream.

Protection of Occurrences: About half of the plants/populations occur in Sierra National Forest Land, mostly in the "Front Country" management zone as prescribed in the Forest Land Management Plan. This management prescription emphasizes wildlife and range activities with emphasis on protection of watershed values. This area of wildland-urban interface poses a challenge for fuels and fire management, especially since prescribed burning of Carpenteria habitat in the summer or fall is probably required to stimulate seedling establishment and maintain a mix of age classes. Two special management areas were established in the 1970s for the protection and study of Carpenteria: The Backbone Creek RNA and the Carpenteria Botanical Area. A significant population is protected on land owned by the Sierra Foothill Conservancy at Black Mountain.

The overall trend appears to be stable. Since 1990, seedling establishment has been documented (Clines, 1994, and Clines, 1997, Beyers et. al, 2001), mostly after fire, but also in the absence of fire. Some vegetative propagation of mature plants does take place through layering of branches.

Threats to carpenteria are urban development on private land. On public land, threats include: lack of fire or fire at the wrong time of year (e.g. spring, when soil is moist and seeds and seedlings would be killed), competition with yellow starthistle (especially with carpenteria seedlings), grazing and trampling by livestock (this is only a threat the first few years after fire), physical damage to plants and habitat from

illegal Off-Highway Vehicle use. Carpenteria inhabits a unique type of mixed chaparral which is notable for the absence of chamise. Appropriate habitat does not appear to be a limiting factor for carpenteria, as apparently suitable habitat is abundant in the general area and not all of it is occupied by carpenteria. Research on pollination and breeding system of carpenteria indicates that gene flow is likely still occurring among the different occurrences, which are separated by several miles in some cases (Clines, 1994).

Madera leptosiphon – *Leptosiphon serrulatus*

The Madera leptosiphon (formerly known as Madera linanthus) is an annual herb that ranges in height from 5-18 cm. The flowers are clustered in heads, and corollas are white with tubes 7-8 mm long and lobes 6-8 mm long. Superficially this species resembles the much more common *L. montanus* (mustang clover) but the corolla tubes of mustang clover are much longer (25-30 mm) and plants of mustang clover are generally taller, ranging from 10-60 cm. Figure 2 shows a typical flowering head of *L. serrulatus.*

Figure 2. *Leptosiphon serrulatus* flowers
Photo by C. Winchell

Historic locations are documented from southern Mariposa County southward to Kern County, with occurrences in Madera, Fresno, and Tulare Counties. Elevations range from 260 to over 5,000 feet. Historically documented from at least 20 occurrences. Several populations occur near the Castle Peak and Long Ridge allotments, This species was added to the R5 Sensitive Plant list in 2006 partially due to concerns for a downward trend based on unsuccessful attempts to re-locate several historic occurrences. Since then, at least 5 new sites have been documented (Winchell, 2004), one of which occurs just west of the Long Ridge allotment boundary near Kerckhoff Dam. Three nearby populations were also discovered in Fresno County across the San Joaquin River from the allotments in 2004 (Winchell, 2004).

Potential threats across the range of this species are private land development, road maintenance or reconstruction, competition from invasive non-native plants, overgrazing or excessive trampling by livestock, and off-highway vehicles. The higher elevation populations could be damaged by timber harvest and fuels reduction treatments.

Typical habitat for Madera leptosiphon is dry slopes in cismontane woodland and lower montane coniferous forest, mostly in decomposed granite soils, but sometimes serpentine soils. Sites vary from well-vegetated areas in blue oak woodland to more open, rocky sites. Although most occurrences are documented from blue oak woodland at lower elevations (below 3500 feet), at least 2 are known from mixed conifer forest above 5,000 feet where winter snow remains for several months. The effects of

grazing on Madera leptosiphon are not known. Figure 3 shows a typical site in foothill woodland of Fresno County, just south of the Castle Peak Allotment.

Figure 3. The white flowers indicated by the arrow are *Leptosiphon serrulatus.*
Photo by C. Winchell

VI. EFFECTS OF THE PROPOSED ACTION

GENERAL DISCUSSION OF EFFECTS:

Direct effects

The following direct effects to sensitive plants are possible: Direct killing of plants when livestock walk through populations (trampling) or eat part of all of a plant, causing its death. The building or reconstruction of range improvements could also have direct effects if structures were to be built on top of rare plants or if ground is disturbed during construction or reconstruction of improvements or fences.

Indirect effects

Indirect effects to sensitive plants would mostly be related to erosion, soil compaction, or the degradation or loss of habitat resulting from the introduction or spread of noxious or invasive weeds. Noxious weeds are plant species that can spread rapidly and compete with native plants for water and other resources, in some cases forming solid stands that crowd out sensitive plant species. Noxious weeds can be transported by livestock, vehicles, and heavy equipment. Noxious weed species of particular concern in the two allotments are: tocalote (*Centaurea melitensis*), Italian thistle (*Carduus pycnocephalus*), and klamathweed (*Hypericum perforatum*). Tocalote and Italian thistle have been increasing in the foothills across property ownerships over the past 10 – 20 years (please see EA for further information).

Risk of noxious weed introduction and spread should be reduced by working with permittees to avoid transporting new weeds into the allotments and to be vigilant in recognizing new infestations that do arrive so that they can be promptly controlled as recommended by the USDA Forest Service "Guide to Noxious Weed Prevention Practices" (2001).

SPECIES-SPECIFIC EFFECTS

For the **Mariposa annual pussypaws**, no effects are expected under any of the three alternatives, as no populations were found within the allotments

Alternative 1 – No Action.

Direct and indirect effects –

There would be no direct or indirect effects to **carpenteria** if livestock grazing permits were cancelled. Although there would be no direct effects for **Madera leptosiphon**, there is a possibility of indirect effects: if non-native annual grasses and more aggressive non-native weeds such as tocolote and Italian thistle were to benefit by being released from grazing, it is conceivable that any undiscovered populations of Madera leptosiphon could suffer reduced vigor as a result. This is speculative but as the use of livestock grazing is increasingly being studied as a method of maintaining native plant species in non-native annual grasslands (Huntsinger et al, 2007), it is worth mentioning.

Cumulative effects – There would be no cumulative effects under the No Action alternative.

Alternative 2 – Proposed Action

Direct and indirect effects – Negligible direct effects are expected for **carpenteria** under Alternative 2. The population of carpenteria occurs along a section of Willow Creek that is seldom, if ever accessed by cattle (personal communication with Aimee Smith, 6/30/09). A population of mature shrubs such as this is not subject to cattle disturbance at the stocking rates proposed under this alternative. However, the fact that there is a higher stocking rate and a longer season of use under Alternative 2 increases the chance cattle may venture into the stand and eat some leaves. Also, there is a higher likelihood that invasive non-native weeds would flourish and spread than under Alternatives 1 or 3, and the long-term sustainability of the carpenteria population rests on the ability of seedlings to mature into reproductively mature shrubs over time. Because carpenteria seedlings are primarily produced after fire (Clines, 1994), and weeds tend to proliferate after fire, there is a greater risk that future seedlings would be outcompeted by noxious weeds under this Alternative relative to Alternatives 1 and 3.

There is a slight chance of direct effects in the form of trampling to **Madera letosiphon** if any undiscovered plants were to exist in the allotments, and under Atlernative 2 this is more likely than under Alternative 3 because of the presence of cattle from January to March when the **Madera leptosiphon** plants are germinating and growing in moist to wet soils (soils are more fragile, trampling would be more likely to kill young annual plants).

Cumulative effects – Other activities occurring within the two allotments that may contribute to the effects described above are: uncontrolled off-road vehicle use, pre-commercial thinning, fuelbreak maintenance, installation of buried telephone and fiber-optic lines, and recreational activities (especially hiking, motorcycling, biking). None of these activities combines with the Proposed Action to result in a cumulative effect for the following reasons: uncontrolled OHV use will be curtailed when the Forest Travel Management Record of Decision is issued and riding can only occur on designated routes, thinning and plantation maintenance occurs in areas with commercial timber which do not overlap with Primary Use Areas, fuelbreak maintenance incorporates noxious weed prevention and control, and recreational activities such as hiking and biking tend to occur in areas such as trails where checking for new weed infestations is relatively easy and will be occurring over the term of the grazing permit. The failure of Ditch #1 in April of 2009 (part of the PG&E Crane Valley Project) is another event that was evaluated to determine whether it might have contributed to cumulative effects. Based on a field assessment by a PG&E contract botanist (PGE, 2009), no sensitive plants were found in the area affected by the ditch failure, thus no cumulative effects would accrue.

Cumulative effects would be more likely under Alternative 2 than under Alternatives 1 or 3 for **carpenteria** under the following scenario: if a fire were to burn through the carpenteria stand, two problems could develop: 1) cattle would be more likely to access the carpenteria stand if it were opened up by fire, and they may eat the resprouts and / or trample the seedlings as has been observed in the past (Clines, 1994); and 2) weed infestations worsened to the point that carpenteria seedlings (which are not very competitive) were not able to survive to maturity. However, this would likely be offset by post-fire recommendations of the Burned Area Emergency Response team to ensure that cattle do not access carpenteria habitat. BAER also usually provides for surveys and control of noxious weeds post-fire, which would also lessen the likelhood of a cumulative effect.

Alternative 3 – Reduced Use

Direct and indirect effects – No direct effects are expected for **carpenteria** under Alternative 3. The population of carpenteria occurs along a section of Willow Creek that is seldom, if ever accessed by cattle (personal communication with Aimee Smith, 6/30/09). A population of mature shrubs such as this is even less likely to experience cattle disturbance under Alternative 3 than under Alternative 2. There is a lower likelihood than under Alternative 2 that invasive non-native weeds would flourish and spread. The long term sustainability of the carpenteria population rests on the ability of seedlings to mature into reproductively mature shrubs over time. Because carpenteria seedlings are primarily produced after fire (Clines, 1994), and weeds tend to proliferate after fire, there is a lower risk that future seedlings would be outcompeted by noxious weeds under this alternative relative to Alternatives 1 or 2. Alternative 3 provides a greater opportunity for native annual plant sepcies, such as **Madera leptosiphon**, to establish and grow during the months of January and February (on-date of March 1 rather than January 1 as in Alternative 2).

Cumulative effects – Other activities occurring within the two allotments that may contribute to the effects described above are: uncontrolled off-road vehicle use, pre-commercial thinning, fuelbreak maintenance, installation of buried telephone and fiber-optic lines, and recreational activities (especially hiking, motorcycling, biking). None of these activities combines with the Proposed Action to result in a cumulative effect for the following reasons: uncontrolled OHV use will be curtailed when the Forest Travel Management Record of Decision is issued and riding can only occur on designated routes, thinning and plantation maintenance occurs in areas with commercial timber which do not overlap with Primary Use Areas, fuelbreak maintenance incorporates noxious weed prevention and control, and recreational activities such as hiking and biking tend to occur in areas such as trails where checking for new weed infestations is relatively easy and will be occurring over the term of the grazing permit. The failure of Ditch #1 in April of 2009 (part of the PG&E Crane Valley Project) is another event that was evaluated to determine whether it might have contributed to cumulative effects. Based on a field assessment by a PG&E contract botanist (PGE, 2009), no sensitive plants were found in the area affected by the ditch failure, thus no cumulative effects would accrue.

The cumulative effects scenario described under Alternative 2 is less likely under Alternative 3, although there would still be a need for special management in the event of a fire in the carpenteria stand to ensure success of recovering resprouts and seedlings. The spread of weeds would be less severe overall under this alternative, which would make a cumulative effect less likely.

VII. DETERMINATION

The determinations are the same for all 3 alternatives, though there are sublte differences in effects described above.

Threatened, Endangered, and Proposed Plants (BA)

It is my determination that the implementation of the no action or either of the two action alternatives for the Castle Peak and Long Ridge grazing allotments **will not affect *Calyptridium pulchellum*** because no populations were found during surveys of the allotments. No consultation with US Fish and Wildlife Service is necessary.

Forest Service Sensitive Plants (BE)

It is my determination that the implementation of the no action alternative for the Castle Peak and Long Ridge grazing allotments **will not affect *Carpenteria californica,* or *Letposiphon serrulatus.***

It is my determination that the implementation of either of the two action alternatives for the Castle Peak and Long Ridge grazing allotments **may affect individuals but is not likely to cause a trend to federal listing or a loss of viability to *Carpenteria californica.*** This is because cattle seldom access the area of the carpenteria population, there is a slight chance that cattle might occasionally enter the stand and eat shoots or trample seedlings.

It is my determination that the implementation of either of the two action alternatives for the Castle Peak and Long Ridge grazing allotments **may affect individuals but is not likely to cause a trend to federal listing or a loss of viability to *Leptosiphon serrulatus.*** This is because if any undiscovered plants are present in the project area they might experience some impacts but are also likely to be benefitted by grazing (annual grasses that might dominate a site with the would be kept from doing so under a regime of moderate grazing).

Other plant species listed on the Sierra National Forest as Forest Service Sensitive do not have habitat within the project area or were not found during surveys, and therefore will not be impacted by the project (see Appendix A for a summary of rationale supporting this statement).

VIII. MANAGEMENT RECOMMENDATIONS

1. Consultation with the Forest Botanist must be made if any aspects of the proposed project changes. Also, if during project implementation additional sensitive plant species are discovered, the botanist must be contacted so that any protection measures necessary can be implemented.

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APPENDIX A

United States Department of Agriculture
Forest Service
Bass Lake Ranger District
57003 Road 225
North Fork, CA 93643
(559) 877-2218
(559) 877-3108 FAX
(800) 735-2929 CA Relay Service

File Code: 2360 **Date:** 06/09/2009
Route To:

Subject: Cultural Resources Report for 2009 Range NEPA: Long Ridge and Castle Peak Allotments

To: Aimee Smith

Analysis of the Long Ridge Allotment and the Castle Peak Allotment for cultural resources was conducted under the guidelines provided in the *Programmatic Agreement Among The U.S. Department Of Agriculture, Forest Service, And The Advisory Council On Historic Preservation Regarding Rangeland Management Activities On National Forest System Lands* (PA). The Sierra National Forest selected Option 2 of this PA.

Within the Castle Peak Allotment, there are a total of 37 cultural resource sites. Approximately 1,085 acres were surveyed for this undertaking. Twenty-two cultural resources were located and recorded as a result of this survey. Out of the total number of cultural resource sites, 33 sites were considered resources of interest and were assessed for grazing impacts. No impacts from rangeland management were found on any of these sites; however, one site (05155101414) has the potential for new impacts from the presence of a developed spring on the site. This site is recommended for monitoring. Monitoring should occur at a minimum of once per year for up to three years to determine the intensity and frequency of use, use patterns, and any need for protection measures.

Within the Long Ridge Allotment, there are a total of 47 cultural resource sites. 1,589 acres were surveyed for this undertaking. Six cultural resources were located and recorded as a result of this survey. Out of the total number of cultural resource sites, 20 sites were considered resources of interest and were assessed for grazing impacts; no impacts from rangeland management were found on any of these sites. Future monitoring may be conducted as a routine part of the Cultural Resources program to identify any new impacts.

There are no cultural resources associated with the Long Ridge Corral or the proposed re-location, and there are no cultural resources in the proposed Smalley Cove Pasture. Two proposed spring exclosures are not located within the boundary of any cultural resource.

There is one previously recorded historic site at the location for the proposed holding field at the junction of Southern California Edison Powerhouse #4 Road and County Road 235. This site is ineligible to the National Register of Historic Places and the holding field will not be an impact.

Issuance of Term Grazing Permits for Alternatives 1, 2, or 3 on the Long Ridge Allotment and Castle Peak Allotments is determined to be no effect to cultural resources under the guidelines of the PA. The analysis and findings were completed on 06/09/2009, and are documented in two Archeological Reconnaissance Reports (ARR):

Long Ridge Allotment Term Grazing Permit, ARR #R2008051551051

Castle Peak Allotment Term Grazing Permit, ARR #R2008051551058

These reports are located in the Cultural Resource files in the Bass Lake District Office, Sierra National Forest.

/s/ Marie Mogge

United States
Department of
Agriculture

Forest Service

Pacific
Southwest
Region

Sierra
National Forest

September 2009

Castle Peak and Long Ridge Grazing Allotments Environmental Assessment

(Project Number 23723)

Decision Notice and Finding of No Significant Impact

Castle Peak and Long Ridge Grazing Allotments
Decision Notice and Finding of No Significant Impact

Project Number: 23723

Sierra National Forest
Bass Lake Ranger District
Madera County, California

Lead Agency: **USDA Forest Service**

Responsible Officer: **David W. Martin, District Ranger**
Bass Lake Ranger District
Sierra National Forest
57003 Road 225
North Fork, CA 93643

Information Contact: **Aimee Smith**
Rangeland Management Specialist
Bass Lake Ranger District
Sierra National Forest
57003 Road 225
North Fork, CA 93643
559-877-2218 ext. 3151
asmith03@fs.fed.us

Cover Photo: Long Ridge (foreground) and Castle Peak allotment overview

Photo Credit: Amy Gustafson, USDA Forest Service

Abstract

The Forest Service prepared the Castle Peak and Long Ridge Grazing Allotments Environmental Assessment (EA) in compliance with the National Environmental Policy Act (NEPA) and other relevant laws and regulations. This document, the Castle Peak and Long Ridge Grazing Allotments Decision Notice and Finding of No Significant Impact (FONSI) contains a Decision Notice and FONSI. The Decision Notice identifies the decision and rationale for selecting that alternative. The FONSI shows that the decision does not cause significant impacts on the human environment and explains why an environmental impact statement is not necessary.

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Appendix A – Response to Comments: Castle Peak and Long Ridge Grazing Allotments Environmental Assessment (24 pages)

Castle Peak and Long Ridge Grazing Allotments
Environmental Assessment
Decision Notice and Finding of No Significant Impact

1. Decision and Reasons for the Decision

Background

The Forest Service prepared an Environmental Assessment[1] (EA) in compliance with the National Environmental Policy Act (NEPA) and other relevant laws and regulations. The EA discloses the direct, indirect and cumulative environmental impacts that would result from the proposed action and alternatives considered in the EA. Additional documentation, including more detailed analyses of project-area resources, may be found in the project record located at the Bass Lake Ranger District Office in North Fork, CA.

The EA (pp. 8 and 9) explains the Purpose and Need for Action, of which the key points are:

- Allow grazing on suitable lands where it is consistent with other multiple use goals and objectives as authorized through several Congressional Acts; and
- Provide livestock forage and contribute to the economic and social well being of people (in this case ranchers) by providing opportunities for economic diversity and by promoting stability for communities that depend on range resources for their livelihood.

The Proposed Action and Alternative 3, as described in the EA (pp. 15-16 and 20-26) authorizes the continued use of the Castle Peak and Long Ridge allotments for cattle grazing through the issuance of grazing permits for a ten year period. The Proposed Action (Alternative 2) and Alternative 3 respond to the goals and objectives outlined in the Sierra National Forest Land and Resource Management Plan[2] (Forest Plan). Both action alternatives help move the resources in the project area towards desired conditions described in the Sierra Nevada Forest Plan Amendment Record of Decision[3].

This document contains a Decision Notice and Finding of No Significant Impact (FONSI). The Decision Notice identifies the decision and the rationale for selecting or modifying an alternative from the EA. The FONSI shows that the decision does not cause significant impacts on the human environment and explains why an environmental impact statement is not necessary.

[1] USDA 2009. Castle Peak and Long Ridge Grazing Allotments Environmental Assessment. July 2009. Forest Service, Sierra National Forest, North Fork, CA.
[2] USDA 1992. Sierra National Forest Land and Resource Management Plan. September 1992. Forest Service, Sierra National Forest, North Fork, CA. and; USDA 1995. Sierra National Forest Land and Resource Management Plan Amendment: An Environmental Assessment of Utilization Standards for Determining Proper Use of Available Forage for Commercial Livestock. September 1995. Forest Service, Sierra National Forest, North Fork, CA.
[3] USDA 2004. Sierra Nevada Forest Plan Amendment Supplemental Environmental Impact Statement Record of Decision. January 2004. Forest Service, Pacific Southwest Region, Vallejo, CA.

Decision

Based upon my review of the alternatives, I decided to select and implement Alternative 3 (Reduced Season of Use and Livestock Numbers) as described in the EA (p. 26) with a modification to this alternative as part of my decision that would authorize variable livestock numbers for the Castle Peak Allotment with a range from 205 cow/calf pair up to 260 cow/calf pair. In reaching this decision, I reviewed and considered the most recent information, including the specialist reports included in the project record and input from interested parties. My decision authorizes the continued use of the Castle Peak and Long Ridge allotments for cattle grazing through the issuance of grazing permits for ten years.

My decision to select a Modified Alternative 3 will authorize variable livestock numbers for the Castle Peak Allotment with a range from 205 cow/calf pair up to 260 cow/calf pair. Alternative 3 (Reduced Season of Use and Livestock Numbers) is described in the EA on page 26 and summarized below in Table 2 of this document.

Table 1. Modified Alternative 3 Season and Numbers (Selected Alternative)

Allotment	Livestock Numbers	Season of Use	Head Months	Animal Unit Months (AUMs)
Long Ridge	165	3/1-6/15	580	766
Long Ridge	50	6/1-6/30*	49	65
Castle Peak	205	3/1-6/30	822 - 1043	1085 - 1377
		Total	1451 - 1672	1916 - 2208

*Livestock in allotment from 3/1-6/30 with straggler cattle authorized in Smalley Cove Pasture from 6/1-6/30

Table 2. Alternative 3 Season and Numbers

Allotment	Livestock Numbers	Season of Use	Head Months	Animal Unit Months (AUMs)
Long Ridge	165	3/1-6/15	580	766
Long Ridge	50	6/1-6/30*	49	65
Castle Peak	205	3/1-6/30	822	1085
		Total	1451	1916

*Livestock in allotment from 3/1-6/30 with straggler cattle authorized in Smalley Cove Pasture from 6/1-6/30

In reaching this decision, I reviewed and considered the most recent information, including the specialist reports included in the project record and input from interested parties. My decision authorizes the continued use of the Castle Peak and Long Ridge allotments for cattle grazing through the issuance of grazing permits for ten years.

This decision includes the following mitigation measures.

Mitigation Measures

1. Implement Best Management Practice (BMP) 8-2, Grazing Permit System to safeguard water quality potentially affected by livestock grazing activities. Conduct field checks during the grazing season to insure implementation of permit requirements related to water quality.

2. Minimize impacts to pre-historic and historic sites, streams, seeps and springs through proper salt placement and herding to draw and distribute livestock away from these sensitive areas.
3. Work with permittees to prevent spread of noxious weeds from base ranches to the National Forest including the use of weed-free hay and feed for cattle and any horses associated with the base ranch and allotment operations (either certified weed free or determined upon inspection by permittee or Forest Service to be free of noxious weeds).

Reasons for the Decision

I selected Modified Alternative 3 (Reduced Season of Use and Livestock Numbers) for the following reasons:

1. Modified Alternative 3 meets the purpose and need identified in the EA (pp. 8 and 9) while minimizing undue or unintended adverse socioeconomic effects to permittees and their overall livestock operations. The delayed on-dates will affect ranch operational costs (e.g costs associated with supplemental feed and pasture leases) for one of the permittees. By modifying Alternative 3 this adverse affect has been offset by the authorization of additional numbers from what was presented under Alternative 3. Providing a range of permitted numbers (205 -260 cow/calf pair) for the Castle Peak Allotment authorized under a variable Term Grazing Permit, will alleviate income loss from reduced calf sales from having the herd reduced from 300 cow/calf pair to 205, as originally proposed under Alternative 3. Modified Alternative 3 provides management flexibility and is the best compromise to ensure resource protection objectives and economic stability needs of the permittees are balanced.
2. Modified Alternative 3 moves the area towards the desired conditions established in the Forest Plan.
3. Modified Alternative 3 mitigates potential adverse effects. Individual Forest Service sensitive animals and plants may be affected, but these effects are not likely to result in a trend towards Federal listing or a loss in population viability. No federally listed threatened or endangered species would be adversely affected by the proposed action. Cultural resources known to exist within the project area will not be affected by project implementation. This alternative includes all practical means to avoid or minimize environmental harm.

Other Alternatives Considered

In addition to the selected alternative, I considered the two other alternatives described in the EA (pp. 20, 26-28). The EA (p. 28-31) contains a comparison of these alternatives.

Alternative 1 (No Action)

Under Alternative 1 (No Action) no livestock grazing would be authorized within the project area, and no range management actions would be implemented (Forest Service Handbook 2209.13, Ch. 92.31[4]).

I did not select Alternative 1 (No Action) for the following reasons:

[4] USDA 2005. Forest Service Handbook R5-2209.13- Chapter 90 Interim Directive, Grazing Permit Administration Handbook –Rangeland Management Decisionmaking, effective September 9, 2005.

1. Alternative 1 does not meet the purpose and need identified in the EA (p. 8 & 9) because Congressional intent allows grazing on suitable lands where grazing is consistent with other multiple use goals and objectives.
2. Alternative 1 does not meet the Forest Plan Direction to manage livestock to utilize forage while avoiding adverse impacts on soil, vegetation, water quality, wildlife, fisheries and riparian zones (SNF LRMP 4-2.12). However, federal regulations require detailed analysis of the No Action Alternative (40 CFR 1502.14).

Alternative 2 (Proposed Action)

Under Alternative 2 grazing would be authorized on the allotments as described under the Proposed Action in the EA (pp. 20-26).

I did not select Alternative 2 for the following reasons:

1. Alternative 2 does not best meet Forest Plan Direction of multiple use goals and objectives to manage livestock to utilize available forage, while minimizing adverse impacts on soil, vegetation, water quality, wildlife habitat, fisheries and riparian zones (SNF LRMP 4-2.12).
2. Alternative 2 does not move the area towards desired conditions (primarily soil and vegetation conditions) established in the Forest Plan, as rapidly as Modified Alternative 3
3. Alternative 2 has a greater risk of weed introduction and spread of existing infestations than Modified Alternative 3.

2. Public Involvement

The Forest Service first listed the Castle Peak and Long Ridge allotments project in the October 2007 issue of the Sierra National Forest Schedule of Proposed Actions (SOPA). The Forest distributes the SOPA to interested parties and it is available on the internet at http:// www.fs.fed.us/r5/sierra/projects.

On May 19, 2008 the Forest sent a scoping letter to individuals, permittees, organizations, agencies, and Tribes interested in the grazing program. A public notice regarding the initiation of scoping on the proposal was printed in the Fresno Bee on May 23, 2008. Forest staff met with the permittees to discuss the proposed action and alternatives. In addition, as part of the public involvement process, the agency met with property owners who own land adjacent to the project area to further discuss the proposal and their concerns on June 30, 2008 and in the field on July 29, 2008. Seventeen interested parties submitted letters, e-mails and/or verbal comments. The Forest considered and responded to each (see project record) and the responses to these comments are addressed in the EA on pp. 16-19 & 62-64. Using the comments received during the scoping period, the interdisciplinary team identified the issues presented in the EA (pp. 16-19).

A legal notice, announcing the 30-day Opportunity to Comment on the EA appeared in the Fresno Bee on July 17, 2009. The Forest mailed copies of the EA to those parties who had previously expressed interest in the project. The 30-day comment period ended on August 17, 2009. In response to the Forest's request for comments, two individual letters were submitted by interested parties with 35 specific comments. The Forest considered and responded to each comment (see project record). The response to these comments is documented in Appendix (Response to Comments) of this document.

3. Finding of No Significant Impact

After considering the environmental effects described in the EA (p. 32-58), I determined that these actions will not have a significant effect on the quality of the human environment, considering the context and intensity of impacts (40 CFR 1508.27); therefore, an environmental impact statement will not be prepared. I incorporate, by reference, the EA and project record, in making this determination. I base this finding on the following.

Context

The nature and interest of this project is local and site specific to the Sierra National Forest and interested parties, including livestock permittees and local Native American communities. The action alternatives affect a small portion of the Forest's land base. Out of a twelve-month year these allotments would be grazed in the spring to early summer (March – June). The amount of time will depend on the condition of the range and the forage production. In terms of the affected area, the Alternative 3 proposal affects a small portion of the land base over a relatively short time frame with a reduced impact from current management (January – June). Given the context of seasonality and duration of activities, the analyses prepared in support of this EA indicate that Alternative 3 would not pose significant short or long-term effects.

These areas have been grazed since the late 1800's. Current permittees include a local family and a limited liability corporation that have held these permits for many years. The Rangeland Management Specialist has discussed the proposed action and alternatives with the permittees to ensure their understanding of the actions and conditions being proposed. There would be an economic effect to the permittees due to shortened season primarily but no significant effect to the permittees either in the short-term or long-term that would inhibit their ability to execute the permit. Alternative 3 will provide for improved long-term management of the natural and cultural resources in addition to sustaining livestock grazing.

Intensity

I considered the following ten elements of impact intensity (40 CFR 1508.27b) in assessing the potential significance of project effects.

1. My finding of no significant environmental effects is not biased by the beneficial effects of the action. All practical means to avoid or minimize environmental harm have been adopted (EA pp. 32-33). Biological Evaluations (BEs), Biological Assessments (BAs) and specialist reports prepared for this project are available in the project record. Those documents provide the basis for the following determinations.

   Range

   - Modified Alternative 3 authorizes grazing in a manner that will best meet or trend these allotments towards desired condition while meeting the purpose and need of providing livestock forage, opportunities for economic diversity and promoting stability for communities that depend on range resources. Design criteria and mitigations described under this alternative apply to areas that do not meet or trend towards desired conditions or are intended to ensure continued meeting of desired condition where this is the case.

Hydrology

- Impacted springs would be protected, functional-at-risk channels may recover, but factors outside control of management are contributing to the FAR rating.
- Summer season of use would not occur in Castle Peak and effects to water sources and riparian areas would be minimized.
- Delayed on-date (March 1) for both allotments from current management would better protect soil and vegetation from excessive effects of livestock use. Overall effects to watershed resources would decrease from current management and conditions would improve.

Aquatics

- Modified Alternative 3 may affect, but is not likely to adversely affect the California red-legged frog. The Forest Service consulted with the U.S. Fish and Wildlife Service regarding this species and the U.S. Fish and Wildlife Service concurred with the above determination.
- For foothill yellow-legged frog, western pond turtle, and hardhead minnow, Modified Alternative 3 may affect individuals but is not likely to lead to federal listing or loss of viability.

Wildlife

- Modified Alternative 3 will have no effect on Valley elderberry longhorn beetle.
- Modified Alternative 3 may affect individuals, but is not likely to result in a trend toward federal listing or loss of viability for the following Forest Service sensitive species: Peregrine falcon, California spotted owl, Northern goshawk and Western red bat.
- Modified Alternative 3 will not change current habitat, structure and quantity or distribution of Terrestrial Management Indicator Species (MIS).

Botany

- Modified Alternative 3 has a lower risk, compared with Alternative 2 (Proposed Action) of exacerbating the spread and density of existing infestations of weeds, especially tocolote and Italian thistle. There is less risk for any newly introduced weeds to take hold and expand. Alternative 3 allows the most opportunity for native and desirable non-native plant species to reproduce and sustain their populations.
- Modified Alternative 3 will have no effect on Mariposa annual pussypaws and no effect on Carpenteria and provides greater opportunity than Alternative 2 for native annual plant species, such as Madera leptosiphon, to establish and grow.

Recreation

- Modified Alternative 3 minimizes the potential for conflicts through a reduction in numbers and season of use (less time on allotment with less numbers).

Heritage

- Modified Alternative 3 has no direct or indirect impacts to cultural resource sites documented within the allotments.

2. The action has no significant effects on public health and safety, because water quality is suitable for all beneficial uses of water as discussed in the EA (pp. 32-35; 39-40) and in the Hydrologist Specialist Report (project record).

3. The action has no significant effects on unique characteristics of the area, because the proposed activities protect all historic or cultural resources (EA p. 43-44) and no other unique characteristics or ecologically critical areas such as park lands, prime farmlands, wetlands, or wild and scenic rivers (EA p. 38) exist within the project area.
4. The effects on the quality of the human environment are not likely to be highly controversial because of no known scientific controversy over the impacts of the project (EA pp. 38-39).
5. The Sierra National Forest has considerable experience with the types of activities to be implemented. The effects analysis in the EA (pp. 38-39) shows the effects are not uncertain, and do not involve unique or unknown risk.
6. The action is not likely to establish a precedent for future actions with significant effects, because it conforms to all existing Forest Plan direction and is applicable only to the project area (EA p. 39).
7. The cumulative impacts are not significant (EA pp. 39-43).
8. The action will have no significant adverse effect on districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, because the EA (p. 43-44) and the cultural resources report show that the action will not cause loss or destruction of significant scientific, cultural, or historical resources.
9. The Biological Assessment (project record) determined that the action will not adversely affect the Valley elderberry longhorn beetle or the Mariposa annual pussypaws. Consultation with the US Fish and Wildlife Service was not required for these species. The project may affect, but is not likely to adversely affect the California red-legged frog. The Forest Service consulted with the U.S. Fish and Wildlife Service regarding this species and the U.S. Fish and Wildlife Service concurred with the above determination.
10. The action will not violate Federal, State, and local laws or requirements for the protection of the environment (EA p. 49). The EA (p. 8) considered applicable laws and regulations. The action is consistent with the Forest Plan (EA p. 4-7).

4. Findings Required by Other Laws and Regulations

This decision to implement Modified Alternative 3 is consistent with the long term goals and objectives of the Forest Plan and the project conforms to the Forest Plan by incorporating appropriate standards, guidelines and desired conditions (EA pp. 4-7).

5. Implementation Date

If no appeal is filed on this decision, implementation of the decision may begin on, but not before, the fifth business day following the close of the appeal filing period (36 CFR 215.0(a)). When appeals are filed, implementation may occur on, but not before, the 15th business day following the date of the last appeal disposition.

6. Administrative Review or Appeal Opportunities

This decision is subject to appeal pursuant to 36 CFR 215. In accordance with the April 24, 2006 order issued by the U. S. District Court for the Missoula Division of the District of Montana in Case No. CV 03-119-M-DWM, only those individuals and organizations who provided comments during the comment period are eligible to appeal [36 CFR 215.11(a), 1993 version]. Appeals must be filed within 45 days from the publication date of the legal notice in the Fresno Bee. Notices of appeal must meet the specific content requirements of 36 CFR 215.14. An appeal, including attachments, must be filed (regular mail, fax, e-mail, hand-delivery, express delivery, or messenger service) with the appropriate Appeal Deciding Officer [36 CFR 215.8] within 45 days following the publication date of the legal notice. Appeals must be submitted to Edward Cole, Forest Supervisor, USDA Forest Service, 1600 Tollhouse Road, Clovis, CA 93611-3205, (559) 297-0706. Appeals may be submitted by FAX [559-294-4809] or by hand-delivery to the Forest Supervisor's Office, at the address shown above, during normal business hours (Monday-Friday 8:00am to 4:00pm). Electronic appeals, in acceptable [plain text (.txt), rich text (.rtf) or Word (.doc)] formats, may be submitted to: **appeals-pacificsouthwest-sierra@fs.fed.us** with Subject: **Sierra Range**.

The permittees may choose to appeal the Decision Notice under 36 CFR 251, by submitting a written appeal within 45 days after the date of the notification letter for this decision. The notice of appeal must meet the requirements of 36 CFR 251.90 and be addressed to the Appeal Deciding Officer: Edward Cole, Forest Supervisor, USDA Forest Service, 1600 Tollhouse Road, Clovis, CA 93611-3205.

The publication date of the legal notice is the exclusive means for calculating the time period to file an appeal [36 CFR 215.15 (a)]. Those wishing to appeal should not rely upon dates or timeframe information provided by any other source.

7. Contact

For additional information on this project, please contact: Aimee Smith; 57003 Road 225; North Fork, CA 93643; 559-877-2218 ext. 3151.

8. Signature and Date

/s/ David W. Martin
David W. Martin
District Ranger
Bass Lake Ranger District
Sierra National Forest

September 24, 2009
Date

United States
Department of
Agriculture

Forest
Service

July 2009

Environmental Assessment

Castle Peak and Long Ridge Cattle Grazing Allotments

Bass Lake Ranger District, Sierra National Forest
Madera County, California

For Information Contact: Aimee Smith
57003 Road 225, North Fork CA 93643
(559) 877-2218

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SUMMARY

The Sierra National Forest proposes to authorize continued livestock grazing on Castle Peak and Long Ridge allotments while implementing specific standards and guidelines for resource protection. The project is generally located in the northwest and central portions of the Sierra National Forest, adjacent to Redinger and Kerckhoff Reservoirs within the Bass Lake Ranger District, Sierra National Forest, California.
These allotments are located adjacent to the community of North Fork, California (Appendix Map A-1). The legal location for this project is as follows: Castle Peak Allotment: T8S R23E S 21, 26-28, 33-36, T9S R23E S 1-5, 9-12, 14-16, T9S R24E S 31-33, 4-9, 17, 18; Long Ridge Allotment: T9S R22E S 1, 2, 13, 24, T9S R23E S 5-9, 16, 17, 18, 20, 21, 28, 29; Mount Diablo Base Meridian. There are approximately 13,386 acres of national forest system lands within the project area.

There is a need to continue authorized commercial livestock grazing in Forest grazing allotments because:

- The Forest Service is directed by the Code of Federal Regulations (CFR) to meet multiple-use objectives, including making available to qualified livestock operators, forage from National Forest lands that are suitable for grazing (36 CFR 222.2 (c)). These allotments were determined to be suitable for commercial livestock grazing.

- The Forest Service is directed by the Forest Service Manual (FSM 2201.1) to provide livestock forage and contribute to the economic and social well being of people (in this case ranching operations) by providing opportunities for economic diversity and by promoting stability for communities that depend on range resources for their livelihood.

The need to continue authorized commercial livestock grazing must be met in a manner that is consistent with the management direction provided by the Sierra National Forest Land and Resource Management Plan (SNF LRMP) which provides standards and guidelines to help the manager achieve the goals, objectives and desired conditions of the Forest.

The Forest has determined that based on a site specific analysis, the need for commercial livestock grazing in the Long Ridge and Castle Peak allotments is not likely to be met in a manner that is consistent with Forest Plan standards and guidelines by continuing current management. The Forest is, therefore, proposing to implement a changed season of use that is in line with range readiness parameters, as the current livestock on-dates are generally too early for plant phonological growth and soil conditions on a normal year, establish additional designated monitoring areas for monitoring forage utilization and long term conditions, protect several riparian springs from livestock use, construct and/or complete heavy maintenance on rangeland improvements such as fences and corrals within both allotments and develop water to improve livestock distribution.

The Proposed Action would maintain or improve rangeland resource conditions in both allotments while meeting the need for commercial livestock grazing that is consistent with Forest Plan direction.

In addition to the Proposed Action, the Forest fully evaluated the following alternatives:

- Taking no acton. This would result in no authorized grazing in the two allotments (Alternative 1 - No Action Alternative); and
- Continuing to authorize livestock grazing in Castle Peak Alloment with a reduction in currently permitted livestock numbers

Based on the analysis of the alternatives, the responsible official will decide whether or not to continue authorized commercial livestock grazing in either or both the Long Ridge and Castle Peak allotments.

If a decision is made to continue authorized livestock grazing in one or both allotments, the responsible offical will decide where to continue livestock management as described under the Proposed Action or Alternative 3 or under a combination of mangement.

INTRODUCTION

Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into four parts:

- *Introduction:* This section includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- *Comparison of Alternatives, including the Proposed Action:* This section provides a more detailed description of the agency's proposed action as well as alternative methods for achieving the stated purpose. These alternatives were developed based on significant issues raised by the public and other agencies. This discussion also includes possible mitigation measures. Finally, this section provides a summary table of the environmental consequences associated with each alternative.
- *Environmental Consequences:* This section describes the environmental effects of implementing the proposed action and other alternatives. This analysis is organized by elements of intensity used to determine whether the action would or would not have a significant effect on the human environment. Within each section, the affected environment is described first, followed by the effects of the No Action Alternative which provides a baseline for evaluation and comparison of the other alternatives that follow.

- *Agencies and Persons Consulted:* This section provides a list of preparers and agencies consulted during the development of the environmental assessment.
- *Appendices:* The appendices provide more detailed information to support the analyses presented in the environmental assessment.

Background

This Bass Lake Ranger District Range NEPA Project area is comprised of land identified in the Sierra National Forest Land and Resource Management Plan as suitable for grazing. Where consistent with other multiple use goals and objectives, there is congressional intent to allow grazing on suitable lands (*Multiple Use and Sustained Yield Act of 1960, Wilderness Act of 1964, Forest and Rangeland Renewable Resources Planning Act of 1974, Federal Land Management and Policy Act of 1976, National Forest Management Act of 1976*). Where consistent with the goals, objectives, standards and guidelines of the Forest Plan and its amendments, it is Forest Service policy to make forage from lands suitable for grazing available to qualified livestock operators (*FSM 2202.1, FSM 2203.1, 36CFR 222.2 (c)).* The suitability for grazing on the Castle Peak and Long Ridge Grazing allotments has been verified as being appropriate (a Rangeland Suitability Analysis has been included in the project record, and is available upon request). Federal actions such as the authorization of grazing and approval of allotment management plans must be analyzed to determine potential environmental consequences (*National Environmental Policy Act of 1969 (NEPA); Rescission Act of 1995 (P.L.104-19*).

The following documents are part of the project record and include more detailed analyses of project-area resources and are available upon request located at the Bass Lake Ranger District office of the Sierra National Forest in North Fork, California:

- Biological Assessment and Biological Evaluation for Threatened, Endangered and Sensitive (TES) Plant Species within the Castle Peak and Long Ridge allotments by Joanna Clines, Forest Botanist. This document analyzes the impacts of the proposed actions on plants listed on the Pacific Southwest Regional Forester's Sensitive Species List.

- Aquatic Species Biological Assessment and Biological Evaluation Report for the Long Ridge and Castle Peak Grazing Allotments by Philip Strand, Aquatic Biologist. As required by the Endangered Species Act and Forest Service Manual direction, this document analyzes the effects of the proposed actions on federally listed species and Forest Service sensitive species.

- Biological Assessment and Biological Evaluation for Terrestrial Species for the Long Ridge and Castle Peak Allotments by Kevin Williams, District Wildlife Biologist. As required by Forest Service Manual direction, this Biological Evaluation documents the analysis of impacts on animals listed on the Pacific Southwest Regional Forester's Sensitive Species List.

- Aquatic Wildlife Management Indicator Species (MIS) Report – Long Ridge and Castle Peak Grazing Allotments by Philip Strand, Aquatic Biologist. The MIS

Report documents the analysis of effects of proposed actions on Sierra National Forest MIS.

- Project Terrestrial MIS Report – Long Ridge and Castle Peak Grazing Allotments by Anae Otto, Assistant Biologist. The MIS Report documents the analysis of effects of proposed actions on Sierra National Forest MIS.
- 2008 Bass Lake Ranger District Grazing Allotments: Long Ridge and Castle Peak Allotments - Hydrology Specialist Report by Andy Stone, District Hydrologist. The Hydrology Report describes existing conditions and environmental effects to hydrological resources.
- *Long Ridge Allotment Term Grazing Permit Archeological Reconnaissance Report #R2008051551051* and the *Castle Peak Allotment Term Grazing Permit Archeological Reconnaissance Report #R2008051551051* by Marie Mogge, Archaeologist. These cultural resource reports describe surveys conducted, existing conditions, and recommendations for the proposed action.
- Noxious Weed Risk Assessment for the Castle Peak and Long Ridge allotments by Joanna Clines, Forest Botanist. Noxious weed species that are present in the project area are identified and assessed as to their risk of spread from the proposed action.
- Range Specialist Report for the Castle Peak and Long Ridge Grazing Allotments by Aimee Smith, District Rangeland Management Specialist. This report discusses the existing condition in the project area and lays the foundation for actions proposed to move conditions toward desired condition where needed. This report also documents the verification that lands within the allotments are capable and suitable for livestock grazing.

Forest Plan Management Areas and their Direction

The project is within Management Areas 1, 2, 4 and 5 which emphasize developed and dispersed recreation, timber production, and wildlife and range management activities. These land allocations incorporate standards and guidelines from the Sierra National Forest Land and Resource Management Plan (LRMP) (USDA Forest Service 1991), including amendments; *An Environmental Assessment of Utilization Standards for Determining Proper Use of Available Forage for Commercial Livestock* (USDA Forest Service 1995), and the *Sierra Nevada Forest Plan Amendment* (SNFPA) (USDA Forest Service 2001, 2004;). The goal of protecting and restoring desired conditions (Table 3) is applied through the following standards applicable to the proposed grazing management within the project area:

- To protect hardwood regeneration in grazing allotments, allow livestock browse on no more than 20 percent of annual growth of hardwood seedlings and advanced regeneration. Modify grazing plans if hardwood regeneration and recruitment needs are not being met (2004 SNFPA ROD S&G #50, Page 55).

- Grazing utilization in annual grasslands will maintain a minimum of 60 percent cover. Where grasslands are in satisfactory condition and annual precipitation is greater than 10 inches, manage for 700 pounds residual dry matter (RDM) per acre. Where grasslands are in satisfactory condition and annual precipitation is less than 10 inches, manage for 400 pounds RDM per acre. Where grasslands are in unsatisfactory condition and annual precipitation is greater than 10 inches, manage for 1,000 pounds RDM per acre; manage for 700 pounds RDM per acre where grasslands are in unsatisfactory condition and precipitation is less than 10 inches. Adjust these standards, as needed, based on grassland condition (2004 SNFPA ROD S&G #51, Page 56).

- Annual grasslands & oak woodlands with > 10 inches annual precipitation and ≤15% slope (1,000-2,500 feet elevation) in satisfactory condition managed for 700 lbs/acre Residual Dry Matter and 1,000 lbs/acre Residual Dry Matter for rangeland in unsatisfactory condition (2004 SNFPA ROD S&G #51, Page 56; 1995 SNF LRMP Amendment: 2.2.4, Page 2-15).

- Annual grasslands & oak woodlands with > 10 inches annual precipitation and >15% slope (>2,500 feet elevation) in satisfactory condition managed for 1,000 lbs/acre Residual Dry Matter and 1,200 lbs/acre Residual Dry Matter for rangeland in unsatisfactory condition(2004 SNFPA ROD S&G #51, Page 56, 1995 SNF LRMP Amendment: 2.2.4, Page 2-11) ; and

- Prevent disturbance to streambanks and natural lake and pond shorelines caused by resource activities (for example, livestock, off-highway vehicles, and dispersed recreation) from exceeding 20 percent of stream reach or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots. This standard does not apply to developed recreation sites, sites authorized under Special Use Permits and designated off-highway vehicle routes (2004 SNFPA ROD S&G #103); and

- Assess the hydrologic function of meadow habitats and other special aquatic features during range management analysis. Ensure that characteristics of special features are, at a minimum, at Proper Functioning Condition, as defined in the appropriate Technical Reports (or their successor publications): (1) “Process for Assessing PFC” TR 1737-9 (1993), “PFC for Lotic Areas” USDI TR 1737-15 (1998) or (2) “PFC for Lentic Riparian-Wetland Areas” USDI TR 1737-11 (1994) (2004 SNFPA ROD S&G #117); and

- Locate new facilities for gathering livestock and pack stock outside of meadows and riparian conservation areas. During project-level planning, evaluate and consider relocating existing livestock facilities outside of meadows and riparian areas. Prior to re-issuing grazing permits, assess the compatibility of livestock management facilities located in riparian conservation areas with riparian conservation objectives (2004 SNFPA ROD S&G #119); and

- Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from grazing herbaceous vegetation to browsing woody riparian vegetation (2004 SNFPA ROD S&G #121); and

- Maintain soil productivity by implementing Forest Service Regional Soil Standards and Guidelines (FSH 2509.18): limit soil disturbance that can lead to soil loss that will exceed the rate of soil formation, maintain at least 50% soil cover and maintain soil porosity to at least 90% of total porosity found under natural conditions; and

- Implement the following Pacific Southwest Region BMPs applicable to grazing :

Table 2. BMPs applicable to Range Management.

Applicable BMP	How to Apply
Practice 8-1: Range Analysis and Planning	Performing the interdisciplinary environmental analysis for the NEPA decisions, updating the Allotment Management Plans, and issuing Annual Operating Instructions to the permittees.
Practice 8-2: Grazing Permit System	Administration of the grazing permits, including range readiness evaluations, stock checks for numbers and period of use, and monitoring of standards and guidelines.
Practice 8-3: Rangeland Improvements	Implement streambank stabilization, seeding / planting, or water source development projects as determined necessary, when problems cannot be best addressed through BMP 8-2.

FOREST PLAN DESIRED CONDITIONS FOR RANGE MANAGEMENT

Desired conditions for rangelands are summarized in Table 3.

Table 3. Desired conditions by vegetation community type.

Vegetation Community Type	Desired Future Condition
Annual Grassland (Uplands)	Rangelands are to be in satisfactory condition and all grazing activities occurring on the Forest would have management strategies which achieve or maintain rangelands in satisfactory condition. Satisfactory rangeland condition for annual grasslands is defined in the Forest Plan as having a livestock forage condition rating of good or excellent or a resource value rating of greater than or equal to 76% similarity to desired condition, and stable soils with continuous vegetative cover and rooting throughout available profile. (1995 SNF LRMP Amendment: 2.2.4, Page 2-11).
Riparian Conservation Areas	Water quality meets the goals of the Clean Water Act and Safe Drinking Water Act; it is fishable, swimmable, and suitable for drinking after normal treatment (2004 SNFPA ROD Page 42). Habitat supports viable populations of native and desired non-native plant, invertebrate and vertebrate riparian and aquatic dependent species. New introductions of invasive species are prevented. Where invasive species are adversely affecting the viability of native species, the appropriate State and Federal wildlife agencies have reduced impacts to native populations (2004 SNFPA ROD Page 42). Ensure that characteristics of special aquatic features are, at a minimum, at Proper Functioning Condition, as defined in the appropriate Technical Reports (or their successor publications): (1) "Process for Assessing PFC" TR 1737-9 (1993), "PFC for Lotic Areas" USDI TR 1737-15 (1998) or (2) "PFC for Lentic Riparian-Wetland Areas" USDI TR 1737-11 (1994); (2004 SNFPA ROD S&G 117, Page 65). Species composition and structural diversity of plant and animal communities in riparian areas, wetlands and meadows provide desired habitat conditions and ecological functions (2004 SNFPA ROD Page 43). The distribution and health of biotic communities in special aquatic habitats (such as springs and seeps) perpetuates their unique functions and biological diversity (2004 SNFPA ROD Page 43). Soils with favorable infiltration characteristics and diverse vegetative cover absorb and filer precipitation and sustain favorable conditions of stream flows (2004 SNFPA ROD Page 43). A diversity of age classes of hardwood shrubs is present and regeneration is occurring (2004 SNFPA ROD Page 43). Streams in meadows, lower elevation grasslands and hardwood ecosystems have vegetation and channel bank conditions that approach historic potential (2004 SNFPA ROD Page 42).

Purpose and Need for Action

This action is needed to provide for healthy ecosystems and make forage available on a sustainable basis for use by livestock. Continued livestock grazing is needed on these allotments at this time for the following reasons:

- Congress intends to allow grazing on suitable lands where it is consistent with other multiple use goals and objectives as authorized through several Congressional Acts (*Organic Administration Act of 1897, Multiple Use Sustained Yield Act of 1960, Wilderness Act of 1964, Forest and Rangeland Renewable Resources Planning Act of 1974, Federal Land Policy and Management Act of 1976, National Forest Management Act of 1976,* and the *Public Rangelands Improvement Act of 1978);* *www.fs.fed.us/rangelands/whoweare/lawsregs.shtml*
- Compliance with the National Environmental Policy Act and P.L. 104 of the 1995 Rescissions Act, as amended. The Rescissions Act requires updated Allotment Management Plans for allotments in the Sierra NF schedule as modified under the terms of the 2004 Omnibus Bill.
- The Forest Plan Environmental Impact Statement identifies suitable rangeland within allotments. An interdisciplinary team has reviewed and verified rangeland suitability for these allotments (Table 1). It is Forest Service policy to allow use of range vegetation and to promote stability for livestock enterprises by making forage available to qualified livestock operators from lands suitable for grazing consistent with land management plans (Forest Service Manual (FSM) 2203.1; 36 CFR 222.2 (c). Suitability is defined as "The appropriateness of applying certain resource management practices to a particular area of land as determined by an analysis of the economic and environmental consequences and alternative use foregone. A unit of land may be suitable for a variety of individual or combined management practices." (Code of Federal Regulations 219.3).

Table 1. National Forest Acres Proposed for Continued Livestock Grazing by Unit.

Allotment	Unit	Suitable Acres	Total Unit Acres*
Castle Peak	Redinger	956	4803
	Castle Peak	529	3957
Long Ridge	Long Ridge	1387	4239
	Horse Pasture	192	193
	Smalley Cove Pasture	154	154
TOTAL			13,386
* Total Unit Acres does not include private land acreage			

- Provide livestock forage and contribute to the economic and social well being of people (in this case ranching operations) by providing opportunities for economic diversity and by promoting stability for communities that depend on range resources for their livelihood (FSM 2201.1).
- Maintaining open space through livestock grazing responds to one of Four Threats to the Health of the Nation's Forests identified by the Chief of the Forest Service (http://www.fs.fed.us/projects/four-threats/).

Existing Rangeland Conditions

Soils in these allotments include the Auberry, Ahwahnee, Chaix, Holland, Coarsegold, and Tollhouse families. Many of these soil map units occur in steep terrain with low forage production, where grazing is unlikely to occur. Soils in the primary and secondary use areas are generally moderately deep to deep and moderately to somewhat excessively drained. They are considered moderately to highly sensitive, which is a measure of the decrease in productivity likely to result from disturbance (USDA 1995). The areas that are susceptible to cattle disturbance are generally swales and also riparian areas, where more concentrated use occurs due to higher forage production, and higher organic and moisture content in the soils make them more sensitive to trampling.

The elevation ranges from approximately 1,000 feet at the San Joaquin River up to approximately 5,000 feet at Lion Point. Streams include Saginaw Creek, Whiskey Creek, Willow Creek and Fish Creek with the San Jaoquin River (Redinger and Kerckhoff Lakes) being the southern boundary for both the Long Ridge and Castle Peak allotments. Private land inholdings exist within both allotments.

Vegetation communities present within the project area consist of annual grasslands, blue oak woodlands, scatttered gray pine, and Sierran chaparral. The project area has a Mediterranean climate with cool, moist winters and warm, dry summers. The annual precipitation is about 33 inches with most of the precipitation falling between November and April with isolated thunderstorms cocuring in the summer months.

For the purpose of this environmental analysis, livestock use patterns were identified based on historical use, discussion with permittees and monitoring information. As a result, primary and secondary use zones were deveoped for the project. Primary use areas ares sites with productive forage where the majority of cattle grazing occurs. Secondary use areas have forage and represent areas of transitory movement by cattle between primary use areas.

Primary forage species utilized by livestock inlcude *Bromus hordaceous* (soft chess), *B. diandrus* (ripgut brome), *Erodium botrys* and *E. cicutarium* (filaree), *Vulpia microstachys* (annual fescue) and a mix of other annual forbs and grasses. Some perennial bunchgrasses are included at the upper elevation ranges of Castle Peak Allotment. Site conditions allow for the production of annual grass forage between 1000 to 5,000 lbs per

acre dry weight per year depending on slope, aspect, soils, canopy cover and seasonal variation in timing and amount of precipitation.

Monitoring and survey data on the Castle Peak and Long Ridge allotments indicates that current conditions are meeting Sierra National Forest Land and Resource Management Plan goals and objectives except where noted in the PURPOSE AND NEED FOR ACTION section of this document.

Table 4. Current permitted use on the Long Ridge and Castle Peak allotments.

Allotment	Pasture	Livestock			Period of Use	
Long Ridge	Long Ridge Horse Pasture	101	cattle	cow/ calf	Early March at Livestock Turnout	Early June at Livestock Gather
Long Ridge	Smalley Cove Pasture	~50	cattle	cow/ calf	Varied mostly fall use	Varied mostly fall use
Long Ridge	All Units	101	cattle	cow/ calf	March 1	June 15
Long Ridge	All Units	40	cattle	cow/ calf	January 1	June 15
Castle Peak	Redinger	100	cattle	cow/ calf	January 1	June 30
Castle Peak	Redinger	100	cattle	cow/ calf	February 1	June 30
Castle Peak	Castle Peak	100	cattle	cow/ calf	March 1	June 30
Castle Peak	DeMasters Private Land*	~95	cattle	cow/ calf	July 1	~Sept 15

* Permittee has historically held a lease for these lands.

Table 5. Forage rating and soil condition for Castle Peak and Long Ridge allotments.

Allotment	Key Area Site	Transect Type	Livestock Forage Rating	Soil Score	Percent Bare Ground	Percent Cover
Castle Peak	Italian Bar	Rooted Frequency	Good	Good	9	91
Long Ridge	Long Ridge	Rooted Frequency	Good	Good	6	94
	Dandy Flat	Rooted Frequency	Fair	Poor	16	84
	Long Ridge Horse Pasture	Rooted Frequency	Good	Good	8	92

The following summary is from the Rangeland Analysis Report which analyzed the

rationale and effectiveness of past management using historical records and more recently collected data.

Castle Peak

The Castle Peak Allotment lies just north of Redinger Lake on the San Joaquin River, about 5 miles east of the town of North Fork, California. Elevation varies from 1,300 feet to 4,970 feet. All areas presently grazed are considered open grassland to scattered brushlands with a dense understory of annual forage species. There are approximately 3,145 acres of private land within the allotment and the permittee has historically leased a parcel for grazing during the summer months. This has been problematic since the unauthorized cattle have drifted off of the private land onto National Forest lands.

Livestock are trucked to private land owned by the permittee on Italian Bar Road (County Road 225) and dispersed throughout the two grazing units (Redinger and Castle Peak). Salting and riding have been used to improve distribution within the allotment. The grazing strategy has been low intensity and the pattern of use has been based on elevation (deferment). Cattle (205 of the 300 pair) are driven to the higher elevation range, Haskell Allotment, starting in late June.

While early records are not too reliable, it is safe to assume that the Castle Peak Allotment history was similar to that of other allotments in the Sierra Nevada.
The area was probably grazed by sheep during the 1870s and 1880s and changed to cattle by the early 1900s. Heavy, year round use by cattle occurred during the 1920s and then tapered off during the drought years of the 1930s. Use increased greatly during the war years of the 1940s and use was heavy into the 1950s before leveling off.

In 1984, an environmental assessment was conducted to authorize additional stock on the allotment. This decision increased the permitted numbers from 220 pair from March 16 to June 30 to 300 pair progressively turned out from January 1 through March 1 (100 pair on the 1st of each month January through March) with an off-date of June 30. The rationale for this increase was the future brush control and type conversion and seeding, which was never implemented. Livestock were dispersed to utilize the Redinger Unit adjacent to Redinger Lake, and then allowed to drift up to the Castle Peak Unit toward the northeastern portion of the allotment.

This management strategy does not reflect the more recent actual use (since 2000), since on dates have been delayed to February for the most part due to range readiness concerns.

Annual utilization monitoring within the Castle Peak Allotment indicates that forage utilization standards have been met (Appendix C). Long term condition monitoring at this same location shows the allotment to have a forage condition rating of good and a good soil condition rating which meets desired conditions of having a forage rating of good or excellent (Table 5). Percent cover is greater than ninety percent which meets desired conditions of sixty percent minimum cover in annual grasslands. Saginaw Creek, an intermittent tributary to Redinger Lake (Appendix A-3) was assessed for riparian condition and is considered to be at properly functioning condition.

There is a need for change in the permitted on-dates for the Castle Peak allotment based on concerns with range readiness (Table 4).

Long Ridge

The Long Ridge Allotment lies just north and east of Kerckhoff Lake on the San Joaquin River, about 5 miles south of the town of North Fork, California. Elevation varies from 1,000 feet to 2,400 feet. All areas presently grazed are considered open grassland to scattered brushlands with a dense understory of annual forage species. There are approximately 1,964 acres of private land within the allotment

While early records are not too reliable, it is safe to assume that the Long Ridge Allotment history was similar to that of other allotments in the Sierras. Use was heavy in the 1920s, decreased through the drought years of the 1930s, increased greatly during the 1940s and leveled off in the early 1950s (post war). During the 1970s use average 173 cow calf pair (33 pair temporary) from March 16 through June 16. Since that time, a January 1 on-date was authorized for 40 cow calf pair, however, the authorization for the temporary numbers was discontinued. The remaining 100 pair were turned out March 1. This management has continued to the present (Table 4).

Forty cow/pair are driven from adjacent private land to the Long Ridge Allotment on or around January 1. The majority of the livestock (101 cow/calf pair) are trucked to the Long Ridge Corral on or around March 1 and dispersed throughout the allotment. Cattle are kept dispersed through riding and salting by the permittee. The 101 pair herd is gathered into Long Ridge Corral in late June and then trucked to the Central Camp allotment for summer use. The remaining 40 pair are driven to Smalley Cove Pasture and are either gathered at that time or remain throughout the summer. The Smalley Cove Pasture has had chronic trespass of unauthorized livestock from adjacent private and PG&E leased lands due to poor fence infrastructure, primarily. This trespass and uncontrolled use has made quantifying the current level of use difficult.

The need for change stems from the range readiness concern with the January 1 on-date and overall allotment management issues due to having differing on dates for the permitted herds. There is also a need for change in the Smalley Cove Pasture management as desired stream channel conditions are not being met at Fish Creek.

Utilization monitoring at three key area locations within Long Ridge Allotment indicates that utilization standards have been met in most years (Appendix A-4; Appendix C). However, there have been several seasons within the last ten years where allowable use exceeded standards at Dandy Flat and the Long Ridge Horse Pasture. Long term condition monitoring indicates that the allotment has a forage condition rating of good with a good soil condition rating for all key areas with the exception of Dandy Flat key area, which has fair forage rating and a poor soil condition rating (Table 5). The forage and soil rating in Dandy Flat do not meet desired conditions. The overall vegetative cover meets standards for all key areas, however, Dandy Flat has a high bare soil rating.

Several riparian areas were assessed within the Long Ridge Allotment (Appendix A-5). Fish Creek is a tributary to Kerckhoff Lake, which creates an upstream backwater effect on the channel within the Smalley Cove Pasture. Some bank incision was noted and the stream reach assessed was considered functional at risk with no apparent trend. Trespass use by livestock owned by adjacent landowners (e.g cattle and horses) has been a chronic

problem in this area (documented since the 1970s) and has contributed to the degraded conditions. Activities on private land upstream may be impacting or contributing to degraded watershed conditions, as evidenced by the amount of sediment observed during the field inspection of the channel. An unnamed tributary to Kerckhoff Lake was assessed and it too had excessive sediment and scoured areas. This reach was considered functional at risk with an upward trend. However, this channel was recently impacted by a flume failure at PG&Es Ditch #1, which diverts water to Corrine Lake. The failure brought water and sediment down through this channel causing further disturbance to the reach making the trend appear downward. Willow Creek which forms the boundary between the Long Ridge and Castle Peak Allotments was assessed and is consider properly functioning, even though hydropower flow regulations have altered the system ecologically. Several spring locations in the Horseshoe Bend area and County Road 230 are being impacted by livestock and will be protected under the proposed action (Table 9; Appendices A-4 & A-6).

The purpose for the proposed action is to continue to permit livestock grazing on all or portions of the project area and to implement an adaptive management system that will move resource conditions from the existing conditions toward the desired conditions in a manner that is timely and consistent with LRMP objectives, standards and guidelines. The purpose of the action is to authorize livestock grazing in manner consistent with the Forest Plan, including its amendments, and to provide long term management direction on grazing through Allotment Management Plans (AMPs) on two allotments: Castle Peak and Long Ridge.

The site-specific need for the proposed action is based on knowing that a change in management needs to occur. This need for a change in management is identified by comparing what currently exists on the landscape in these annual grasslands to specific descriptions of what should exist in those different community types across the project area. There is a need for change from current management, as some specific areas within the project area may not be meeting or moving toward desired conditions in an acceptable timeframe. The need for action is created by the disparity between what is present (existing condition) and what is wanted. The specific action needs for those areas which are not meeting or moving toward desired conditions in an acceptable timeframe are summarized in Table 9.

Authorization of livestock grazing and management in an adaptive manner is appropriate in the project area because:

- Where consistent with other multiple use goals and objectives there is Congressional intent to allow grazing on suitable lands. *(Multiple Use Sustained Yield Act of 1960, Wilderness Act of 1964, Forest and Rangeland Renewable Resources Planning Act of 1974, Federal Land Policy and Management Act of 1976, National Forest Management Act of 1976)*
- The allotments contain lands identified as suitable for domestic livestock grazing in the LRMP, as amended, and continued domestic livestock grazing is consistent with the goals, objectives, standards, and guidelines of the Forest Plan (LRMP pages 4.2: 4.2.5, 4.2.11; 4.3: 4.3.8-10, 4.3.14, 4.3.18; 4.4: 4.4.1,4.4.4-13, 4.4.15-

16;4.5:4.5.2.5-7, 4.5.2.11, 4.5.2.11, 4.5.2.15, 4.5.2.18, 4.5.2.27, 4.8: 4.8.1, 4.8.4-5, 4.8.12; and Sierra Nevada Forest Plan Amendment (2001)-Appendix K-1-4.

- It is Forest Service policy to make forage available to qualified livestock operators from lands suitable for grazing consistent with land management plans *(FSM 2203.1; 36 CFR 222.2 (c)).*
- It is Forest Service policy to continue contributions to the economic and social well being of people by providing opportunities for economic diversity and by promoting stability for communities that depend on range resources for their livelihood *(FSM 2202.1).*
- Improvement is needed of forage and soil conditions in the Long Ridge and Dandy Flat key areas (See Appendix A; Map X, Site X) of the Long Ridge Allotment and in the Italian Bar key are in the Castle Peak Allotment. Past livestock use and concentration in this area has exposed bare soil. Desired Condition: Maintain or move toward a livestock forage and soil condition rating of good or excellent (1995 SNF LRMP Amendment: 2.2.4, Page 2-11).
- Improvement of soil and riparian vegetation conditions at Teddy's Spring and Horseshoe Bend Spring (Appendix A-4) in the Long Ridge Allotment is needed. These spring/seep areas are being excessively impacted and need to be protected from livestock use. Desired Condition: The distribution and health of biotic communities in special aquatic habitats (such as springs and seeps) perpetuates their unique functions and biological diversity (2004 SNFPA ROD Page 43).
- Improved health of riparian vegetation and stream channel conditions along Fish Creek (Appendix A-5) in the Smalley Cove Pasture and the unnamed tributary to Kerckhoff in Long Ridge Allotment. Grazing impacts have resulted in degraded riparian conditions in these channels. Desired Condition: Hydrologic function of (meadow habitats and other special aquatic features) are at a minimum at Proper Functioning Condition (2004 SNFPA ROD, Page 65).
- Develop livestock water at Coyote Spring in Long Ridge Allotment. Desired Condition: Improved livestock distribution in the Horseshoe Bend area (Appendix A-6).
- Adjustments to the on-dates of the Long Ridge and Castle Peak allotments. Current on-dates do not ensure range readiness in a year of normal or average precipitation and temperatures. Castle Peak and Long Ridge allotments would have on-dates consistent with management of remaining annual grassland ranges on the Forest. Desired Condition: Vegetation (principle forage plants) and soils would be considered ready when the phenological state or growth of vegetation meets standards and soils are firm enough in the general area so that livestock will not cause trampling damage to soil and vegetation (Range Specialist Report 2009).
- Remove existing Long Ridge Horse Pasture western boundary fence and corral as these range improvements are located on private land. Construct new corral and boundary fence in the Long Ridge Allotment (Appendix A-4). Desired condition: Ensure that range improvement design and location reflects forest land and

resource management plan direction. Include range improvement plans and specifications in allotment management plans (FSM 2240.3). The authority for range improvements on National Forest System lands is in 36 CFR 222.1, 36 CFR 222.9, and 36 CFR 222.10.

Proposed Action

This section briefly summarizes the action proposed by the Forest Service to meet the purpose and need. It is described in detail in the Alternatives Section of this document. The proposed action is to authorize grazing on the Castle Peak and Long Ridge allotments implementing the following management:

1. To ensure that desired vegetative and soil conditions are maintained, the Forest Service proposes to change the livestock on-dates for the Castle Peak and Long Ridge allotments from January 1st to an on-date of March 1st. The off-date for the majority of the livestock permitted in the Castle Peak Allotment would be June 30th. A remaining 40 cow/calf pair would remain in the allotment until September 15th. The off-date for Long Ridge allotment would be June 15th; and
2. To improve vegetative and soil conditions at Teddy's Spring (Appendix A-4) in Long Ridge allotment, the Forest Service proposes to construct a 20 foot by 10 foot barb wire exclosure fence around the perimeter of the spring. Livestock use would be prohibited within the fenced exclosure to protect the spring head; and
3. To improve vegetative and soil conditions at Horseshoe Bend Trail Spring (Appendix A-6) the Forest Service proposes to construct a 50 foot by 20 foot barb wire exclosure fence around the perimeter of the spring and seep area adjacent to the Horseshoe Bend system trail. Livestock use would be prohibited within the fenced exclosure to protect the spring head until conditions improve; and
4. To improve livestock distribution in the Horseshoe Bend area of the Long Ridge Allotment the Forest Service proposes to develop livestock water at Coyote Spring (Appendix A-6).
5. To ensure compliance with National Forest land allocation, The Forest Service proposes removal of all materials that make up the existing Long Ridge Corral from the current location, which is located on private land (Appendix A-4). A new pipe corral with livestock sorting pens and a chute would be built immediately adjacent to the current site on National Forest land and would connect to the existing Long Ridge Horse Pasture fence. Permitted livestock would be trucked to this corral at the livestock turnout date each season and gathered from this location as well (Table 8). The western boundary of the horse pasture/gather pasture fence would be relocated to Forest Service land, approximately 200 feet east of the existing location, which was also mistakenly built on private land decades ago; and
6. To facilitate livestock handling and management in the Long Ridge Allotment, a holding field with a pipe corral and holding pens would be constructed at the

junction of Southern California Edison Powerhouse #4 Road and County Road 235 (Appendix A-5); and

7. The Smalley Cove Pasture (Appendix A-5) incorporates Pacific Gas and Electric (PGE) lands under lease by current permittee within Long Ridge Allotment. The proposed use of this pasture would be for livestock gathering and the existing corral would be reconstructed to standard (Table 8).

Decision Framework

Given the purpose and need, the deciding official, Bass Lake District Ranger (David W. Martin), is the responsible official who will decide whether or not to continue to authorize grazing on the two allotments and if so, under what terms and conditions so as to meet or move toward the Forest Plan's goals, objectives, and desired conditions. The decision to be made is whether to authorize livestock use in the Castle Peak and Long Ridge Allotments as proposed above, whether to authorize livestock use based on an alternative that better resolves conflicts, or not to authorize livestock use in these allotments.

The decision to authorize livestock grazing within the project area is based on the comparison of existing and desired conditions from existing resource condition data derived from the interdisciplinary assessments of the project area. Any new information provided through scoping would be taken into consideration for this proposal and would determine what type of environmental documentation is needed. The decision(s) would be implemented through issuance of Term Grazing Permits and Allotment Management Plans for authorized grazing in the Castle Peak and Long Ridge allotments.

Public Involvement

The proposal was listed in the Schedule of Proposed Actions on October 2007, January 2008, April 2008 and July 2008. The proposal was provided to the public and other agencies for comment during scoping through a detailed letter sent out on May 19, 2008. A public notice regarding the initiation of scoping on the proposal was printed in the Fresno Bee on May 23, 2008. In addition, as part of the public involvement process, the agency met with property owners who own land adjacent to the Castle Peak Allotment to further discuss the proposal on June 30, 2008 and in the field on July 29, 2008. Notes taken from these meetings are part of the project record.

Using the comments from the public and other agencies (see *Issues* section), the interdisciplinary team developed a list of issues to address.

Issues

The Forest Service separated the issues into two groups: significant and non-significant issues. Significant issues were defined as those directly or indirectly caused by implementing the proposed action. Non-significant issues were identified as those: 1) outside the scope of the proposed action; 2) already decided by law, regulation, Forest

Plan, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations require this delineation in Sec. 1501.7, "…identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)…" A list of non-significant issues and reasons regarding their categorization as non-significant may be found at Appendix B in the project record.

As for significant issues, the Forest Service identified 6 topics raised during scoping. These issues include:
Issue #1: *Livestock grazing may result in increased levels of coliform bacteria in streams resulting in potential significant impact to human health.*

Streambank disturbance standards and guidelines will limit the quantity of fecal pathogens entering surface waters. Desired conditions as described in the Forest Plan, as amended, are that water quality meets the goals of the Clean Water Act and Safe Drinking Water Act; it is fishable, swimmable, and suitable for drinking after normal treatment (Table 3; 2004 SNFPA ROD Page 42;). This issue is also addressed by the "No Action" alternative.

Issue #2: *Grazing would cause impacts to recreationists due to polluted water, presence, odor, urine and feces of domestic cattle, and unnatural appearance of grazed areas in these allotments.*

This issue is addressed through implementation of standards and guidelines and best management practices (BMPs) under the Proposed Action and Alternative 3. This issue is also addressed by the "No Action" alternative. The indicator used to measure this effect will be the reduction in authorized head months (number of authorized cow calf pairs multiplied by the number of months in the grazing season).

Issue #3*: Promoting the extension of the season leaving 50 cow/calf pair in Castle Peak until Sept 15 degrades meadows and grassland area in the northern portion of the allotment (Castle Peak Unit). Cattle damage Ponderosa pines by rubbing against them to keep flies off etc. from this extended season. Extended season in Castle Peak would have an overall negative effect on the ecology.*

Although the "No Action" alternative partially addresses this concern, Alternative 3 was developed that addresses only spring use (no use past June 30) for the Castle Peak allotment. The indicator used to measure this effect will be the reduction in authorized head months (number of authorized cow calf pairs multiplied by the number of months in the grazing season).

Issue #4: *The USFS should examine how the proposed project may increase the spread of noxious weeds in the project area.*

A noxious weed assessment was conducted as part of the analysis for all alternatives that addresses the presence of weeds and potential for spread within the project area.

Issue #5: *The USFS should carefully consider other reduced-grazing alternatives that would allow for continued historical usage of the allotments by permittees, but would better protect at-risk wildlife species, benefit recreation, enhance water quality.*

The Forest Service proposes to implement SNFPA (2004) standards and guidelines for grazing in Forest Service sensitive species habitat including Best Management Practices (BMPs). An alternative (Alternative 3) was developed that addresses continued, but reduced grazing from the proposed action. The indicator used to measure this effect will be the reduction in authorized head months (number of authorized cow calf pairs multiplied by the number of months in the grazing season).

Issue #6: *Current rules allow for grazing are from January 1st through June 30th, you are proposing to change this to March 1st through September 15th. But first, historically our experience has been that even the 6 month period currently allowed has not been enforced. This area is very dry, especially in the summer months through October or November, and we believe that the significant decrease in water production we've observed over the past years has at least been impacted by grazing practices.*

The Forest Service intends to administer and enforce the terms and conditions of the grazing permits. The change in water production is conjectural and not supported by scientific or factual evidence. Spring behavior is complex and tied into local and regional groundwater flow regimes and climate. Reduction or change in spring discharge (flow) can be correlated to drought and lack of groundwater recharge, ground water drawdown from local wells and even earthquakes. Most springs and groundwater in the Sierra flow through fractured bedrock aquifers. As such, granite outcrop or coarse decomposed granite is typical of the substrate material where most springs occur. Thus compaction and permanent "sealing" of the spring by livestock is very unlikely. However, the No Action and Alternative 3 address the concerns with the originally proposed summer use. The indicator used to measure this effect will be the reduction in authorized head months (number of authorized cow calf pairs multiplied by the number of months in the grazing season).

Issue # 7: *Your proposal about increasing the period of time cattle can graze in several areas including the Castle Peak allotment . It refers to the private lease arrangement within the allotment but since their property is surrounded by neighbors who can't afford to fence the cattle out, we're all directly impacted by your decision. Most available water sources on public (Forest Service) land dry up by June 30th and cattle gravitate to the private parcels in search of food and water. The Castle Peak area is very dry, especially in the summer months and a decrease in water production has been observed over the past years as well as overuse of forage when the livestock are left in the area after July 1st.*

Private land within the allotment boundary falls within county lands devoted chiefly to grazing (open range) under county ordinance Madera County Ordinance 6.24.010 and land owners have responsibility to fence out unwanted Forest

Service permitted cattle. The Lions Point private parcels have been included within the current Castle Peak Allotment boundary and this proposal does not alter that fact.

Alternative 3 was developed to analyze reduced livestock numbers (and reduced head months) in the Castle Peak Allotment in response to concerns with livestock distribution, forage and livestock water source availability during the summer months on Forest Service land within the allotment brought forth during scoping.

Issue #8: *The USFS should also take a hard look at ways to minimize impacts to Federally protected species and their habitat. One option we recommend is exploring ways to reduce the number of head as well as the window of use on the allotments. Central Sierra Audubon Society.*

Effects were analyzed and the project will have no effect on federally listed threatened Valley elderberry longhorn beetle and Annual Mariposa pussypaws and may effect but is unlikely to adversely affect California red legged frog. The proposed action and Alternative 3 provide standards and guidelines to protect species and their habitats in all allotments and reduces the overall season of use and livestock numbers (head months) in Long Ridge and Castle Peak allotments from current management (Tables 4 & 8). The indicator used to measure this effect will be the reduction in authorized head months (number of authorized cow calf pairs multiplied by the number of months in the grazing season).

Issue #9: *It can't be disputed that uncontrolled grazing results in overgrazing, in that plants are eaten down to less than optimal height resulting in degraded root system, a decrease in organic matter in the soil, crusting, compaction, decreased water infiltration, absorption and retention, and a degradation of sensitive local water sources. In our area those sources include springs, ponds and Saginaw Creek. Ultimately, overgrazing results in less oxygen and more carbon in the air because of less carbon sequestration.*

The Forest Service recognizes the risk of improper grazing management. Both the proposed action and Alternative 3 address the grazing utilization concerns through applying utilization standards and guidelines. Under both action alternatives, additional monitoring benchmarks would be established in the Sheep Camp and Saginaw Creek areas to better monitor utilization levels in the Castle Peak Allotment. The indicator used to measure this effect will be the reduction in authorized head months (number of authorized cow calf pairs multiplied by the number of months in the grazing season).

ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter describes and compares the alternatives considered for the project. It includes a description and map of each alternative considered. This section also presents the alternatives in comparative form, sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker. Some of the information used to compare the alternatives is based upon the design of the alternative and some of the information is based upon the environmental, social and economic effects of implementing each alternative.

Alternatives

In addition to the proposed action, the Forest Service also evaluated the following alternatives:

Alternative 1 – No Action

The no action alternative for NEPA decisions on grazing authorizations has been defined by the Forest Service as no grazing (FSH 2209.13, Section 92.31). Under this alternative, term grazing permits would be cancelled. Cancellation of term permits would follow direction in Forest Service Manual (FSM) 2231.62d, Forest Service Handbook (FSH) 2209.13, Chapter 10 Section 16.24, and Part 2 item 11b of the term permit. Improvements described under the proposed action would not be necessary. Structures related to grazing, such as water troughs, corrals and fences, would be removed if and when feasible. This alternative to close the Long Ridge and Castle Peak allotments to livestock use would require a non-significant amendment to the Sierra National Forest LRMP.

Alternative 2 - The Proposed Action

The proposed action is not current management (Table 8). It addresses the need for change in the current livestock management of both the Long Ridge and Castle Peak allotments (Table 9). The proposed action would authorize livestock grazing on the Castle Peak and Long Ridge allotments with revisions to the term grazing permits and corresponding Allotment Management Plans and would incorporate the following site specific changes in management:

Table 8. Proposed Action grazing season (season of use) and livestock numbers for Castle Peak and Long Ridge allotments.

Allotment	Pasture	Livestock			Period of Use	
Long Ridge	Long Ridge Horse Pasture	~100	cattle	cow/ calf	Early March at Livestock Turnout	Early June at Livestock Gather
Long Ridge	Smalley Cove Pasture	50	cattle	cow/ calf	June 1	June 30
Long Ridge	All Units	125	cattle	cow/ calf	March 1	June 15
Long Ridge	All Units	40	cattle	cow/ calf	March 1	June 15
Castle Peak	Redinger	200	cattle	cow/ calf	March 1	June 30
Castle Peak	Castle Peak	100	cattle	cow/ calf	March 1	June 30
Castle Peak	All Units	40	cattle	cow/ calf	July 1	Sept 15

Castle Peak Allotment:

Under this proposal, the authorized season of use from current management would be March 1 through June 30 with 300 cow/calf pair. This proposed reduction in head months (-292 HMs) gained from the change in the on-date would be off-set by authorizing 40 cow/calf pair (101 HMs) to graze the allotment from July 1st through September 15th. A private land parcel within the Castle Peak Unit would be leased by the permittee. Several additional designated monitoring locations would be established within the Redinger Unit (Redinger and Sheep Camp) for annual and long term monitoring (Table 7; Appendix A-2 and A-3). Under this proposal, the existing Timberline Corral at Saginaw Creek (Appendix A-3) would be reconstructed to standard with pipe material at the existing location.

Long Ridge Allotment:

Under this proposal, the authorized season of use from current management would be March 1 through June 15 with 165 cow/calf pair. The reduction in head months (-79 HMs) gained from the change in the season of use would be off-set by authorizing an additional 25 cow/calf pair (84 HMs) to graze in the allotment during the proposed season of use. A new corral would be constructed on adjacent Forest Service land and the existing corral materials would be removed. The fenceline that makes the western boundary for the pasture at Long Ridge would be reconstructed on the Forest boundary to the east and the exisitng fenceline would be removed. The proposed livestock use for Smalley Cove pasture would authorize up to 50 cow/calf pair for the month of June. Construction of a new 0.5 acre wire livestock holding trap is proposed at the junction of Country Road 235 and the entrance to Southern California Edison Powerhouse #4. This field would be used to gather livestock at the end of the permitted season.

Table 9. Need for management change and proposed action description.

Allotment	Need for Change	Proposed Action Description
Castle Peak	Range readiness and livestock forage rating	Change season of use from January 1 through June 30 to March 1 through June 30 to address range readiness concerns
	Season of use	Authorize 40 cow/calf pair to graze in Castle Peak allotment (in conjunction with privately leased land) from July 1 through September 15 based on overall reduction of HMs from shortened season
	Livestock Gathering Facilities	Reconstruct Timberline Corral to standard
Long Ridge	Range readiness and livestock forage rating	Change grazing season of use from January 1 through June 30 to March 1 through June 15 to address range readiness concerns and conditions at Dandy Flat
	Permitted numbers	Increases permitted numbers from 141 to 165 cow/calf pair based on overall reduction of HMs from shortened season
	Livestock Gathering Facilities	Reconstruct Smalley Cove Corral to standard Remove Long Ridge Corral and portion of holding field fence that is on Private Land. Authorize construction of new corral and fenceline on adjacent Forest Service land Authorize use in Smalley Cove Pasture for gathering livestock. Removal of existing boundary fence to incorporate additional Forest Service lands to the north. Construct holding field at junction of Southern California Edison Powerhouse #4 Road and County Road 235
	Livestock impacts to springs/seeps	Protect spring head at Teddy's Spring and Horseshoe Bend Trail Spring from livestock trampling impacts by constructing barb wire exclosure fences
	Livestock distribution	Develop Coyote Spring to improve livestock use and distribution patterns.

*The Forest Service would be responsible for providing materials and the permittee would be expected to provide the labor. The proposed range improvements would be completed within 5 years of the decision.

Monitoring

Utilization standards for both action alternatives are listed in Table 6. Table 7 displays the monitoring plan for the action alternatives. This plan includes both implementation and effectiveness monitoring. Implementation monitoring is used to determine whether the proposed action is implemented as planned. Effectiveness monitoring is conducted to determine if the management practices applied have been effective in moving toward meeting the desired conditions.

Annual compliance monitoring of standards and guidelines (Table 6) would be conducted through grazing permit administration, which would include Annual Operating Instructions, grazing utilization monitoring, and enforcement of the allowable use standards (Forest Service Handbook, 2209.13, Chapter 10).

Forage utilization standards would serve as triggers for a change in management if monitoring indicates the standards have been exceeded. Management actions such as reducing livestock numbers, shortening the grazing season, or other strategies would be implemented as necessary to meet these standards.

If monitoring shows that desired resource conditions are still not meeting or moving towards desired condition within five years of this decision, the livestock grazing management would be re-evaluated and a decision to adjust management would be made. Reductions in the season of use and/or livestock numbers would be made until conditions improve. The need for additional range improvements may also be evaluated (under NEPA) to help meet desired conditions such as fenced exclosures or drift fences, developing water sources or other structural or non-structural range improvements.

Table 6. Allowable utilization levels by vegetation community.

Landscape	Vegetation type	Standards for Rangeland in satisfactory condition or late ecological status	Standard for rangeland in unsatisfactory condition or early ecological status
Annual grasslands & oak woodlands with > 10 inches annual precipitation and ≤15% slope (1,000-2,500 feet elevation)	grass and grasslike plants and forbs	700 lbs/acre Residual Dry Matter	1,000 lbs/acre Residual Dry Matter
Annual grasslands & oak woodlands with > 10 inches annual precipitation and >15% slope (>2,500 feet elevation)	grass and grasslike plants and forbs	1,000 lbs/acre Residual Dry Matter	1,200 lbs/acre Residual Dry Matter
Meadows/riparian areas within annual grasslands, oak woodlands, montane and subalpine meadows	grass and grasslike plants and forbs	40 % Use by Weight	30 % Use by Weight
All rangeland types	hardwoods: including (oak/willow and other shrub seedlings/regeneration)	Allow browse on no more than 20% of current annual leader growth and advanced regeneration	Allow browse on no more than 10% of current annual leader growth and advanced regeneration
Annual Grasslands & Oak Woodlands	Annual Grasslands & Oak Woodlands/Uplands	Minimum of 60 percent cover	Minimum of 60 percent cover

Table 7. Implementation and Effectiveness Monitoring

Type of Monitoring	When	Where
Range readiness inspections using Region 5 Range Readiness protocol	Annually prior to livestock turnout	**Long Ridge**: Horse Pasture, Dandy Flat **Castle Peak**: Italian Bar and Redinger
Forage utilization using Region 5 paired plot/double sampling method to determine RDM left at end of grazing season and photo points	Annually at end of grazing season	**Long Ridge**: Horse Pasture, Long Ridge, Dandy Flat, Smalley Cove and Fish Creek* **Castle Peak**: Italian Bar, Sheep Camp, Powerline 3, Saginaw and Redinger
Riparian monitoring using 2007 BLM/USFS Protocol: *Monitoring Stream Channels and Riparian Vegetation –Multiple Indicators* Method includes sampling greenline vegetation composition, streambank alteration, stability and cover, residual vegetation, (stubble height), woody species regeneration and use and in-channel indicators (e.g. width:depth, substrate (% fines), pool quality index)	Every 5 years starting in 2010	**Long Ridge:** Fish Creek and Unnamed Tributary at Kerckhoff Lake **Castle Peak:** *No response reach to assess*
Rangeland condition and trend monitoring using *Region 5 Long Term Range Monitoring* methodology	Five Year Interval (last monitored in 2006)	**Long Ridge**: Horse Pasture, Long Ridge, Dandy Flat **Castle Peak**: Italian Bar, Redinger, Powerline 3 and Saginaw
BMPEP Monitoring: long-term monitoring using the USFS Region 5 protocol and G24 field form. This form records herbaceous and woody utilization levels, stream bank disturbance, ground cover, bank angle, riparian and upslope erosion, and riparian vegetation and seral condition.	Three sites total monitored per year on Forest	Random selection

*PG&E lease requires same grazing standards as Forest Service.

Alternative 3

Reduced Season of Use and Livestock Numbers

This alternative would reduce the permitted livestock numbers on Castle Peak Allotment by 95 cow/calf pair and authorize 205 cow/calf pair from March 1 through June 30. Long Ridge Allotment would be managed similar to the Proposed Action under this alternative (Table 10).

Table 10. Description of season of use and livestock numbers under Alternative 3.

Allotment	Pasture	Livestock			Period of Use	
Long Ridge	Long Ridge Horse Pasture (gather pasture)	~100	cattle	cow/ calf	Early March at Livestock Turnout	Early June at Livestock Gather
Long Ridge	Smalley Cove Pasture (PG&E/Forest Service) (gather pasture)	50	cattle	cow/ calf	June 1	June 30
Long Ridge	All Units	125	cattle	cow/ calf	March 1	June 30
Long Ridge	All Units	40	cattle	cow/ calf	March 1	June 30
Castle Peak	Redinger	100	cattle	cow/ calf	March 1	June 30
Castle Peak	Castle Peak	105	cattle	cow/ calf	March 1	June 30

Castle Peak:

Under this alternative grazing would not be authorized after June 30 in Castle Peak Allotment. Proposed numbers would be reduced from the Proposed Action by 95 cow/calf pair overall. This alternative would authorize 205 cow/calf pair from March 1 to June 30. The range improvements proposed for reconstruction would be the same as the proposed action (Table 9). Standards and guidelines and monitoring are the same as described under the proposed action including Tables 6 & 7.

Long Ridge:

Under this alternative the proposed numbers are the same as the proposed action, however, the season of use would extend to the end of June. The range improvements proposed for reconstruction, the development and protection of springs would be the same as described in the proposed action (Table 9). Standards and guidelines and monitoring would be the same as described under the proposed action including Tables 6 & 7.

Mitigation Common to All Alternatives

In response to public comments on the proposal, mitigation measures were developed to ease some of the potential impacts the various alternatives may cause. The mitigation measures would be applied to any of the action alternatives. The following project design measures would continue to be implemented through Term Grazing Permits:

- Minimize impacts to pre-historic and historic sites, streams, seeps and springs through proper salt placement and herding to draw and distribute livestock away from these sensitive areas.

Alternatives Considered But Eliminated From Further Study

Continue current management. Under this alternative, livestock management and use would continue as currently being implemented. This alternative was dropped from further consideration because it did not fully meet the purpose and need for the project.

The following alternatives were suggested by the public:

The USFS should carefully consider other reduced-grazing alternatives that would allow for continued historical usage of the allotments by permittees, but would better protect at-risk wildlife species, benefit recreation, enhance water quality. This alternative was dropped from further consideration because the effects would be similar to the proposed action and Alternative 3, which reduces permitted use (reduction in Head Months) and incorporates protection measures for Forest Service sensitive wildlife and Best Management Practices (BMPs) to enhance water quality (Table 2) . The effects of reduced grazing area addressed under the proposed action and Alternative 3, since neither alternative is a continuation of current management. Recreation opportunities on the forest are not restricted by this proposal.

Incorporate high intensity, low frequency grazing systems. This alternative was dropped from further consideration because it does not meet the purpose and need to provide stability to the local community, in this case ranchers. The need is to provide for a viable ranching operation through the use of National Forest Service lands. The livestock graze the two allotments in this proposal during the spring months prior to moving up to higher elevation permitted ranges. Incorporating high intensity short duration would require the analysis of multiple allotments and/or a larger permitted area which is outside the scope of this proposal. A moderate degree of grazing maintains satisfactory litter cover, or residual dry matter (RDM) in order to protect against soil deterioration and obtain efficient production from the fluctuating quantity of forage on foothill ranges (Bentley and Talbot 1951). Using RDM for monitoring has become the most widely accepted method for managing annual grasslands in California (Stromberg et al 2007). In terms of managing the annual grassland cycle and annual grass physiology, there is little utility in rest, deferment or rotation because grasses germinate from the soil in response to rain. Scientific evidence is lacking that shows a benefit or consistent

response to rotational grazing and/or "holistic resource management" in annual grasslands although it may be beneficial in managing for a particular species or setting (Stromberg et. al 2007). The proposed action incorporates grazing management that meets goals and objectives for satisfactory rangeland condition. Under this proposal, only livestock gathering pastures in all allotments would be managed under high intensity low frequency grazing.

Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Information in the Table 11 is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

Table 11. Comparison of Alternatives.

Item to Compare	Alternative 1: No Action	Alternative 2: Proposed Action	Alternative 3: Reduced Use in Castle Peak
Effect to rangeland resources	**Long Ridge and Castle Peak:** Improved herbaceous ground cover; possible decline in disturbance-adapted species	**Long Ridge:** Delayed on-date would move Dandy Flat key area site toward desired soil and forage conditions **Castle Peak:** Delayed on-dates likely to benefit soil and vegetation condition and	**Long Ridge:** Same as Alternative 2 **Castle Peak:** Combination of reduced livestock numbers and delayed on-date likely to benefit soil and vegetation condition and maintain desired conditions of good
Effects to hydrological resources	**Long Ridge and Castle Peak:** Livestock impacts such as trampling of spring/seep areas would cease; soil bulk density would recover at a slightly accelerated rate; channel form would recover more rapidly; fecal pathogen input would be reduced although there may be no change	**Long Ridge:** Impacted springs would be protected, effects on watershed resources expected to increase slightly relative to the existing condition, FAR reaches may recover, but factors outside control of management are contributing to FAR rating **Castle Peak:** Delayed on-date would protect soil and vegetation from excessive effects of	**Long Ridge:** Same as Alternative 2 **Castle Peak:** No summer use would occur and effects to water sources and riparian areas would be minimized; delayed on-date would protect soil and vegetation from excessive effects of livestock use, overall effects would decrease from current condition

Item to Compare	Alternative 1: No Action	Alternative 2: Proposed Action	Alternative 3: Reduced Use in Castle Peak
	in risk to human health, based on background bacteria present; Fish Creek and Unnamed tributary reaches may recover, but factors outside control of management are contributing to FAR rating	livestock use, overall effects would decrease from current condition	
Effects to TES plants	No effect annual Mariposa pussypaws; no effects to carpenteria; no direct effects for Madera leptosiphon, possible indirect effects to plant vigor since grazing may benefit the habitat for this plant by reducing competition from non-native annuals and weeds	No effect to annual Mariposa pussypaws; negligible direct effects to carpenteria; chance of direct effects from trampling to Madera letosiphon	No effect to annual Mariposa pussypaws; no effects to carpenteria; provides a greater opportunity for native annual plant species, such as Madera leptosiphon, to establish and grow
Effects to noxious weeds-risk of spread	Reduced risk of introduction of new weed species and reduced risk of spread of species already present in the allotments	Greater risk than Alternatives 1 and 3 for any newly introduced weeds brought by cattle or transport vehicles	Lower risk for exacerbating the spread and density of existing infestations of weeds

Item to Compare	Alternative 1: No Action	Alternative 2: Proposed Action	Alternative 3: Reduced Use in Castle Peak
Effects to terrestrial wildlife	No effect	No effect to Valley elderberry longhorn beetle; Due to possible indirect effects to prey habitat, Alternative 2 may impact individuals, but is not likely to result in a trend toward federal listing or loss of viability for the following sensitive species: Peregrine falcon, Spotted owl, Northern goshawk and Western red bat	No effect to Valley elderberry longhorn beetle; similar or lessened effects to sensitive species compared to Alternative 2
Effects to aquatic species	No effect	May affect, but is not likely to adversely affect the California red-legged frog; for foothill yellow-legged frog; for Western pond turtle, may affect individuals but is not likely to result in a trend toward federal listing or loss of viability; for hardhead minnow, may effect, not likely to result in a trend toward federal listing	May affect, but is not likely to adversely affect the California red-legged frog; for foothill yellow-legged frog and Western pond turtle- may affect individuals but is not likely to lead to federal listing or loss of viability; for hardhead minnow, may effect, not likely to result in a trend toward federal listing
Effects to Terrestrial Management Indicator Species (MIS)	No effect	No changes to current habitat, structure and quantity or distribution of species	No changes to current habitat, structure and quantity or distribution of species

Item to Compare	Alternative 1: No Action	Alternative 2: Proposed Action	Alternative 3: Reduced Use in Castle Peak
Effects to Aquatic Management Indicator Species (MIS)	Localized recovery of disturbed streambanks from improved vegetative cover	Improved stream shading at Smalley Cove; existing trend in the habitat of aquatic macroinvertebrates not expected to be altered under any project alternative	Improved stream shading at Smalley Cove; existing trend in the habitat of aquatic macroinvertebrates not expected to be altered under any project alternative
Effects to cultural resources	**Long Ridge:** This alternative would eliminate the potential for direct or indirect impacts to 47 cultural resource sites **Castle Peak:** This alternative would eliminate the potential for direct or indirect impacts to 37 cultural resource sites	**Long Ridge:** No direct or indirect effects were found to 47 cultural resource sites within the allotment **Castle Peak:** No direct or indirect effects were found to 37 cultural resource sites within the allotment	**Long Ridge and Castle Peak:** Effects would be the same as Alternative 2

ENVIRONMENTAL CONSEQUENCES

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for comparison of alternatives presented in the chart above.

In 1978, the Council on Environmental Quality promulgated regulations for implementing the National Environmental Policy Act (NEPA). These regulations (40 CFR Parts 1500-1508) include a definition of "significantly" as used in NEPA. The eleven elements of this definition are critical to reducing paperwork through use of a finding of no significant impact when an action would not have a significant effect on the human environment, and is therefore exempt from requirements to prepare an environmental impact statement (EIS). Significantly as used in NEPA requires considerations of context and the ten elements of intensity for effects relative to finding of no significance elements. These elements are:

1. Impacts both beneficial and adverse.

The significance of effects is analyzed as to context and intensity (40 CFR 1508.27). A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial. These effects are discussed below. Direct, indirect, and cumulative effects to terrestrial, aquatic and plant species are included in sections 7, 9 and 10.

Impacts to hydrologic function, aquatic habitat and water quality

This project proposes standards and guidelines to minimize the potential for trampling impacts, as well as the possible associated effects including changes in stream channel morphology, increases in turbidity due to increased erosion and animal wallowing in streams, increases in water temperature that could result from channel widening, and decreases in dissolved oxygen related to increasing water temperature. Monitoring will provide the basis for identifying areas in need of additional measures to minimize trampling impacts through time. The Forest Plan allows a maximum of 20% bank disturbance in a reach. The potential impacts are not expected to affect downstream beneficial uses.

This project will minimize pathogen introduction to surface waters by minimizing the time that animals spend in riparian areas and ensuring that riparian areas have adequate remaining vegetation to provide an effective filter. While bacteria and pathogens will enter surface water as a result of authorizing this grazing, literature review suggests a slight risk to human health. Standards and guidelines will limit the quantity of fecal pathogens entering streams, and beneficial uses will be protected.

Alternative 1 – No Action - Common to All Allotments

Trampling caused by domestic livestock would cease throughout these allotments. Soil bulk density would recover at a slightly accelerated rate in areas where recent livestock use has slowed recovery. In areas where streambank morphology is affected by livestock use, channel form would also recover more rapidly with no grazing than it would with grazing, even given the standards and guidelines that would apply to that grazing.

Cattle would no longer serve as a source of bacteria and pathogens in these allotments. Inputs of all fecal pathogens would be reduced compared to the recent past. There may be little change in risk to human health, based on studies that indicate that bacteria are present in forest and rangelands even in the absence of livestock (Atwill 2003, Derlet and others 2004, Gary and others 1983, Robbins 1979). However, other studies (Stephenson and Street 1978) report a strong temporal correlation between fecal coliform and the presence of cattle, suggesting that there could be reductions in bacteria.

Cattle would no longer serve as a source of nutrients in these allotments. There would likely be little change overall in nutrients in surface waters, as indicated by studies (Campbell and Allen-Diaz 1997, Gary and others 1983, Robbins 1979) that suggest that site characteristics have a stronger influence on water quality than properly managed grazing.

Cattle would not trample uplands, streamside areas, or streambanks, which would remove these effects as potential sources of increased sediment in allotment streams. Although studies support that moderate grazing does not usually result in statistically significant differences in infiltration and sediment production when compared to no grazing (Johnson 1992), non-statistical differences have been measured. Infiltration would probably increase slightly overall in the allotments and sediment production would decrease slightly.

In the absence of livestock grazing, the effects of grazing on riparian vegetation and bank trampling caused by livestock as identified in the PURPOSE AND NEED FOR ACTION section would not occur.

Proposed Action – Alternative 2

Long Ridge Allotment

There are few perennial drainages in this allotment that would qualify as a “response reach”, thus PFC assessments were only conducted on three reaches in the allotment. The Fish Creek reach (tributary to Kerckhoff Reservoir) rated as Functioning at Risk (FAR), trend unknown. Trend was indeterminate because no previous surveys had been conducted nor were there clear signs in vegetation distribution suggesting a trend. One thing common to all reaches was aggradation and an excess of fines present in the pools. The source of the sediment is unknown, but may be from private land use activities upstream. The presence of fines in the pools could affect the hydrologic function (i.e.,

increase the width-to-depth ratio), which could increase hydraulic near-bank shear stress causing accelerated erosion. At present, however, there is no excessive bank erosion occurring. The stream can still access its floodplain and dissipate energies associated with a 25-year flood flow return event (the basis for PFC), and thus, the system rates FAR.

The unnamed tributary to Kerckhoff Reservoir reach rated as Functioning at Risk with an upward trend. The FAR rating was due to vertical instability in some segments as well as aggradation in some pools. Vertical instability was evidenced by head-cutting and lateral scour of both the main stem channel and smaller class IV tributaries. Head-cutting and vertical incision is no longer occurring and has been arrested by the boulder-bedrock substrate as well as re-vegetation of the banks, suggesting this erosion is an older, historic feature, and not related to current land use activities. Aggradation and pool filling of coarse sand was also noted in some segments, with an estimated filling of approximately 20%. The source of the sediment is unknown, but may be from private land use activities upstream. The Willow Creek reach included a segment of Willow Creek near the confluence with the San Joaquin River. The system rated Proper Functioning Condition with the caveat that flow regulation from Bass Lake has caused riparian encroachment. This is typical of systems that have limited or restricted bankfull maintenance flows. The riparian encroachment could have affects to the aquatic system, but would not restrict localized flood flows from accessing the flood plain and dissipating flood energies.

The Horseshoe Bend Trail Spring showed signs of denudation and heavy use by livestock as a forage and bedding area. Chiseling was also evident along the banks of the spring as well as the channel that has developed below the spring. Recovery of the vegetation in the reach immediately downstream of the spring should be facilitated by excluding the spring and associated drainage from livestock use/access. Teddy's Spring showed signs of denudation from chiseling and livestock resting. Impacts were concentrated around the spring site. A spring exclosure and the development of an off-site water source will cease any further degradation. Current grazing impacts have not been identified as contributing factors to Cumulative Watershed Effects (CWEs).

Direct and Indirect Effects: The effects of the proposed action on watershed resources are expected to be increased slightly relative to the existing condition. Two of the reaches assessed for this analysis rated FAR due to factors outside of the control of the Sierra NF (i.e., excess fines are likely derived from private lands upstream of the response reaches). The Willow Creek reach rated PFC and is expected to remain at PFC with the proposed action.

The streams in this area are designated as Municipal Supply in the San Joaquin Basin Control Plan (CVRWQCB 2004a). Surface water used for municipal supply would be treated, so the slight risk of livestock introducing bacteria / pathogens is not expected to affect this use. Monitoring and enforcement of riparian utilization and streambank alteration standards will prevent grazing impacts from affecting water temperatures in 303(d) listed Willow Creek. Teddy's Spring showed signs of denudation from chiseling and livestock resting. A spring exclosure will cease any further degradation. The Horseshoe Bend Trail Spring shows signs of denudation from livestock forage and

resting. Chiseling in and around the spring and channel has occurred, but has not exceeded the disturbance threshold of 20 percent bank instability. An exclosure for the spring and part of the channel will be constructed to prevent further degradation. An off site water source may be developed for this site to further reduce impacts.

Castle Peak Allotment

There are few perennial drainages in this allotment that would qualify as a "response reach", thus PFC was only conducted on one reach in the allotment at Saginaw Creek. The system rated PFC, although aggradation of coarse sand was observed in some pools. The source of the sediment is likely from erosion caused by runoff from the Mammoth Pool Road. Due to the very steep nature of the valley sides, it is highly unlikely that any livestock activity will occur in this drainage. Field observations in this allotment suggest that recent livestock use has not resulted in impacts to perennial stream channels or riparian areas that exceed applicable standards and guidelines. Current grazing impacts have not been identified as contributing factors to Cumulative Watershed Effects (CWEs).

Direct and Indirect Effects: The effect of the proposed action on watershed resources is expected to be decreased slightly relative to the existing condition. Field observations in this allotment suggest that recent livestock use has not resulted in impacts to stream channels or riparian areas that exceed applicable standards.

One PFC assessment was conducted in this allotment along Saginaw Creek. This reach rated as PFC and is expected to remain in Proper Functioning Condition with the proposed action especially since livestock use in or near this drainage is unlikely due to the steep nature of the valley slopes. The streams in this area are designated as Municipal Supply in the San Joaquin Basin Control Plan (CVRWQCB 2004a). Surface water used for municipal supply would be treated, so the slight risk of livestock introducing bacteria and/or pathogens is not expected to affect this use. Monitoring and enforcement of riparian utilization and streambank alteration standards will prevent grazing impacts from affecting water temperatures in 303(d) listed Willow Creek. See the RCO Consistency Analysis Report for more detail.

Risk of spreading noxious weeds

Livestock can disturb soil (creating an environment for most noxious weeds to thrive) or can transport weeds from an area of current infestation to a new location by seeds or plant material attached or imbedded in the hair of livestock and deposited in a new location. The following noxious weed species are known to occur in the allotments:

- Italian thistle (*Carduus pycnocephalus*): occurs scattered throughout the two allotments in a distribution typical of the central Sierra Nevada foothills. Areas of intense human disturbance such as the Smalley Cove campground (bordering the Long Ridge Allotment) have particularly large infestations, but otherwise infestation levels are either light or comparable to surrounding lands. Italian thistle has been spreading over the past 10 years in the central Sierra in both

grazed and ungrazed woodlands. Southern California Edison Company has mapped Italian thistle within its Big Creek 4 license area, and has been treating infestations annually since 2006. The Forest Service has done very little control to date due to limited budgets and personnel.

- Tocolote (*Centaurea melitensis*): Tocolote also occurs scattered throughout the allotments in a pattern similar to that seen in the surrounding foothills. The Sierra National Forest has largely given up attempts to control this weed except in cases where new small infestations are found in otherwise clean areas. This is because tocolote is ubiquitous in the foothill zone of the Forest, and it may be less ecologically damaging than the similar yellow starthistle (*Centaurea solstitialis*). More data is needed to ascertain whether tocolote is any more dense or widely distributed due to cattle use in the allotments.
- Spanish broom (*Spartium junceum*) is known to occur within the bed of the San Joaquin River downslope of the allotments, and along Willow Creek above its confluence with Whiskey Creek. A new infestation of about 50 shrubs was recently discovered by Southern California Edison Company along the west side of Willow Creek in the Long Ridge Allotment. The Forest Service will likely remove this infestation within the next few years. The presence of these infestations and the potential for spread is likely unrelated to livestock use.
- Bull thistle: there are a few small infestations of bull thistle in the Castle Peak allotment. Bull thistle is more often associated with montane vegetation in the Sierra NF rather than foothill vegetation and has not been observed spreading in the foothills within the area of the two allotments.

The effects analysis for noxious weeds rests on the following: The Sierra National Forest continues to emphasize active management of noxious weeds in cattle allotments, in cooperation with the permittees and as budgets permit. When funding is available for control of noxious weeds, control actions are consistent with management direction for noxious weeds in the LRMP; Forest Service Manual (FSM 2080); the Federal Noxious Weed Act of 1974 (sections 1 & 15); the Plant Protection Act of 2000; and state and local laws and regulations. Forest Service policy is to use Integrated Weed Management as a guiding principle. Integrated Weed Management is an interdisciplinary pest management approach for selecting methods for preventing, containing, and controlling noxious weeds. Mitigative measures derived from the SNFPA standards and guidelines would be included in the Term Grazing Permits and would be expected to bring the risk of weed spread down to a low level under both action alternatives.

Alternative 1 – No Action

<u>*Direct and indirect effects*</u>: With no cattle present, there would be no direct effects. There would be a reduced risk of introduction of new weed species and a reduced risk of spread of species already present in the allotments via transport vehicles or livestock hooves, manure, and hair. Grazing can reduce density of tocolote if it occurs after bolting and before spiny flowerheads form (generally April – June for tocolote in the area of the two allotments). Thus, infestations of tocolote and Italian thistle may worsen without grazing pressure during these months. Some California researchers have observed an

increase in Italian thistle under oaks areas where livestock grazing was removed but no information is given on where in the state this observation was made (Tyler, et al., 2007). Bare ground and late season overgrazing are factors known to exacerbate Italian thistle infestations, and these conditions are less likely to occur under Alternative 1 than under Alternative 2. Alternatives 1 and 3 probably don't differ significantly in this regard because under Alternative 3 livestock would be removed from the allotments by June 30. Alternative 2 has the highest risk of exacerbating infestations of noxious weeds due to the longer season of use and relatively higher level of ground disturbance, which both increase bare ground ideal for weed expansion and allow less opportunity for native and desirable non-native plant species to reproduce and sustain their populations.

Alternative 2 – Proposed Action

Direct and indirect effects: Because of the fact that cattle arrive in January, when soils are most vulnerable to compaction and churning, and remain in parts of Castle Peak until September 15, this alternative has the highest risk for exacerbating the spread and density of existing infestations of weeds, especially tocolote and Italian thistle. There is also a greater risk than under Alternatives 1 and 3 for any newly introduced weeds brought by cattle or transport vehicles to take hold and expand. Grazing in late winter and early spring can favor tocolote, as the rosettes are still at ground level, while competing grasses are grazed off, allowing more light to reach the tocolote; while late season grazing favors tocolote seed production because livestock avoid the spiny-headed plants and preferentially graze surrounding plants, allowing more nutrients, sunlight, and water for tocolote seed production (DiTomaso, 2001). Bare ground and late season overgrazing are factors known to exacerbate Italian thistle infestations (CDFA, 2009), and these conditions are most likely to occur under Alternative 2 than under Alternatives 1 or 3. Alternative 2 allows less opportunity than Alternative 3 for native and desirable non-native plant species to reproduce and sustain their populations, and healthy native vegetation can better resist invasion by noxious weeds (CDFA, 2009).

Alternative 3 – Reduced Use

Direct and indirect effects: This alternative has a lower risk for exacerbating the spread and density of existing infestations of weeds, especially tocolote and Italian thistle than Alternative 2. There is less risk than under Alternative 2 for any newly introduced weeds brought by cattle or transport vehicles to take hold and expand. There would be no grazing in late winter and early spring, which can favor tocolote, as the rosettes are still at ground level, while competing grasses are grazed off, allowing more light to reach the tocolote; while late season grazing favors tocolote seed production because livestock avoid the spiny-headed plants and preferentially graze surrounding plants, allowing more nutrients, sunlight, and water for tocolote seed production (DiTomaso, 2001). There would be no late-season grazing with its concomitant increase in bare ground. Bare ground and late season overgrazing are factors known to exacerbate Italian thistle infestations (CDFA, 2009), and these conditions are most likely to occur under Alternative 2 than under Alternatives 1 or 3. Alternative 3 allows the most opportunity for native and desirable non-native plant species to reproduce and sustain their

populations, and healthy native vegetation can better resist invasion by noxious weeds (CDFA, 2009).

2. The degree to which the proposed action affects public health or safety.

Livestock grazing has occurred within the Long Ridge and Castle Peak allotments since the late 1870s. There are no known reports of unacceptable effects to public health and safety during this time as a result of livestock grazing within these allotments. Recreation use within the allotments includes off-highway vehicle use, dispersed camping, horseback riding, fishing (Corrine Lake, Redinger and Kerckhoff lakes), hiking, hunting, boating, off-road vehicle use, water skiing and camping at the developed recreation site at Smalley Cove (administered by PG&E) located at Kerckhoff Lake.

3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

No park lands, prime farmlands, wild and scenic rivers, or ecologically critical areas are located within the project area. Wetland areas (as defined by the 1987 Corps of Engineers Wetlands Delination Manual) do exist within the project as isolated seeps and springs and riparian corridors adjacent to stream channels. This project area has been surveyed for historical and cultural resources. The project includes unique cultural resources as described in the Archaeological Reconnaissance Report. Surveys indicated that grazing activities would not have any effect on historical or cultural resources eligible for the National Register of Historic Places, nor would it cause the loss or destruction of any significant cultural or historical resources.

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.

The effects of the proposed actions are limited to the two affected allotments and the watersheds that contain the allotments. The effects of livestock grazing in this project area are known and they are not unique. While some people have disagreed with livestock grazing on public lands in general, no evidence has been identified showing that the environmental effects of these activities within the project area have been wrongly predicted.

5. Degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

Possible effects on the human environment are generally known and understood. The recognized potential effects resulting from grazing activities (as disclosed throughout the Environmental Consequences section 9) are supported by scientific literature. Past

monitoring, including utilization, annual grassland range condition and trend, and stream channel and riparian health, indicates that grazing practices and associated impacts are similar to those associated with other allotments found within the Sierra National Forest and Region 5.

6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about future consideration.

Continued grazing on the affected allotments and implementation of the proposed range improvement projects will not lead to another future action or actions that will have significant effects either individually or in combination with each other or with this action. There are no current plans to develop a new allotment within the project area, based on the decision to authorize grazing within the two allotments.

7. Whether this action is related to other actions with individually insignificant but cumulatively significant impacts.

A cumulative effect is the effect on the environment that results from the incremental effect of the action when added to the effects of other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes the other actions and regardless of land ownership on which the actions occur.

Cumulative effects to soil and watershed resources

A cumulative watershed effects (CWE) analysis was conducted for each subwatershed within the project area using the Equivalent Roaded Area (ERA) method. The Sierra National Forest CWE database model was utilized. The CWE analysis evaluates all activities within the watershed based on a threshold of concern. If this threshold is reached, it is an indication that a cumulative effect on a beneficial use within that watershed may occur. Current grazing impacts have not been identified as contributing factors to CWEs.

All known past and foreseeable projects have been entered into this CWE database at the time of review. The most probable mechanism of a cumulative watershed effect is chronic sedimentation. Controlling processes of concern for these watersheds are increased overland flow and sediment derived from steep slopes and poorly developed non-cohesive granite soils subject to rain-on-snow events, summer thunderstorms and natural fire. Sedimentation can also be increased due to management activities and natural processes within the watersheds. These include such activities as fuels reduction, road use and maintenance, recreation activities (e.g. off-highway vehicle use), and livestock grazing. Recovery of the channel system and its beneficial uses would be dependent upon the magnitude and extent of the impact. Other factors affecting recovery include duration and intensity of an event or activity following any impact and the location of the impact relative to beneficial uses.

The effects of the proposed action in the Long Ridge Allotment are generally similar to past livestock grazing effects; therefore, the cumulative effects are similar to the description of the existing condition. ERAs will not be changed by implementing the

proposed action. The ERA method for grazing does not take animal numbers into account; therefore, the increase in numbers does not change the values that were calculated for the existing condition. Streambank alteration monitoring of the two FAR reaches will ensure that identified grazing impacts are addressed in the Annual Operating Instructions (BMP 8-2 and 8-3). This will minimize the risk of livestock grazing contributing to CWE response or increasing the risk of a response in these areas.

The effects of the proposed action in the Castle Peak Allotment are generally similar to past livestock grazing effects; therefore, the cumulative effects are similar to the description of the existing condition. Since animal numbers are reduced from 5% under the proposed action and up to 30% in this allotment under Alternative 3, the total impacts will be reduced, and the cumulative effect will be a slight improvement in condition throughout the primary use areas. The ERA method for grazing does not take animal numbers into account; therefore, the decrease in numbers does not change the values that were calculated for the existing condition. Current grazing impacts have not been identified as contributing factors to Cumulative Watershed Effects (CWEs).

Impacts to water quality have the potential to occur under the following circumstances: 1) failure to implement BMP's, Riparian Conservation Objectives, and other required mitigation, 2) land failures resulting from abnormally intense storm events or earthquakes, 3) extreme water yields resulting from abnormally high intensity, magnitude, and duration, or rain on snow events of a large magnitude, and 4) removal of all vegetative matter and ground cover resulting from a wildfire.

Cumulative effects – risk of noxious weed spread

Alternative 1 - No Action

There would be no cumulative effects if livestock grazing were not authorized in the allotments. The potential for the removal of grazing to release tocolote and Italian thistle is judged to be offset by the reduction in risk of weed spread and introduction related to trucking cattle to the allotments and the ground disturbance from trampling that favors noxious weeds.

Alternatives 2 and 3

Other activities occurring within the two allotments that may contribute to increased weed spread or worsening of existing infestations are: uncontrolled off-road vehicle use, pre-commercial thinning, fuelbreak maintenance, installation of buried telephone and fiber-optic lines, and recreational activities (especially hiking, motorcycling, biking). None of these activities combines with the Proposed Action to result in a cumulative effect for the following reasons: uncontrolled OHV use will be curtailed when the Forest Travel Management Record of Decision is issued and riding can only occur on designated routes, thinning and plantation maintenance occurs in areas with commercial timber which do not overlap with Primary Use Areas, fuelbreak maintenance incorporates noxious weed prevention and control, and recreational activities such as hiking and biking tend to occur in areas such as trails where checking for new weed infestations is relatively easy and will be occurring over the term of the grazing permit.

Cumulative effects to TES terrestrial wildlife

Alternative 1 - No Action

Cumulative effects would not be anticipated under Alternative 1.

Alternatives 2 and 3

Past and future fires pose a potential cumulative effect upon TES species by destroying habitat. Benefits from fuels projects to TES species include: 1) improving habitat for prey species, 2) improving foraging habitat by making foraging easier, and 3) helping to prevent habitat destruction from uncontrolled wildfires. Effects from recreation include localized breeding disturbance and degradation of habitat. Past grazing may have contributed to degraded stream channels which, in turn, may have degraded important habitat components for TES species. Nevertheless, the Long Ridge and Castle Peak allotment contains no documented WIN sites. The primary effect caused by roads is through erosion which indirectly impacts TES species by degrading the habitat. Power transmission lines have been shown to be a cause of death for both bats and birds. Known and suspected causes of bird/bat collisions consist of tower height, lighting color, light duration, and electromagnetic radiation. While there has not been enough research focused on bats to say definitively, it appears mortality of bats is not significant as compared to birds.

Cumulative effects to TES plant species

Alternative 1 - No Action

There would be no cumulative effects under the No Action alternative.

Alternative 2 – Proposed Action

Other activities occurring within the two allotments that may contribute to the effects described above are: uncontrolled off-road vehicle use, pre-commercial thinning, fuelbreak maintenance, installation of buried telephone and fiber-optic lines, and recreational activities (especially hiking, motorcycling, biking). None of these activities combines with the Proposed Action to result in a cumulative effect for the following reasons: uncontrolled OHV use will be curtailed when the Forest Travel Management Record of Decision is issued and riding can only occur on designated routes, thinning and plantation maintenance occurs in areas with commercial timber which do not overlap with Primary Use Areas, fuelbreak maintenance incorporates noxious weed prevention and control, and recreational activities such as hiking and biking tend to occur in areas such as trails where checking for new weed infestations is relatively easy and will be occurring over the term of the grazing permit. The failure of Ditch #1 in April of 2009 (part of the PG&E Crane Valley Project) is another event that was evaluated to determine whether it might have contributed to cumulative effects. Based on a field assessment by a PG&E contract botanist (PGE, 2009), no sensitive plants were found in the area affected by the ditch failure, thus no cumulative effects would accrue.

Cumulative effects would be more likely under Alternative 2 than under Alternatives 1 or 3 for carpenteria under the following scenario: if a fire were to burn through the carpenteria stand, two problems could develop: 1) cattle would be more likely to access the carpenteria stand if it were opened up by fire, and they may eat the resprouts and / or trample the seedlings as has been observed in the past (Clines, 1994); and 2) weed infestations worsened to the point that carpenteria seedlings (which are not very competitive) were not able to survive to maturity. However, this would likely be offset by post-fire recommendations of the Burned Area Emergency Response team to ensure that cattle do not access carpenteria habitat. BAER also usually provides for surveys and control of noxious weeds post-fire, which would also lessen the likelihood of a cumulative effect.

Alternative 3 – Reduced Use

Other activities occurring within the two allotments that may contribute to the effects described above are: uncontrolled off-road vehicle use, pre-commercial thinning, fuelbreak maintenance, installation of buried telephone and fiber-optic lines, and recreational activities (especially hiking, motorcycling, biking). None of these activities combines with the Proposed Action to result in a cumulative effect for the following reasons: uncontrolled OHV use will be curtailed when the Forest Travel Management Record of Decision is issued and riding can only occur on designated routes, thinning and plantation maintenance occurs in areas with commercial timber which do not overlap with Primary Use Areas, fuelbreak maintenance incorporates noxious weed prevention and control, and recreational activities such as hiking and biking tend to occur in areas such as trails where checking for new weed infestations is relatively easy and will be occurring over the term of the grazing permit. The failure of Ditch #1 in April of 2009 (part of the PG&E Crane Valley Project) is another event that was evaluated to determine whether it might have contributed to cumulative effects. Based on a field assessment by a PG&E contract botanist (PGE, 2009), no sensitive plants were found in the area affected by the ditch failure, thus no cumulative effects would accrue.

The cumulative effects scenario described under Alternative 2 is less likely under Alternative 3, although there would still be a need for special management in the event of a fire in the carpenteria stand to ensure success of recovering resprouts and seedlings. The spread of weeds would be less severe overall under this alternative, which would make a cumulative effect less likely.

Cumulative effects to TES aquatic species

Alternative 1 - No Action

Past, present, and reasonably foreseeable actions within the project areas are displayed in Aquatics Biological Assessment/Evaluation, incorporated by reference. For these allotments, other known activities are off-highway vehicle use, road maintenance, recreational use (both developed and undeveloped), livestock grazing on private property, fish stocking, prescribed fire, and flow regulation for hydroelectric development.

The Project Hydrology Report notes that the Cumulative Watershed Analysis including current grazing generated Equivalent Roaded Acres (ERAs) in subwatersheds ranges from 0.15% to 0.65% (with the lower Threshold of Concern (TOC) being 4.0%). The absence of cattle grazing in the two allotments would not result in any increases to existing ERAs, or exceed a lower bound TOC. Cumulative Effects would not be anticipated under Alternative 1.

Alternative 2 - Proposed Action

Past, present, and reasonably foreseeable actions within the project area are detailed in Aquatics Biological Assessment/Evaluation, incorporated by reference. For these allotments, other known activities are off-highway vehicle use, road maintenance, recreational use (both developed and undeveloped), fish stocking, livestock grazing on private property, prescribed fire, and flow regulation for hydroelectric development. Kinsman I and II utilized prescribed fire in portions of the Saginaw Creek drainage. Following underburning, a reduction in ground may have contributed to short-term increases in sediment to aquatic habitat. The prescribed burn occurred more than 5 years ago and it is expected that needle cast has provided ground cover to areas where burning occurred. The Project Hydrology Report includes a Cumulative Watershed Effects Analysis that generated ERAs (including contributions from grazing in these allotments) that ranged from 0.15% to 0.65% (with the lower TOC being 4.0%). The effects of the proposed action are generally similar to past livestock grazing effects; therefore, the cumulative effects are similar to the description of the existing condition. Lower-bound TOCs would not be exceeded under the Proposed Action.

Forest Service actions have Best Management Practices along with Forest standards and guidelines to restrict off-site erosion and activities within Streamside Management Zones. Cattle grazing has occurred across the Forest and within the two allotments for over 100 years. It is expected that cattle grazing will locally result in areas of exposed streambanks and erosion. However, it is not expected that continued cattle grazing as proposed, in addition to other activities in the allotment, would contribute to cumulative effects to TEPS species.

Alternative 3

Past, present, and reasonably foreseeable actions within the project area are detailed in Aquatics Biological Assessment/Evaluation and would be similar to those presented under Alternative 2. Lower-bound TOCs would not be exceeded under Alternative 3. Forest Service actions have Best Management Practices, along with Forest standards and guidelines to restrict off-site erosion and activities within Streamside Management Zones. Cattle grazing has occurred across the Forest and within the two allotments for over 100 years. It is expected that cattle grazing will locally result in areas of exposed streambanks and erosion. However, it is not expected that continued cattle grazing as proposed, in addition to other activities in the allotment, would contribute to cumulative effects to TEPS species.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing

in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

In compliance with Section 106 of the National Historic Preservation Act, a record search, field survey, resource inventory, and Archeological Reconnaissance Reports (ARR) have been completed for this project area under the guidelines provided in the *Programmatic Agreement Among The U.S. Department Of Agriculture, Forest Service, And The Advisory Council On Historic Preservation Regarding Rangeland Management Activities On National Forest System Lands* (Range PA) (1995).

According to the Archeological Reconnaissance Reports, *Long Ridge Allotment Term Grazing Permit Archeological Reconnaissance Report #R2008051551051* and *Castle Peak Allotment Term Grazing Permit Archeological Reconnaissance Report #R2008051551058*, hereby incorporated by reference, data for the area has been reviewed and high impact areas, such as livestock watering sites, livestock handling facilities (e.g. corrals and holding pastures) and primary forage use areas were surveyed for cultural resources as per Range PA for grazing management. Assessment of historical and cultural resources within the project area indicates implementation of this project would not affect any cultural resource eligible for listing in the National Register of Historic Places, nor would it cause loss or destruction of any significant cultural or historical resources.

Alternative 1 - No Action

Long Ridge and Castle Peak Allotments

Direct and Indirect Effects: This alternative would eliminate the potential for direct or indirect effects from rangeland management to 47 cultural resource sites within the Long Ridge Allotment boundary, and 37 cultural resource sites within the Castle Peak Allotment boundary.

Cumulative Effects: Cumulative effects on cultural resources can be variable as past, current and future actions within the project area have occurred and may continue in the future. Since no action would occur under this alternative, cumulative effects are unlikely.

Alternative 2 – Proposed Action

Long Ridge and Castle Peak Allotments

Direct and Indirect Effects: There are a total of 47 cultural resource sites within the Long Ridge Allotment that have the potential to be affected by implementing this alternative. Twenty of these cultural resource sites were considered resources of interest, and were checked for impacts from current rangeland management. There are a total of 37 cultural resource sites within the Castle Peak Allotment that have the potential to be affected by implementing this alternative. Thirty-three of these cultural resource sites were considered resources of interest and were checked for impacts from current rangeland

management. No impacts were found for cultural resource sites in either allotment. In accordance with the stipulations of the Range PA, Alternative 2 will have no direct or indirect effect on cultural resources.

Cumulative Effects: No cultural resource sites were found to be impacted by past or current rangeland management activities, and all cultural resource sites will be avoided through project design from predictable future project activities, therefore, it is anticipated there will be no cumulative effects from this alternative.

Alternative 3

Long Ridge and Castle Peak Allotments

Direct and Indirect Effects: Effects would be the same as Alternative 2.

Cumulative Effects: Effects would be the same as Alternative 2.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

Threatened Species

The purpose of this evaluation is to document United States Department of Agriculture Forest Service (USDA-Forest Service) programs or activities in sufficient detail to determine whether an action or proposed action may affect any threatened endangered, proposed, candidate, or sensitive aquatic species and their habitats (FSM 2670.5). The following summary is from the Biological Assessment and Biological Evaluation (BE/BA) for Terrestrial Species, the Biological Assessment and Biological Evaluation (BE/BA) for Aquatic Species and the BA/BE for Threatened, Endangered and Sensitive Plant Species, hereby incorporated by reference.

Valley Elderberry longhorn beetle (VELB)

The threatened valley elderberry longhorn beetle *(Desmocerus californicus dimorphus)* occurs most often in riparian savannah or moist valley oak woodlands along the margins of rivers and streams in the lower Sacramento River and upper San Joaquin Valley and surrounding foothills at 3,000 feet elevation and below. The VELB is most often found in association with elderberry shrubs, the host plant which it uses for breeding from March through early June.

Alternatives 1, 2 and 3

Direct & Indirect Effects: The Long Ridge and Castle Peak allotments are entirely within the elevational range of the VELB. Elderberry shrubs exist within the allotment, but surveys for VELB have not been conducted. Cattle grazing could potentially cause some adverse effect upon VELB; however, the proposed grazing for the Long Ridge and Castle Peak allotment should have no effect, since VELB generally use stems greater than 1

inch in diameter that would not be palatable or edible by livestock. By adhering to the grazing utilization standards there would be no effect on the elderberry shrubs habitat.

Mariposa annual pussypaws

Alternatives 1, 2 and 3

Direct & Indirect Effects: Habitat for the Mariposa annual pussypaws (*Calyptridium pulchellum*) is gravelly or sandy flats or gentle slopes associated with granitic outcrops, below 3600 feet elevation (USDI, 1998). Suitable habitat occurs in the project area, however no new populations were found during botanical surveys for this project. Surveys were focused on suitable habitat within primary use areas. No effects are expected under any of the three alternatives, as no populations were found within the allotments.

California red-legged frog (CRLF)

Few populations of CRLF remain along the Sierra Nevada mountain range. There are no records of occurrence within the Sierra National Forest. Species experts consider CRLF to be extirpated from areas adjacent to the Sierra National Forest, probably since the late 1960s. CRLF generally occur at elevations below 5,000 feet in relatively flat streams with deep pools (USFWS 2002). The areas that might support CRLF breeding habitat within the project area (defined as perennial streams and ponds under 5000 feet elevation, with channel gradients less than 4 percent with at least one pool deeper than 0.7 meters) was determined through the CRLF Habitat Assessment (USDA-Forest Service 2008).

Ten sites were identified from GIS topographic maps and aerial photographs as being potentially suitable breeding habitat for the CRLF. Five of the sites are on federal lands, while the remaining 5 are on private property. Fish and lower Willow Creeks provided the best combination of potential breeding habitat. Willow Creek has had flows regulated by a hydroelectric project for nearly a century, while Fish Creek is influenced by Kerckhoff Reservoir. Segments of Willow Creek were identified during the habitat assessment for the relicensing Crane Valley Project; with subsequent protocol surveys (USFWS 1997) conducted by PG&E contractor's in 1998 and 2001. No CRLF were located during protocol surveys, but bullfrogs were abundant.

Alternative 1 – No Action

Direct & Indirect Effects: Under Alternative 1 there would no authorized livestock grazing within the Long Ridge or Castle Peak Allotments. Exclusion of cattle would remove cattle from Primary Use Areas providing suitable habitat for special interest herpetofauna and fish. There would be no potential direct effects from cattle trampling on individuals or eggs. None of the potential effects attributed to movement and browsing by cattle within riparian zones noted in the Environmental Consequences section would be anticipated from Alternative 1. Potential effects to habitat resulting from cattle congregation in Primary Use Areas, or trailing through Secondary Use Areas would not occur.

Alternative 2 – Proposed Action

Direct & Indirect Effects: There is overlap between the proposed period of cattle grazing within potential habitat for CRLF. Direct effects from cattle on CRLF are not expected since it is highly unlikely that this species occurs within the allotments based on limited breeding habitat available (Fish Creek, Willow Creek, and Corrine Lake), long distances between potential breeding sites, historic annual scouring flows on the San Joaquin River, lack of historic or current detections. However, there is an overlap (40 ac) of Primary Use Areas adjacent to sites with potential breeding habitat, with another 20 acres within suitable grazing. A myriad of potential effects have been attributed to movement and browsing by cattle within riparian zones, as noted in the Environmental Consequences section. Most of these potential effects would be indirect effects on quantity and quality of habitat for CRLF. Most potential indirect effects on habitat relate to erosion resulting from compaction, unstable banks, altered sediment balance, and stream channels. These potential effects could result from cattle congregation in Primary Use Areas, or trailing through Secondary Suitable Use Areas. While overlap of species habitat and Primary Grazing Use Areas appears limited, there is secondary movement of cattle that could affect ephemeral (seasonal) drainages. Ephemeral systems could contribute sediment during periods of flow (during and after precipitation events). Habitat occupied by hardhead does not appear to have excess accumulation of fines that would be indicative of on-going indirect effects.

Indirect effects on the stream channels within the allotments are not anticipated, however it is likely there would continue to be localized sites of instability resulting from cattle movement.

Cumulative Effects: Past, present, and reasonably foreseeable actions within the project area are detailed in the Aquatic Biological Assessment/Evaluation, incorporated by reference. For these allotments, other known activities are off-highway vehicle use, road maintenance, recreational use (both developed and undeveloped), fish stocking, livestock grazing on private property, prescribed fire, and flow regulation for hydroelectric development. Kinsman I and II utilized prescribed fire in portions of the Saginaw Creek drainage. Following underburning, a reduction in ground may have contributed to short-term increases in sediment to aquatic habitat. The prescribed burn occurred more than 5 years ago and it is expected that needle cast has provided ground cover to areas where burning occurred. The Project Hydrology Report includes a Cumulative Watershed

Effects Analysis that generated ERAs (including contributions from grazing in these allotments) that ranged from 0.15% to 0.65% (with the lower TOC being 4.0%). The effects of the proposed action are generally similar to past livestock grazing effects; therefore, the cumulative effects are similar to the description of the existing condition. Lower-bound TOCs would not be exceeded under the Proposed Action.

Forest Service actions have Best Management Practices along with Forest standards and guidelines to restrict off-site erosion and activities within Streamside Management Zones. Cattle grazing has occurred across the Forest and within the two allotments for over 100 years. It is expected that cattle grazing will locally result in areas of exposed streambanks and erosion. However, it is not expected that continued cattle grazing as proposed, in addition to other activities in the allotment, would contribute to cumulative effects to TEPS species.

Alternative 3 – Reduced Use

Direct & Indirect Effects: There is overlap between the proposed period of cattle grazing within potential habitat for CRLF. Under Alternative 3, there would be no summer grazing (7/1 – 9/15) within the Castle Peak allotment. There would also be 95 fewer cow/calf within the Redinger Pasture (Castle Peak allotment), although grazing in the Long Ridge allotment would be authorized an additional 14 days. Direct effects could occur from cattle trampling of individuals or eggs. This would be more likely to occur within Primary Use Areas where cattle may congregate, but could also occur in secondary or suitable grazing areas as cattle move between Primary Use Areas.

Direct effects from cattle on CRLF are not expected since it is highly unlikely that this species occurs within the allotments based on limited breeding habitat available (Fish Creek, Willow Creek, and Corrine Lake), long distances between potential breeding sites, historic annual scouring flows on the San Joaquin River, lack of historic or current detections. However, there is an overlap (40 ac) of Primary Use Areas adjacent to sites with potential breeding habitat, with another 20 acres within suitable grazing.

Potential effects attributed to movement and browsing by cattle within riparian zones was noted in the Environmental Consequences section. Potential indirect effects would be similar to those identified under Alternative 2. Potential indirect effects could result from cattle congregation in Primary Use Areas, or trailing through Secondary Suitable Use Areas. While overlap of species habitat and Primary Grazing Use Areas appears limited, there is secondary movement of cattle that could affect ephemeral (seasonal) drainages. Ephemeral systems could contribute sediment during periods of flow (during and after precipitation events).

Cumulative Effects: Past, present, and reasonably foreseeable actions within the project area would be similar to those presented under Alternative 2. Lower-bound TOCs would not be exceeded under Alternative 3.

Forest Service actions have Best Management Practices along with Forest standards and guidelines to restrict off-site erosion and activities within Streamside Management Zones. Cattle grazing has occurred across the Forest and within the two allotments for over 100 years. It is expected that cattle grazing will locally result in areas of exposed

streambanks and erosion. However, it is not expected that continued cattle grazing as proposed, in addition to other activities in the allotment, would contribute to cumulative effects to TEPS species.

Determinations

Implementation of the No Action or either of the two action alternatives for the Castle Peak and Long Ridge grazing allotments will not effect on the Valley elderberry longhorn beetle. The implementation of either of the two action alternatives for the Castle Peak and Long Ridge grazing allotments will not affect Mariposa annual pussypaws because no populations were found during surveys of the allotments. No consultation with US Fish and Wildlife Service is necessary.

The project may affect, but is not likely to adversely affect the California red-legged frog. The Forest Service requested formal consultation with the U.S Fish and Wildlife Service regarding CARLF species. The U.S. Fish and Wildlife Service concurred with the above determination. A detailed account of these species can be found in the Biological Assessments.

According to the Biological Assessments there are no known federally listed endangered or proposed species within the project area.

10. Whether the actions threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The action alternatives were developed in accordance with and do not threaten to violate any Federal, State, or local laws or requirements imposed for the protection of the environment or cultural resources (i.e. Endangered Species Act, National Historic Preservation Act, Federal Clean Water Act, etc). The project is fully consistent with the Sierra National Forest Land and Resource Management Plan (1991) as amended by the Sierra Nevada Forest Plan Amendment Record of Decision (2001, 2004). This proposed action is also in full compliance with the National Environmental Policy Act of 1969 and is consistent with the National Forest Management Act of 1976.

Forest Sensitive Terrestrial and Aquatic Species

Terrestrial Wildlife Species

The proposed action will have no direct effect upon the peregrine falcon. Cattle pose no direct competition for food and are unlikely to disturb nesting sites of peregrine. Peregrine nests are typically built on ledges, potholes, and edges of caves on steep, sheer cliffs, where cattle tend not to graze. There may be an indirect effect upon the peregrine since grazing could negatively affect habitat of the peregrines primary prey base (birds). Cattle grazing should cause no direct effect upon the spotted owl. Since spotted owls typically build their nests 30 to 180 feet above the ground, cattle would not disturb

nesting even if a reproductive pair was to take up residence in the allotment. While cattle grazing would not indirectly impact the spotted owl by impacting important habitat components of the owl (such as canopy cover, snags, or downed woody debris), it may indirectly affect the owl by impacting habitat quality of its prey and, thereby, prey availability.

Permitting grazing on the allotment should have no direct effect upon the northern goshawk. It may indirectly affect goshawks by impacting habitat quality of prey and prey availability. Goshawks forage on birds, and to some extent small mammals, that may depend on seeds, grasses, and other vegetation for food. By following the grazing utilization standards this impact should be minimized.

Since the red bat is an obligate tree rooster, cattle could have a direct effect upon individuals if a cow was to browse where they were roosting. Nevertheless, the occurrence of this happening is probably minimal. The chance of encountering a roost is probably minimal. If it did occur, the permittee or his/her workers would be briefly passing through the area not stopping, so roost-site disturbance is unlikely.

Water sites such as creeks and associated riparian zones are important foraging areas for the red bat; therefore, cattle grazing may have an indirect effect by impacting the quality of foraging habitat for the bat. Cattle can cause trample and chisel damage to streambanks which can ultimately lead toward downcutting of the streambed. This downcutting can, in turn, lower the watertable and dry out the riparian area (thereby lessening the amount of riparian habitat with water). However, the Long Ridge and Castle Peak allotment has no documented Watershed Inventory Need sites, and only traces of cattle impacts were observed near cattle crossings.

Forest Sensitive Plant Species

The information on Forest Service Sensitive plant species is drawn from the BA/BE for TES Plants. Field surveys were conducted for sensitive plants and invasive non-native plants during spring and summer 2007 and 2008 by Forest Service botanists. Aside from *Carpenteria californica,* which occurs in a population of about 55 shrubs along Willow Creek between the Castle Peak and Long Ridge allotments outside of primary use areas, no populations of Forest Service sensitive plants are known to occur within the project area. There is a chance that *Leptosiphon serrulatus* does occur but was not detected during surveys, thus this analysis will evaluate potential effects to any possible undiscovered populations that may exist in the allotments. The Madera leptosiphon (formerly known as Madera linanthus) is an annual herb that ranges in height from 5-18 cm. Typical habitat for Madera leptosiphon is dry slopes in cismontane woodland and lower montane coniferous forest, mostly in decomposed granite soils. The effects of grazing on Madera leptosiphon are not known. Appendix A of the BA/BE provides a full list of the Threatened, Endangered, and Sensitive plants found in or near the Sierra National Forest, a summary of information about their biology and habitat, and rationale for including or excluding them in this analysis.

GENERAL DISCUSSION OF EFFECTS TO FOREST SERVICE SENSITIVE PLANTS:

Direct effects
The following direct effects to sensitive plants are possible: Direct killing of plants when livestock walk through populations (trampling) or eat part of all of a plant, causing its death. The building or reconstruction of range improvements could also have direct effects if structures were to be built on top of rare plants or if ground is disturbed during construction or reconstruction of improvements or fences.

Indirect effects
Indirect effects to sensitive plants would mostly be related to erosion, soil compaction, or the degradation or loss of habitat resulting from the introduction or spread of noxious or invasive weeds. Noxious weeds are plant species that can spread rapidly and compete with native plants for water and other resources, in some cases forming solid stands that crowd out sensitive plant species. Noxious weeds can be transported by livestock, vehicles, and heavy equipment. Noxious weed species of particular concern in the two allotments are: tocalote (*Centaurea melitensis*), Italian thistle (*Carduus pycnocephalus*), and klamathweed (*Hypericum perforatum*). Tocalote and Italian thistle have been increasing in the foothills across property ownerships over the past 10 – 20 years (please see EA for further information).

Risk of noxious weed introduction and spread should be reduced by working with permittees to avoid transporting new weeds into the allotments and to be vigilant in recognizing new infestations that do arrive so that they can be promptly controlled as recommended by the USDA Forest Service "Guide to Noxious Weed Prevention Practices" (2001).

Alternative 1 – No Action.
Direct and indirect effects: There would be no direct or indirect effects to carpenteria if livestock grazing permits were cancelled. Although there would be no direct effects for Madera leptosiphon, there is a possibility of indirect effects: if non-native annual grasses and more aggressive non-native weeds such as tocolote and Italian thistle were to benefit by being released from grazing, it is conceivable that any undiscovered populations of Madera leptosiphon could suffer reduced vigor as a result. This is speculative but the use of livestock grazing is increasingly being studied as a method of maintaining a strong presence of native plant species in non-native annual grasslands (e.g., Huntsinger et al, 2007).

Cumulative effects – There would be no cumulative effects under the No Action alternative.

Alternative 2 – Proposed Action
Direct and indirect effects: Negligible direct effects are expected for carpenteria under Alternative 2. The population of carpenteria occurs along a section of Willow Creek that is seldom, if ever accessed by cattle (personal communication with Aimee Smith,

6/30/09). A population of mature shrubs such as this is not subject to cattle disturbance at the stocking rates proposed under this alternative. However, the fact that there is a higher stocking rate and a longer season of use under Alternative 2 increases the chance cattle may venture into the stand and eat some leaves. Also, there is a higher likelihood that invasive non-native weeds would flourish and spread than under Alternatives 1 or 3, and the long-term sustainability of the carpenteria population rests on the ability of seedlings to mature into reproductively mature shrubs over time. Because carpenteria seedlings are primarily produced after fire (Clines, 1994), and weeds tend to proliferate after fire, there is a greater risk that future seedlings would be outcompeted by noxious weeds under this Alternative relative to Alternatives 1 and 3.

There is a slight chance of direct effects in the form of trampling to Madera letosiphon if any undiscovered plants were to exist in the allotments, and under Atlernative 2 this is more likely than under Alternative 3 because of the presence of cattle from January to March when the Madera leptosiphon plants are germinating and growing in moist to wet soils (soils are more fragile, trampling would be more likely to kill young annual plants).

Cumulative effects: Other activities occurring within the two allotments that may contribute to the effects described above are: uncontrolled off-road vehicle use, pre-commercial thinning, fuelbreak maintenance, installation of buried telephone and fiber-optic lines, and recreational activities (especially hiking, motorcycling, biking). None of these activities combines with the Proposed Action to result in a cumulative effect for the following reasons: uncontrolled OHV use will be curtailed when the Forest Travel Management Record of Decision is issued and riding can only occur on designated routes, thinning and plantation maintenance occurs in areas with commercial timber which do not overlap with Primary Use Areas, fuelbreak maintenance incorporates noxious weed prevention and control, and recreational activities such as hiking and biking tend to occur in areas such as trails where checking for new weed infestations is relatively easy and will be occurring over the term of the grazing permit. The failure of Ditch #1 in April of 2009 (part of the PG&E Crane Valley Project) is another event that was evaluated to determine whether it might have contributed to cumulative effects. Based on a field assessment by a PG&E contract botanist (PGE, 2009), no sensitive plants were found in the area affected by the ditch failure, thus no cumulative effects would accrue.

Cumulative effects would be more likely under Alternative 2 than under Alternatives 1 or 3 for carpenteria under the following scenario: if a fire were to burn through the carpenteria stand, two problems could develop: 1) cattle would be more likely to access the carpenteria stand if it were opened up by fire, and they may eat the resprouts and / or trample the seedlings as has been observed in the past (Clines, 1994); and 2) weed infestations worsened to the point that carpenteria seedlings (which are not very competitive) were not able to survive to maturity. However, this would likely be offset by post-fire recommendations of the Burned Area Emergency Response team to ensure that cattle do not access carpenteria habitat. BAER also usually provides for surveys and control of noxious weeds post-fire, which would also lessen the likelhood of a cumulative effect.

Alternative 3 – Reduced Use

Direct and indirect effects : No direct effects are expected for carpenteria under Alternative 3. The population of carpenteria occurs along a section of Willow Creek that is seldom, if ever accessed by cattle (personal communication with Aimee Smith, 6/30/09). A population of mature shrubs such as this is even less likely to experience cattle disturbance under Alternative 3 than under Alternative 2. There is a lower likelihood than under Alternative 2 that invasive non-native weeds would flourish and spread. The long term sustainability of the carpenteria population rests on the ability of seedlings to mature into reproductively mature shrubs over time. Because carpenteria seedlings are primarily produced after fire (Clines, 1994), and weeds tend to proliferate after fire, there is a lower risk that future seedlings would be outcompeted by noxious weeds under this alternative relative to Alternatives 1 or 2. Alternative 3 provides a greater opportunity for native annual plant sepcies, such as Madera leptosiphon, to establish and grow during the months of January and February (on-date of March 1 rather than January 1 as in Alternative 2).

Cumulative effects: Other activities occurring within the two allotments that may contribute to the effects described above are: uncontrolled off-road vehicle use, pre-commercial thinning, fuelbreak maintenance, installation of buried telephone and fiber-optic lines, and recreational activities (especially hiking, motorcycling, biking). None of these activities combines with the Proposed Action to result in a cumulative effect for the following reasons: uncontrolled OHV use will be curtailed when the Forest Travel Management Record of Decision is issued and riding can only occur on designated routes, thinning and plantation maintenance occurs in areas with commercial timber which do not overlap with Primary Use Areas, fuelbreak maintenance incorporates noxious weed prevention and control, and recreational activities such as hiking and biking tend to occur in areas such as trails where checking for new weed infestations is relatively easy and will be occurring over the term of the grazing permit. The failure of Ditch #1 in April of 2009 (part of the PG&E Crane Valley Project) is another event that was evaluated to determine whether it might have contributed to cumulative effects. Based on a field assessment by a PG&E contract botanist (PGE, 2009), no sensitive plants were found in the area affected by the ditch failure, thus no cumulative effects would accrue.

The cumulative effects scenario described under Alternative 2 is less likely under Alternative 3, although there would still be a need for special management in the event of a fire in the carpenteria stand to ensure success of recovering resprouts and seedlings. The spread of weeds would be less severe overall under this alternative, which would make a cumulative effect less likely.

Aquatic Species

Analysis is presented to determine the effects of the reauthorization of the cattle grazing permits for the Long Ridge and Castle Peak Allotments for the following Forest Service Sensitive (FSS) aquatic species that occur, have habitat within or adjacent to, or are affected directly, indirectly, or cumulatively by this project:

- Foothill yellow-legged frog (FSS), *Rana boylii* (RABO)
- Western pond turtle (FSS), *Clemmys marmorata* (Subspecies *marmorata* and p*allida*) (WPT)
- Hardhead minnow (FSS), *Mylophardon conocephalus*

Alternative 1 – No Action

Direct/Indirect Effects: Under Alternative 1 there would no Forest Service authorized livestock grazing within the Long Ridge or Castle Peak Allotments. Exclusion of cattle would remove cattle from Primary Use Areas providing suitable habitat for special interest herpetofauna and fish. There would be no potential direct effects from cattle trampling on individuals or eggs. None of the potential effects attributed to movement and browsing by cattle within riparian zones noted in the Environmental Consequences section would be anticipated from Alternative 1. Potential effects to habitat resulting from cattle congregation in Primary Use Areas, or trailing through Secondary Use Areas would not occur.

Alternative 2 – Proposed Action

Direct/Indirect Effects: There is overlap between the proposed period of cattle grazing within potential habitat for RABO and WPT. Direct effects could occur from cattle trampling of individuals or eggs. No direct effects to hardhead minnow would be expected since there is very limited overlap (2 acres) between occupied habitat and Primary Use Grazing Area. There are approximately 90 acres of overlap between potential habitat for WPT and Primary Grazing Use areas along two intermittent tributaries (Saginaw Creek and an unnamed tributary to Kerckhoff Reservoir) and a segment of the San Joaquin River. There are an additional 140 acres of suitable grazing overlap, representing transitory movement between Primary Use Areas. Western pond turtle are known to occur along Saginaw Creek. While RABO does occur in an adjacent drainage, it has not been detected within the two allotments. Direct effects on RABO would not be anticipated, although there is overlap of approximately 40 acres of potential habitat and Primary Use Grazing Areas and an additional 60 acres overlap with suitable grazing.

A myriad of potential effects have been attributed to movement and browsing by cattle within riparian zones, as noted in the Environmental Consequences section. Most of these potential effects would be indirect effects on quantity and quality of habitat for RABO and WPT. Most potential indirect effects on habitat relate to erosion resulting from compaction, unstable banks, altered sediment balance, and stream channels. These potential effects could result from cattle congregation in Primary Use Areas, or trailing through Secondary Suitable Use Areas. While overlap of species habitat and Primary Grazing Use Areas appears limited, there is secondary movement of cattle that could affect ephemeral (seasonal) drainages. Ephemeral systems could contribute sediment during periods of flow (during and after precipitation events). Habitat occupied by hardhead does not appear to have excess accumulation of fines that would be indicative of on-going indirect effects, however the flume breach of PG&E Ditch No. 1 on April 28, 2009 cased significant erosion and mobilization of sediment and deposition of sediment has comprised pool function in the Unnamed Tributary to Kerckoff Lake.

Of the species being evaluated, WPT is known to occur along two streams within the allotments, the two sites also represent potential habitat for RABO. WPT occurs along Saginaw Creek, which also overlaps with an area of Primary Use by cattle. The stream channel in the segment of overlap is higher gradient, with a boulder/bedrock substrate that is less likely to be disturbed by cattle. The Project Hydrology Report notes that "Field observations in this allotment suggest that recent livestock use has not resulted in impacts to stream channels or riparian areas." Indirect effects on the stream channels within the allotments are not anticipated, however it is likely there would continue to be localized sites of instability resulting from cattle movement.

The Project Hydrology Report notes that "There are no streams in these allotments that appear to have excessive nutrient inputs, which would be identified by observation of heavy accumulations of manure in streams or algal blooms in unexpected areas. This project will minimize pathogen introduction to surface waters by minimizing the time that animals spend in riparian areas and ensuring that riparian areas have adequate remaining vegetation to provide an effective filter".

Alternative 3 – Reduced Use

Direct/Indirect Effects: There is overlap between the proposed period of cattle grazing within potential habitat for RABO and WPT. Under Alternative 3, there would be no summer grazing within the Castle Peak allotment. There would also be 95 fewer cow/calf within the Castle Peak allotment, although grazing in the Long Ridge allotment would be authorized an additional 14 days. Direct effects could occur from cattle trampling of individuals or eggs. This would be more likely to occur within Primary Use Areas where cattle may congregate, but could also occur in secondary or suitable grazing areas as cattle move between Primary Use Areas. Similar to Alternative 2, no direct effects to hardhead minnow would be expected since there is very limited overlap (2 acres) between occupied habitat and Primary Use Grazing Area.

There are approximately 90 acres of overlap between potential habitat for WPT and Primary Grazing Use areas along two intermittent tributaries (Saginaw Creek and an unnamed tributary to Kerckhoff Reservoir) and a segment of the San Joaquin River. Of this total, 13 acres occur within Primary Use Areas in the Redinger Pasture that would represent Primary Use areas subject to 50% fewer cattle than Alternative 2. There are an additional 140 acres of suitable grazing overlap, representing transitory movement between Primary Use Areas. Under Alternative 3 approximately 56 of these acres would be grazed by 50% fewer cattle than Alternative 2.

Direct effects on RABO would not be anticipated, although there is overlap of approximately 40 acres of potential habitat and Primary Use Grazing Areas and an additional 60 acres overlap with suitable grazing. Of the 40 acres of overlap of Primary Use and potential habitat, 6 acres would be subject to 50% fewer cattle under Alternative 3.

Potential effects attributed to movement and browsing by cattle within riparian zones was noted in the Environmental Consequences section. Potential indirect effects would be similar to those identified under Alternative 2. Potential indirect effects could result from cattle congregation in Primary Use Areas, or trailing through Secondary Suitable Use Areas. While overlap of species habitat and Primary Grazing Use Areas appears limited, there is secondary movement of cattle that could affect ephemeral (seasonal) drainages. Ephemeral systems could contribute sediment during periods of flow (during and after precipitation events). Habitat occupied by hardhead does not appear to have excess accumulation of fines that would be indicative of on-going indirect effects.

Of the species being evaluated, WPT is known to occur along two streams within the allotments, the two sites also represent potential habitat for RABO. WPT occurs along Saginaw Creek, which also overlaps with an area of Primary Use by cattle. The stream channel in the segment of overlap is higher gradient, with a boulder/bedrock substrate that is less likely to be disturbed by cattle. The Project Hydrology Report notes that "*Field observations in this allotment suggest that recent livestock use has not resulted in impacts to stream channels or riparian areas*." Indirect effects on the stream channels within the allotments are not anticipated, however it is likely there would continue to be localized sites of instability resulting from cattle movement. Instances of localized instability could be reduced under Alternative 3 due to reductions in permitted cow/calf numbers (95 fewer) and elimination of summer grazing within the Castle Peak allotment.

The Project Hydrology Report notes that "There are no streams in these allotments that appear to have excessive nutrient inputs, which would be identified by observation of heavy accumulations of manure in streams or algal blooms in unexpected areas. This project will minimize pathogen introduction to surface waters by minimizing the time that animals spend in riparian areas and ensuring that riparian areas have adequate remaining vegetation to provide an effective filter".

Determinations

The proposed action and Alternative 3 may impact individuals, but is not likely to result in a trend toward Federal listing or loss of viability for the peregrine falcon, California spotted owl, Northern goshawk and Western red bat.

The implementation of either of the two action alternatives for the Castle Peak and Long Ridge grazing allotments may affect individuals but is not likely to cause a trend to federal listing or a loss of viability to carpenteria. This is because cattle seldom access the area of the carpenteria population, there is a slight chance that cattle might occasionally enter the stand and eat shoots or trample seedlings.

Implementation of either of the two action alternatives for the Castle Peak and Long Ridge grazing allotments may affect individuals but is not likely to cause a trend to federal listing or a loss of viability to Madera leptosiphon. This is because if any undiscovered plants are present in the project area they might experience some impacts but are also likely to be benefitted by grazing (annual grasses that might dominate a site with the would be kept from doing so under a regime of moderate grazing).

Other plant species listed on the Sierra National Forest as Forest Service Sensitive do not have habitat within the project area or were not found during surveys, and therefore will not be impacted by the project.

For foothill yellow-legged frog, Western pond turtle and hardhead minnow, both Alternatives 2 and 3 may affect individuals, but is not likely to lead to federal listing or loss of viability.

Management Indicator Species (MIS)

The Terrestrial Management Indicator Species Report for Long Ridge and Castle Peak Grazing Allotments, incorporated by reference, evaluated and disclosed the impacts of the Long Ridge and Castle Peak Grazing allotment renewal Project on the habitat of the thirteen (13) Management Indicator Species (MIS) identified in the Forest (NF) Land and Resource Management Plan (LRMP) (USDA 1991) as amended by the Sierra Nevada Forests Management Indicator Species Amendment (SNF MIS Amendment) Record of Decision (USDA Forest Service 2007a).

MIS whose habitat is in or adjacent to the project area, but whose habitat would not be directly or indirectly affected by the project. include: fox sparrow, mule deer, yellow warbler, mountain quail, sooty grouse, California spotted owl, American martin, northern flying squirrel, hairy woodpecker, and black-backed woodpecker. There will be no changes to the existing trend in the habitat, nor will it lead to a change in the distribution of the aforementioned species across the Sierra Nevada bioregion. There are no MIS whose habitat would be either directly or indirectly affected by the project to bring forward for analysis in this report.

The Aquatic Wildlife Management Indicator Species Report, incorporated by reference, identifies the Category 3 MIS, aquatic macroinvertebrates, whose habit would be either directly or indirectly affected by the project. The analysis of the effects of the project on the aquatic MIS habitat for the selected project-level MIS is conducted at the project scale and summarized below. Aquatic or Benthic Macroinvertebrates (BMI) have been demonstrated to be very useful as indicators of water quality and aquatic habitat condition. They are sensitive to changes in water chemistry, temperature, and physical habitat. BMI are an important component of the foodweb, providing a food source for birds, mammals, amphibians, reptiles, and fish.

The Sierra NF LRMP (as amended by the SNF MIS Amendment) requires bioregional-scale Index of Biological Integrity (IBI) and Habitat monitoring for aquatic macroinvertebrates; hence, the lacustrine and riverine effects analysis for the Long Ridge and Castle Peak allotments must be informed by these monitoring data. The sections below summarize the Biological Integrity and Habitat status and trend data for aquatic macroinvertebrates. This information is drawn from the detailed information on habitat and population trends in the 2008 USDA Forest Service Sierra Nevada Forests Bioregional MIS Report (USDA Forest Service 2008), which is hereby incorporated by reference.

The data collected at the Bioregional scale indicates that the IBI metrics for macroinvertebrates are stable. Changes in flow, sedimentation, and shade would not be expected under any alternative for the Long Ridge and Castle Peak Grazing Allotments. Locally there could be improvement in stream shading through changes in management at Smalley Cover (Alternatives 2 and 3), and through reductions in number of cattle and season of use (Alternative 3). Existing trend in the habitat or aquatic macroinvertebrates across the Sierra Nevada bioregion would not be expected to be altered under any project alternative.

11. Context of proposed action (national, regional, local, short and long term).

The nature and interest of this project is local and site specific to the Sierra National Forest and interested parties, including current livestock permittees and local Native American communities. The action alternatives affect a small portion of the Forest's land base. Out of a twelve-month year, these allotments would be grazed in the spring and summer months. The amount of time will also depend on the condition of the range and the forage production. In terms of the affected area, the proposed action only affects a small portion of the land base over a relatively short timeframe. Even in the context of seasonality and duration of activities, the analyses prepared in support of this EA indicate that the proposed action would not pose significant short or long-term effects.

These areas have been grazed by various permittees since the late 1800s. Current permittees include a local family and limited liability corporation that have held these permits for many years. The Rangeland Management Specialist has discussed the proposals in this EA with the permittees to ensure their understanding of the actions and conditions being proposed. There would be no significant effect to the permittees either in the short-term or long-term that would inhibit their ability to execute the permit.

The action alternatives will provide for long-term management of the natural and cultural resources in relation to the land use of livestock grazing.

CONSULTATION AND COORDINATION

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment:

ID TEAM MEMBERS:

Andy Stone, District Hydrologist
Anae Otto, Biologist
Joanna Clines, Forest Botanist
Heather Taylor, GIS Specialist
Kevin Williams, District Wildlife Biologist
Marie Mogge, Archaeologist
Erin Potter, District Archaeologist
Philip Strand, Forest Aquatics Biologist and Program Manager
Aimee Smith, Rangeland Management Specialist

FEDERAL, STATE, AND LOCAL AGENCIES:

Bureau of Land Management, Bakersfield Field Office
California Regional Water Quality Control Board
Mariposa County Department of Agriculture
U.S. Fish and Wildlife Service
California Department of Fish and Game

TRIBES:

Mono Nation
Table Mountain Rancheria
North Fork Mono Tribe
Dunlap Band of Mono Indians
Big Sandy Rancheria
Cold Springs Rancheria
North Fork Rancheria

OTHERS:

Rudy Martin
Joe Middleton
Jesse Midddleton
Gayle Fain
Sue and Hansel Kern
Penelope Critchlow
Mark Olson
Don Loweburg
John and Holly Vincent
Ned and Cheryl McDougald
Neil McDougald
Donald Winkler
Bruce and Donna Wimer
Ken Woodrow
Jake and Kerry Patton
Brian and Nonie Ressler
Joanna Ripley
Ronald Sanders
Martin Turner
David and Julie Bolsenga
Mark Williams
Melvin Carmen
Norma Turner
Mary Motola
Earl and Rita Vanderburgh
Sierra Mono Museum
Donald Peterson
Jennifer Schwarzenbach
Diane Newell
Edward Neville
James and Mary Ann Rick
Robert and Paula Rush
Walter Tobin
Robert DeMasters
Josh and Karen Freeman
Dan Rosenburg
Paul and Judith Lambrecht
Fed Mahoney

Castle Peak Associates, LLC
Mary Piasecki
Dan and Joye Forbes
Pete Lassotovitch
Jerry and Mary Ruth Page
John Viglienzoni
Sierra Foothill Conservancy
Sierra Forest Legacy
California Trout
California Cattlemen's Association
Don Jack
Audubon Society, Fresno Chapter
Central Sierra Audubon Society
Sierra Foothill Conservancy
Herman Walker
Dwight Barnes
Sierra Mono Museum
Brett Matzke
Ron Helland
Dwight Willard
David Barrows and Janice Ray
Bernadine Shelton
Clifford Boice
Sharon Morally
Walt Ellis
Sierra Forest Legacy
George Redd
Southern California Edison
Lyn-Mar Pond Guest Ranch
Mike Pirkl
Mike O'Connell
Circle W Ranch
Ben Roberts
Traian and Alina Micu
David Barrows and Janice Ray
Joyce B. Cooper
Anton and Joyce Inderbitzin
Michal L. Knapp
Martin Lynch
Bernadine Shelton
Steven and Patrica cottington
Cindy Bohna
Ben and Jill Kimbler
Gary and Tawny Pamplin
Dixie Jackson
Barbara Ferguson
California Native Plant Society
Virgle Anderson
James Anderson
Mark Anderson
Diane Bohna
Michael Knapp
Bart and Cynthia Topping
Nelda Wagner
Craig Wagner
Allen and Deborah Clyde
Quail Unlimited
Pacific Gas and Electric Company
Sierra Nevada Native American Coalition
Don Bickel
Gaylen Lee
Mairead Murray
Sharon Horton
Craig Schub and Michelle Sonoqui Gillette
Lois Conner
Glenda Atore
Barbara Ferguson
Mike O'Connell
Southern California Edison
California Cattlemen's Association
Mildred Loretta Armenta Trust
Daniel and Candy Atkins
Walt Ellis
Brian Zimmer
George and Floretta Wisseman
Ron Sanders
Bruce Coelho
Michael and Ellen Crill Trust
Karl R. Ellis Trust
Kecia Golay
John Kilburn and Paola Staeblin
Marlene M Lavell
Betty Martin

APPENDIX A
MAPS

APPENDIX B
RESPONSE TO SCOPING ISSUES

COMMENTS DETERMINED TO BE ISSUES

The following are non-significant issues brought forward through scoping, organized by non-significant issue categories or as general comments. An issue is a point of disagreement, debate, or dispute with the proposed action based on anticipated adverse effects on the physical, biological, or social environment.

ALREADY DECIDED (BY LAW OR FOREST PLAN, ETC.)

Your (scoping) letter begins by reciting Congressional intent to allow grazing on "suitable" land where consistent with other multiple use goals and objectives. It defines "suitability" as "the appropriateness of applying certain resource management practices to a particular area of land as determined by an analysis of the economic and environmental consequences and alternative use foregone." Reasons for non-suitability, as described on page 2 of your letter, include areas where livestock have been fenced out to enhance other resource values, areas where livestock access is restricted by physical barriers such as low forage production, and property ownership. All of these factors are present here. Lions Point Residents

Response

This issue is irrelevant to the decision being made. Suitability is defined as "The appropriateness of applying certain resource management practices to a particular area of land as determined by an analysis of the economic and environmental consequences and alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices." (CFR 219.3). Private lands within the project area have been excluded from the analysis of suitability with the exception of the DeMasters land, since the permittee has control over those lands through a lease. The presence of private lands within the vicinity of the project area does not alter the suitability of the grazing lands controlled by the Forest Service especially given that the Madera County Ordinance 6.24.010 considers lands with the Sierra National Forest that are not fenced as lands devoted chiefly to grazing.

The forest planning process identifies which of those capable lands are suitable for grazing under various management scenarios. Assessment of suitability is conducted to address whether livestock grazing is compatible with other land uses, resource values, social and economic values. Situations listed below may or may not be suitable for livestock grazing depending on the overall evaluation of potential effects and opportunities to mitigate adverse effects:

- Areas with potential social conflicts such as developed recreation sites and special use areas.
- Administrative sites and research facilities or study sites.

- Areas where livestock grazing is impracticable due to economic considerations, either from an agency or permittee perspective.
- Key wildlife habitat areas (threatened, endangered, sensitive and management indicator species).
- Areas with soil erosion hazard ratings of high or very high.
- Areas where ground cover (vegetation, litter, rock greater than 1/4 inch) is insufficient to protect soil from erosion. The minimum percentage cover will be 60% unless local data is available for use in setting more specific ground cover requirements.
- Weed infestations where livestock use could impede noxious weed control objectives.
- Unique habitats such as bogs, fens, jurisdictional wetlands, or rare plant communities.
- Areas where the existing condition or rehabilitation needs preclude grazing for the planning period

CONJECTURAL, NOT SUPPORTED BY SCIENTIFIC OR FACTUAL EVIDENCE

We are concerned about the impacts caused by cattle grazing in these allotments. Impacts of grazing on recreationists include: polluted water, the sight and sounds of domestic cattle; the odor of cattle manure and urine; the unnatural appearance of grazed meadows, degraded riparian areas, trampled meadows and lakeshores, eroded streambanks and the piles of manure littering trails, meadows and campsites. Central Sierra Audubon Society

Response
Without site-specific reference, the Forest Service cannot respond to this comment directly. In terms of water quality, it has been shown that fecal coliform typically affects a more localized area and the impacts attenuate in a reasonably short period of time (see below). This project relies on implementation of standards and guidelines and monitoring to minimize the time that animals spend in riparian areas, thereby minimizing potential nutrient inputs to surface waters.

OUTSIDE THE SCOPE OF THE PROPOSED ACTION

Contamination of drinking water by the proposed project is a potential significant impact to human health. The Forest Service should consider how to avoid or mitigate risk of harm to the personal health of recreating forest users from fecal coliform and giardia contamination related to cattle grazing pollutions in the water. Central Sierra Audubon Society

Response
This issue is outside the scope of this proposed action. The Forest Service is not responsible nor can they assure that water sources are uncontaminated by fecal coliform and/or giardia, especially since these pathogens are also carried and dispersed by wildlife.

The public is advised to treat all water obtained from NFS lands to avoid risk of contamination.

GENERAL COMMENT, OPINION, OR POSITION STATEMENT

Concern over standards for streamside chisel and trample and feel it is an area that needs work across the West. Protecting riparian and aquatic species requires a methodology that works to address multiple use management.
R. Brett Matzke – California Trout, Inc.

Response
Implementation of LRMP standards and guidelines is expected to address the streamside trampling threshold of 20% streambank disturbance. This issue of the standards is already decided by law, regulation, Forest Plan, or other higher level decision (LRMP, as amended). This standard is designed to limit the amount of streambank disturbance that can occur (which also limits the amount of livestock presence in and adjacent to the stream). However, it is recognized that previous approaches to stream channel monitoring have been inefficient since separate protocols were required for each riparian indicator. To further address this concern, the Sierra National Forest (and Region 5) is adopting a protocol *Monitoring Stream Channels and Riparian Vegetation – Multiple Indicators* (Idaho Technical Bulletin 2007-1; Idaho State Office, Bureau of Land Management (BLM) and Intermountain Region, U.S Forest Service) which integrates annual grazing use and long term trend indicators to evaluate current livestock grazing management practices to provide a more efficient and effective approach to monitoring streams and riparian vegetation. The monitoring procedures assess trampling and chiseling by livestock, stream channel and riparian vegetation condition.

APPENDIX C

Annual utilization monitoring summary from 1995 through 2009 for Castle Peak and Long Ridge Allotments:

Allotment	Key Area Name	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
Castle Peak	**Italian Bar**	Non use	Non use	--	1000 # RDM	--	--	1000 # RDM	1000 # RDM	1348 # RDM	1267 # RDM	2380 # RDM	1170 # RDM	--	--	--
	Powerline # 3	Non use	Non use	--	--	--	--	--	--	1460 # RDM	2611 # RDM	2084 # RDM	1953 # RDM	--	--	--
	Saginaw Creek/ Timberline Corral	Non use	Non use	--	--	--	--	--	--	--	--	--	3519# RDM	--	--	--
Long Ridge	**Long Ridge**	--	700 # RDM	700 # RDM	--	--	750 # RDM	907 # RDM	557 # RDM	555 # RDM	480 # RDM	1286 # RDM	2380 # RDM	--	--	--
	Horse Pasture	--	615 # RDM		1000 # RDM	--	1061 # RDM	1132 # RDM	1171 # RDM	1536 # RDM		3984 # RDM	2318 # RDM	--	--	--
	Dandy Flat	1000 # RDM	346 # RDM	800 # RDM	--	--	750 # RDM	1208 # RDM	1440 # RDM	595 # RDM	739 # RDM	2787 # RDM	1072 # RDM	--	--	--

- RDM = Residual Dry Matter (what is left after grazing in annual grassland rangeland type).
- RDM minimum is 700 #/acre from SNFPA for annual grasslands in satisfactory condition.
- Shaded areas show **non-compliance** with utilization standards.
- Non Use = Permittee took non use so no grazing occurred in those years

APPENDIX D
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2008 Bass Lake Ranger District Grazing Allotments: Long Ridge and Castle Peak Allotments - Hydrology Specialist Report

Prepared by: /s/ Keith A. Stone Date: June 5, 2008

Keith A. Stone, Bass Lake RD Hydrologist

Project Summary

The proposed action is to authorize continued livestock grazing on National Forest System lands within Long Ridge and Castle Peak Range Allotments. Livestock grazing would be administered to meet *Sierra National Forest Land and Resource Management Plan* (Forest Plan) (1992 as amended) direction for resource management using adaptive management in order to continue current progress toward desired resource conditions.

Applicable Management Direction

Sierra National Forest Land and Resource Management Plan (LRMP) Standards and Guidelines pertinent to watershed resources include:

69. Give primary management emphasis in riparian areas to protect and enhance the riparian ecosystem, riparian vegetation, water quality, soils, fish and wildlife resources.

75. Maintain or enhance productivity of Forest meadows to accommodate wildlife and range resources.

76. In stream reaches occupied by fish, any activity that results in trampling and chiseling of stream banks should not exceed 20% of any given stream reach. Controls such as re-routing trails, relocating dispersed campsites, and/or fencing of areas will be used to manage activities and improve riparian conditions in identified areas not meeting this standard.

88. Salt grounds will be located more than ¼ mile from streams, meadows and trails.

The following Standards and Guidelines pertinent to riparian areas come from the Sierra National Forest LRMP Amendment dated September 8, 1995:

A-5 (a) For all upland and riparian lands containing willows and other woody shrubs in “satisfactory condition”, limit use to < 20% annual leader growth per year.

A-5 (b) For all upland and riparian lands containing willows and other woody shrubs in “unsatisfactory condition”, limit use to < 10% annual leader growth per year.

A-6 (a) For all upland and riparian lands containing aspens and other desirable woody trees in “satisfactory condition”, limit use to < 20% by percent volume per year.

A-6 (b) For all upland and riparian lands containing aspens and other desirable woody trees in “unsatisfactory condition”, allow no use.

The following direction comes from the R5 Soil Management Handbook (2509.18, R5 Supplement 95-1):

Maintain soil productivity by implementing Forest Service Regional Soil Standards and Guidelines. Applicable soil standards and guidelines include:

- Limit soil disturbance that can lead to soil loss that will exceed the rate of soil formation.
- Maintain at least 50% soil cover

- Maintain soil porosity to at least 90% of total porosity found under natural conditions.

Standards and Guidelines from the SNFPA 2004 ROD that apply to this project include the following:

91. Designate RCA widths as described in the ROD.

93. Identify existing uses and activities in CARs and RCAs during landscape analysis. At the time of permit reissuance, evaluate and consider actions needed for consistency with RCOs.

100. Maintain and restore the hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features by identifying roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths. Implement corrective actions where necessary to restore connectivity.

102. Prior to activities that could adversely affect streams, determine if relevant stream characteristics are within their natural range of variability. If characteristics are outside of their range of natural variability, implement mitigation measures and short-term restoration actions needed to prevent further declines or cause an upward trend in conditions. Evaluate required long-term restoration actions and implement them according to their status among other restoration needs.

103. Prevent disturbance to streambanks and natural lake and pond shorelines caused by resource activities (for example, livestock, off-highway vehicles, and dispersed recreation) from exceeding 20 percent of stream reach or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots.

117. Assess the hydrologic function of meadow habitats and other special aquatic features during range management analysis. Ensure that characteristics of special aquatic features are, at a minimum, at Proper Functioning Condition, as defined in the appropriate Technical Reports USDI TR 1737-9, 1737-15, or 1737-11.

118. Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining bog and fen ecosystems and plant species that depend on these ecosystems. During project analysis, survey, map, and develop measures to protect bogs and fens from activities such as trampling by livestock, pack stock, humans, and wheeled vehicles. … Complete initial plant inventories of bogs and fens within active grazing allotments prior to re-issuing permits.

119. Locate new facilities for gathering livestock and pack stock outside of meadows and RCAs. During project-level planning, evaluate and consider relocating existing livestock facilities outside of meadows and riparian areas. Prior to re-issuing grazing permits, assess the compatibility of livestock management facilities located in RCAs with RCOs.

120. Under season-long grazing:

- For meadows in early seral status: limit livestock utilization of grass and grass-like plants to 30 percent (or minimum 6-inch stubble height).
- For meadows in late seral status: limit livestock utilization of grass and grass-like plants to a maximum of 40 percent (or a minimum 4-inch stubble height).

Determine ecological status on all key areas monitored for grazing utilization prior to establishing utilization levels. Use Regional ecological scorecards and range plant list in regional Range handbook to determine ecological status. Analyze meadow ecological status every 3 to 5 years. If meadow ecological status is determined to be moving in a downward trend, modify or suspend grazing. Include ecological status data in spatially explicit GIS database.

Under intensive grazing systems (such as rest-rotation and deferred rotation) where meadows are receiving a period of rest, utilization levels can be higher than the levels described above if the meadow is maintained in late seral status and meadow-associated species are not being impacted. Degraded meadows (such as those in early seral status where greater than 10 percent

of the meadow area in bare soil and active erosion) require total rest from grazing until they have recovered and have moved to mid- or late-seral status.

121. Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from grazing herbaceous vegetation to browsing woody riparian vegetation.

The Central Valley Regional Water Quality Control Board's Water Quality Control Plan for this area establishes surface water quality objectives for 19 parameters (CVRWQCB 2004). The water quality parameters that are discussed in this analysis are Bacteria and Sediment. Other parameters are either not likely to be affected by livestock grazing (for example, Radioactivity, Salinity) or are related to the selected parameters and qualitative effects would be similar (i.e., the type of Floating Material that may result from this project can be represented by the discussion of Bacteria, Turbidity is related to Sediment). In addition to these, the Antidegradation Policy applies, which requires that wherever existing water quality is better than the established objectives, the existing quality will be maintained. The objectives for the selected applicable parameters are:

Bacteria: In waters designated REC-1 (contact recreation), the fecal coliform concentration based on a minimum of not less than 5 samples for any 30-day period shall not exceed a geometric mean of **200/100ml**, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed **400/100ml**.

Sediment: The suspended sediment load and suspended sediment discharge rate of waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

The Water Quality Control Plan for the Sacramento and San Joaquin River Basins (CVRWQCB 2004), does not list unconfined grazing as a Water Quality Concern.

The State Water Quality Control Board has accepted the BMP program (USDA 2000) as the method used by the Forest Service to protect water quality. The practices, procedures and program comply with the requirements of the Federal Clean Water Act. They are also within the guidelines of the Water Quality Control Plans (Basin Plans) developed by the CVRWQCB. The BMPs applicable to livestock grazing are displayed in Table 1.

Table 1. BMPs applicable to Range Management.

Applicable BMP	How to Apply
Practice 8-1: Range Analysis and Planning	Performing the interdisciplinary environmental analysis for the NEPA decisions, updating the Allotment Management Plans, and issuing Annual Operating Instructions to the permittees.
Practice 8-2: Grazing Permit System	Administration of the grazing permits, including range readiness evaluations, stock checks for numbers and period of use, and monitoring of standards and guidelines.
Practice 8-3: Rangeland Improvements	Implement streambank stabilization, seeding / planting, or water source development projects as determined necessary, when problems cannot be best addressed through BMP 8-2.

Methodology and Scope of the Analysis

For this environmental assessment, perennial streams adjacent to or located within primary use areas were chosen for Proper Functioning Condition (PFC) assessment. The rationale is that cattle would preferentially concentrate in these areas and thus would be the most likely to impact such areas. Seasonal streams (e.g., Class IV and V) typically receive little use are assumed to be unaffected by grazing. The effects of the proposed action are evaluated in terms of effects on meeting applicable standards and guidelines and effects to beneficial uses. A separate report (RCO Consistency Report),

available in the project file, documents consistency with the Sierra NF LRMP, including the SNFPA ROD (USDA Forest Service 2004). Checklists and a Clean Water Act Worksheet were completed to assist with the determination of Extraordinary Circumstances for each allotment and are included in Appendix A.

A Cumulative Watershed Effects (CWE) analysis was conducted following established protocol, consistent with Regional Methodology for CWE assessment described in Forest Service Handbook 2509.22. This method assumes that an acre of road represents the greatest (common) management disturbance, and normalizes all other activities to this standard, called Equivalent Roaded Acres (ERAs). Established coefficients are used to convert acres of other land disturbing activities into ERAs.

CWE analysis for grazing activities focuses on riparian range. Riparian range is defined as meadows and areas within 100 feet of Class I, II, and III streams and 75 feet of Class IV streams. Three different coefficients are established that reflect varying disturbance levels in riparian range: normal grazing use (not causing impacts) in streamside riparian range has a coefficient of 0.02 ERA/acre. Normal grazing in meadows has a coefficient of 0.05 to reflect the greater sensitivity of meadows. Areas of known grazing impacts, wherever they are located, have a coefficient of 0.25 ERA/acre (5 times the normal meadow coefficient).

Because livestock grazing is widespread and ongoing, it is part of the contribution to ERAs to be considered for almost any land-disturbing project, and thus the ERAs generated as a result of the proposed grazing have been calculated (Appendix A, Table A1). However the total cumulative ERAs for all subwatersheds in the area have not been compiled. The grazing ERAs will be added to the management history of the affected subwatersheds and as new projects are analyzed. Should a subwatershed be found over the Threshold of Concern (TOC) as a result of the added grazing ERA, then additional monitoring and mitigation will be implemented in that subwatershed.

Affected Environment

Common to All Allotments

Soils in these allotments include the Auberry, Ahwahnee, Chaix, Holland, Coarsegold, and Tollhouse families. Many of these soil map units occur in steep terrain with low forage production, where grazing is unlikely to occur. Soils in the primary and secondary use areas are generally moderately deep to deep and moderately to somewhat excessively drained. They are considered moderately to highly sensitive, which is a measure of the decrease in productivity likely to result from disturbance (USDA 1995). The areas that are susceptible to cattle disturbance are generally meadows and riparian areas, where more concentrated use occurs due to higher forage production, and higher organic and moisture content in the soils make them more sensitive to trampling. These are the areas considered in the CWE analysis.

The ERA analysis found that the contribution of grazing in subwatersheds in these allotments ranges from 0.15% to 0.65% (with the lower TOC being 4.00%). No areas of known grazing impacts (with a coefficient of 0.25 ERA/ac) are present. For CWE analysis, all activities (including grazing) need to be analyzed. No timber harvest impacts are on record for these allotments; however, roads are present and have been assessed in the analysis. The total %ERA values range from 0.27 to 1.00 %, well under the lower TOC of 4.00%. See project file for a description of the CWE analysis, and Table A1 for the ERA calculations (Appendix A).

Designated Beneficial Use

Water quality in the project area is managed under the Central Valley Basin Plan for the San Joaquin and Sacramento River Basins (CVRWQCB, 2007). This plan designates the beneficial uses to be protected, water quality objectives, and an implementation program for achieving objectives. Table 2 shows the designated beneficial uses for the San Juaquin River drainage downstream of the allotments. Water bodies tributary to these major perennial drainages also fall under the same beneficial use criteria (i.e., the “Tributary Rule”). Assuming that the water quality currently meets or exceeds water quality standards, the water is subject to the Anti-degradation Policy, which requires that wherever existing water quality is better than the established objectives, the existing quality will be maintained (CVRWCB, 2004).

Table 2. Designated beneficial uses for major perennial drainages downstream of the project area.

Water Bodies	MUN	AGR	POW	REC1	REC2	WARM	COLD	MIGR	SPWN	WILD
San Joaquin River	X	X	X	X	X	X	X	X	X	X

Municipal and Domestic Supply (MUN) - Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Agricultural Supply (AGR) - Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation (including leaching of salts),stock watering, or support of vegetation for range grazing.

Hydropower Generation (POW) - Uses of water for hydropower generation.

Water Contact Recreation (REC-1) - Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

Non-contact Water Recreation (REC-2) - Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing.

Warm Freshwater Habitat (WARM) - Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Cold Freshwater Habitat (COLD) - Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Migration of Aquatic Organisms (MIGR) – Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.Spawning, Reproduction, and/or Early Development (SPWN) - Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Wildlife Habitat (WILD) - Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians,invertebrates), or wildlife water and food sources.

303(d) listing

A water body or segment of a water body (e.g., a fresh stream, river, or lake) that does not meet (or is not expected to meet) water quality standards may be considered a “Water Quality Limited Segment” (WQLS). These WQLS’s are added biennially by the CVRWQCB to the Clean Water Act Section 303(d) list of impaired waters. The western 39% of Castle Peak (4,595 acres) and the eastern 18% of Long Ridge (1,173 acres) lie within the Willow Creek HUC6 watershed. Willow Creek was added to the 2006 303(d) list for failing to meet the water temperature objective. The listed segment is 6.2 miles long and the source of impairment is unknown. The TMDL is scheduled to be completed by 2019. The relationship of this project to water quality concerns is documented in the Clean Water Act Worksheet, included in Appendix A.

Long Ridge Allotment

This allotment drains to the San Joaquin River via the Willow Creek and Big Sandy-Fine Gold HUC 6 watershed. Willow Creek flows into the San Joaquin River just downstream of Redinger Lake. There are approximately 21 miles of perennial streams and 257 miles of seasonally flowing streams in the allotment.

No meadows are present.

There are few perennial drainages in this allotment that would qualify as a “response reach”, thus PFC assessments were only conducted on three reaches in the allotment. The assessments are available in the project file, and results are displayed in Table 3.

Table 3. PFC Assessments in the Long Ridge Allotment, May, 2008.

Reach #	Reach Name	PFC Rating
LR-1	Fish Creek Trib to Kerckhoff Reservoir	FAR, trend unknown
LR-2	Unnamed Creek Trib to Kerckhoff Reservoir	FAR, upward trend
LR-3	Willow Creek Trib to San Joaquin	PFC

Reach LR-1 in Fish Creek (tributary to Kerckhoff Reservoir) rated as Functioning at Risk (FAR), trend unknown (Figure 1). Trend was indeterminate because no previous surveys had been conducted nor were there clear signs in vegetation distribution suggesting a trend. The character of the reach changes markedly downstream from a boulder-bedrock controlled Rosgen A2 to a lower-gradient C4 close to Kerckhoff reservoir. The lower-gradient segment was deemed best suited as a response reach, and thus was selected for the PFC survey. One thing common to all reaches was aggradation and an excess of fines present in the pools, with an estimated filling of approximately 25 to 35%. The source of the sediment is unknown, but may be from private land use activities upstream. The presence of fines in the pools could affect the hydrologic function (i.e., increase the width-to-depth ratio), which could increase hydraulic near-bank shear stress causing accelerated erosion. At present, however, there is no excessive bank erosion occurring. The stream can still access its floodplain and dissipate energies associated with a 25-year flood flow return event (the basis for PFC), and thus, the system rates FAR. Future annual monitoring will provide trend data and trigger points for any mitigation.

Reach LR-2, is an unnamed tributary to Kerckhoff Reservoir (Figure 1). The stream is a Class II, boulder-bedrock controlled Rosgen A-B2 stream channel. The system rated as Functioning at Risk with an upward trend. The FAR rating was due to vertical instability in some segments as well as aggradation in some pools. Vertical instability was evidenced by head-cutting and lateral scour of both the main stem channel and smaller class IV tributaries. Head-cutting and vertical incision is no longer occurring and has been arrested by the boulder-bedrock substrate as well as re-vegetation of the banks, suggesting this erosion is an older, historic feature, and not related to current land use activities. Aggradation and pool filling of coarse sand was also noted in some segments, with an estimated filling of approximately 20%. The source of the sediment is unknown, but may be from private land use activities upstream.

Reach LR-3 included a segment of Willow Creek near the confluence with the San Joaquin River (Figure 2). The segment observed for the PFC assessment is a Class I, boulder-bedrock controlled Rosgen B2-3 channel type. The system rated Proper Functioning Condition with the caveat that flow regulation from Bass Lake has caused riparian encroachment. This is typical of systems that have limited or restricted bankfull maintenance flows. Flow is restricted by dam release upstream (Bass Lake), and flows typical of a 1.5 to 2 year flood event do not occur. The riparian encroachment could have affects to the aquatic system, but would not restrict localized flood flows from accessing the flood plain and dissipating flood energies.

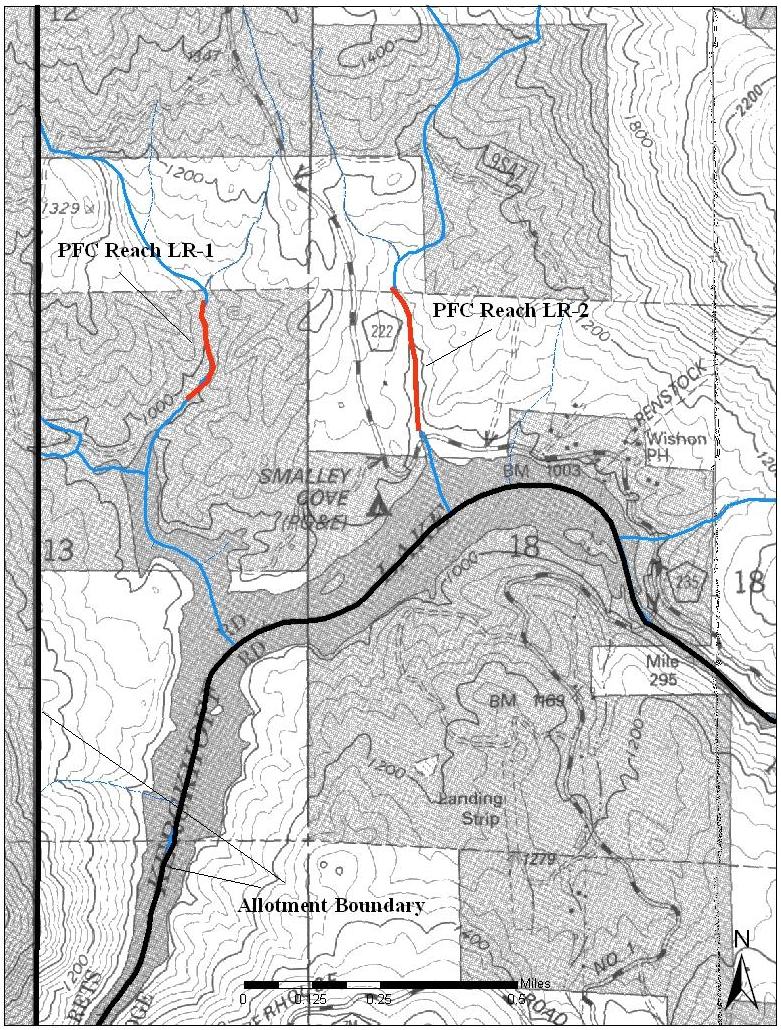

Figure 1. Location map of PFC reaches LR-1 and LR-2 in the Long Ridge Allotment

Spring Resources, Long Ridge Allotment:

A seasonal spring located along the Horse Shoe Bend Trail (UTM coordinates 11S 0279387; 4110907) showed signs of denudation and heavy use by livestock as a forage and resting area (Figure 3 and 3a). Chiseling was also evident along the banks of the spring as well as the channel that has developed below the spring. Excessive erosion or bank destabilization in excess of 20% was not observed. Recovery of the vegetation in the reach immediately downstream of the spring should be facilitated by exclosing the spring and associated drainage.

A spring located along county road 235 showed signs of denudation from chiseling and livestock resting (Figure 3b). There is not a well-developed channel below the spring, and thus the impacts were concentrated around the spring site. A spring exclosure and the development of an off-site water source will cease any further degradation.

Field observations in this allotment suggest that recent livestock use has not resulted in impacts to perennial stream channels or riparian areas that exceed applicable S&Gs.

The ERA analysis for this allotment (Appendix A) found that the contribution of the proposed grazing ranges from 0.25% to 0.61% ERA in the 10 subwatersheds in the allotment (see Table A1). No other land disturbing activities (with associated CWE) related to timber harvests have occurred in the Long Ridge

allotment. Current grazing impacts have not been identified as contributing factors to CWEs.

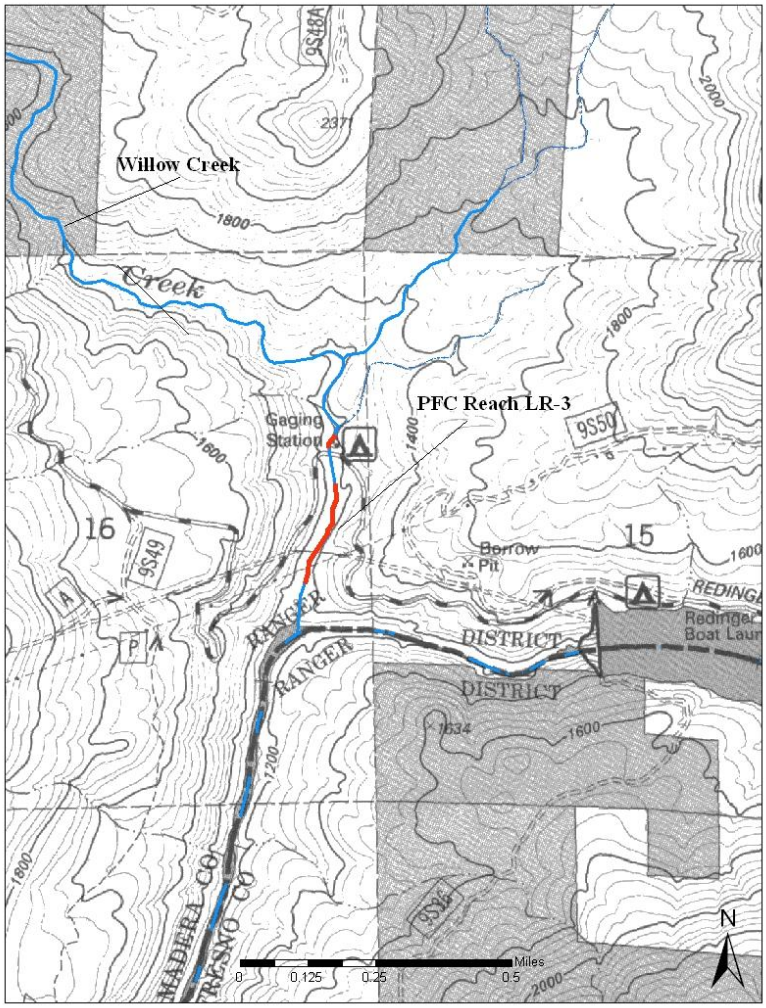

Figure 2. Location map of PFC reach LR-3 along Willow Creek in the Long Ridge Allotment.

Castle Peak Allotment

The western portion of this allotment drains to the San Joaquin River via the Willow Creek and Big Sandy-Fine Gold HUC 6 watershed. Willow Creek flows into the San Joaquin River just downstream of Redinger Lake. The eastern portion of the allotment is drained by the Redinger HUC 6 watershed via Saginaw Creek to the San Joaquin River. There are approximately 15 miles of perennial streams and 215 miles of seasonally flowing streams. No meadows are present.

There are few perennial drainages in this allotment that would qualify as a “response reach”, thus PFC was only conducted on one reach in the allotment (Figure 4). The assessment is available in the project file, and results are displayed in Table 4.

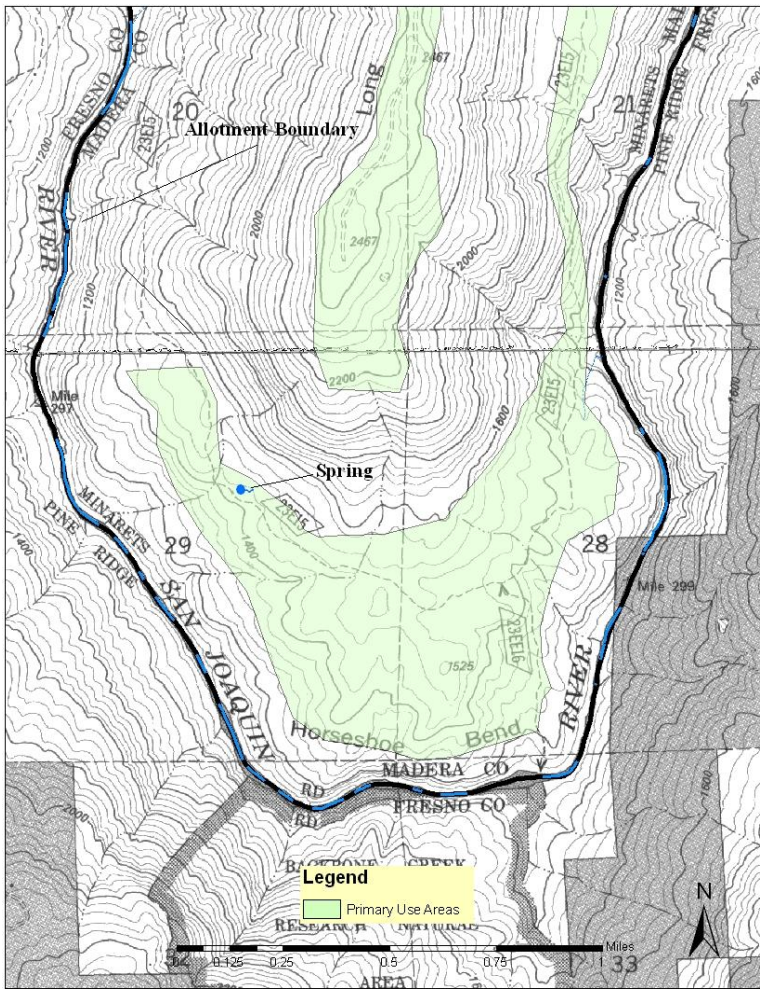

Figure 3. Location map of spring along the Horseshoe Bend trail in the Long Ridge Allotment.

Figure 3a. Photo to the SW showing denuded area in and around spring channel.

Figure 3b. Photo showing denuded area spring.

Table 4. PFC Assessment in the Castle Peak Allotment, July 2008.

Reach #	Reach Name	PFC Rating
CP-1	Saginaw Creek	PFC

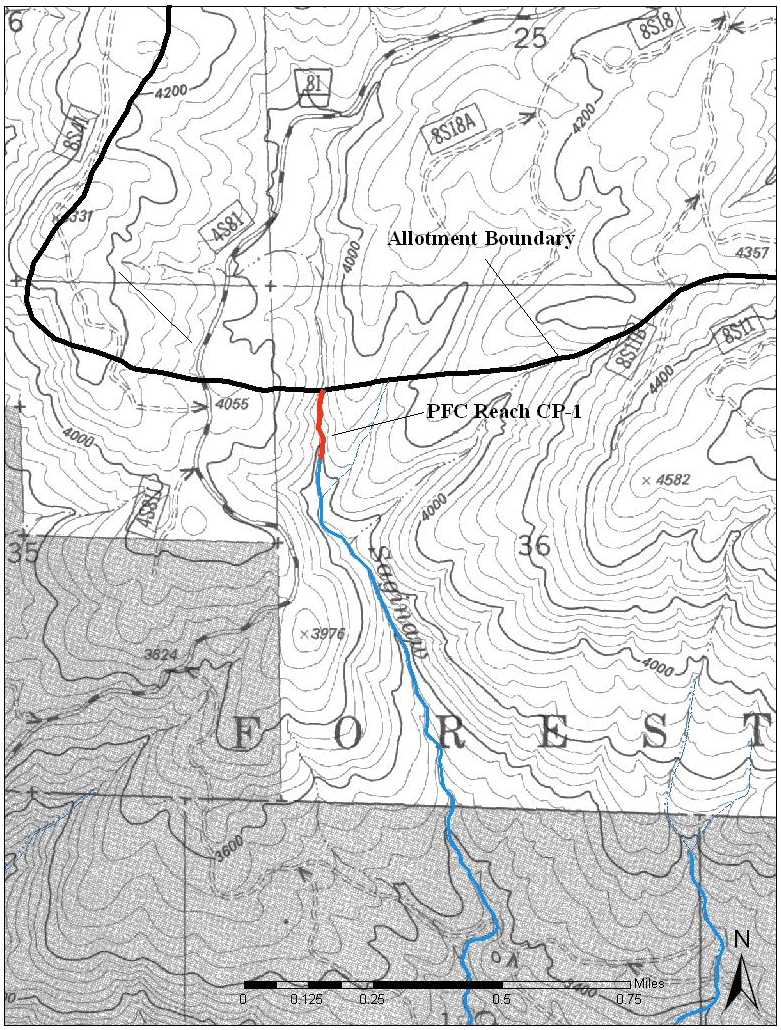

Figure 4. Location map of PFC reach CP-1 along Saginaw Creek in the Castle Peak Allotment.

Reach CP-1 is a Class I, boulder-bedrock controlled Rosgen A1 stream channel. The system rated PFC, although aggradation of coarse sand was observed in some pools, with filling estimated at 35%. The source of the sediment is likely from erosion caused by runoff from the Mammoth Pool Road. Due to the very steep nature of the valley sides, it is highly unlikely that any livestock activity will occur in this drainage.

Field observations in this allotment suggest that recent livestock use has not resulted in impacts to perennial stream channels or riparian areas that exceed applicable S&Gs.

The ERA analysis for this allotment (Appendix A) found that the contribution of the proposed grazing ranges from 0.15% to 0.37% ERA in the 17 subwatersheds in the allotment.

Design Measures and Allotment-Specific Actions

The following design measures relevant to watershed resources are included in the Proposed Action and apply to all allotments.

- Best Management Practices (BMPs) will be implemented, including:

BMP 8-1: Range Analysis and Planning. This environmental analysis by an interdisciplinary team will provide the basis for Allotment Management Plans. This analysis and AMPs constitute implementation of this practice.

BMP 8-2: Grazing Permit System. The grazing permits issued under the AMPs developed from this analysis are the means of implementing this practice.

BMP 8-3: Rangeland Improvements. This practice calls for identification and implementation of actions necessary for the protection of water quality related to livestock grazing. This can occur during range analysis, watershed assessment, or at any time during permit administration. New or improved water developments, stabilization of grazing-related channel and/or meadow instability, and modification of grazing management through the grazing permit are all examples of actions that constitute implementation of this practice.

- Properly Functioning Condition (PFC) assessments will be conducted in each allotment by SNF specialists at least twice during the life of the permit. Findings may require permit administration actions (BMP 8-3; SNFPA S&G 117).
- Streambank disturbance measurements will be conducted in each allotment by SNF specialists at least twice during the life of the permit. If findings show more than 20% of a stream reach is disturbed, permit administration actions may be required (BMP 8-3; SNFPA S&G 103).
- Maintain soil productivity by implementing Forest Service Regional Soil Standards and Guidelines. Applicable soil standards and guidelines include:
    - Limit soil disturbance that can lead to soil loss that will exceed the rate of soil formation.
    - Maintain at least 50% soil cover
    - Maintain soil porosity to at least 90% of total porosity found under natural conditions.

The following specific actions included in the Proposed Action are relevant to watershed resources.

Long Ridge Allotment:

- Cattle numbers will be increase by 19%, from 101 to 125 pair.
- Exclosures are to be constructed around existing spring resources with the possibility of developing an off-channel water source in these areas.
- Monitor streambank alteration along two reaches LR-1 and LR-2. Identified grazing impacts can be addressed in the Annual Operating Instructions. This will minimize the risk of livestock grazing contributing to CWE response or increasing the risk of a response in these areas.

Environmental Consequences

The Proposed Action

Literature Review of the Environmental Effects of Livestock Grazing – Effects of the Proposed Action Common to All Allotments

In their literature review of the effects of livestock grazing on riparian ecosystems, Kauffman and Krueger (1984) group the possible effects into four categories: effects on streamside vegetation; effects on channel morphology; effects on water quality; and effects on streambank soil structure. All of these are related to the amount of time animals spend in the riparian area. The effects of livestock on vegetation are considered in the Range and Botany analyses.

This analysis considers direct impacts to stream channels due to bank trampling and animal waste deposition in surface waters with implications for sedimentation, pathogens and nutrients. Associated indirect effects include stream channel widening that can trigger other channel adjustments, increases in turbidity, increases in water temperature due to increased solar radiation on widened and/or denuded

stream reaches, and decreases in dissolved oxygen related to rising temperatures. Management of the proposed grazing permits will use riparian utilization and streambank disturbance standards as the indicators of the amount of time livestock spends in riparian areas, and therefore of the potential effects on all four categories identified by Kauffman and Krueger (1984). Their review also notes that the most successful riparian management has been intensive livestock management, including frequent herding, to improve upland utilization and minimize the amount of time that cattle spend in streams.

Trampling: Trampling has been shown to increase soil bulk density proportional to grazing intensity (Kauffman and Krueger 1984), and is the most widespread effect of grazing in riparian areas (Bengeyfield 2006). Clary and Webster (1989) identify retention of streambank morphology and stability as an important element of riparian grazing objectives. The effect of trampling on stream channel morphology varies depending on the stream type; some studies have found no effect from grazing, while another found that overhanging streambanks were eliminated in just six weeks (Kauffman and Krueger 1983). Studies have concluded that streams in grazed areas can be widened up to 173% of the width of streams in ungrazed or rested areas.

Clary and Webster (1989) review several studies that generally agree that 40 to 50% utilization in riparian areas should protect riparian ecosystem function. Bengeyfield (2005) sets streambank disturbance standards on the Beaverhead-Deerlodge National Forest based on stream type. In some locations the standard is 30%. He has found that the stream bank alteration standard is the most powerful of the four triggers they measure (forage utilization, stubble height, and riparian shrub utilization being the other three) to determine when livestock should be moved from a pasture in order to maintain and improve stream channel condition. In these allotments, the riparian forage utilization standard is 40%, the riparian woody species utilization standard is based on condition with a maximum of 20% for areas in good condition, and the bank disturbance standard is 20%.

This project proposes to use range readiness monitoring to determine turn-out dates and herd management to discourage congregating in riparian areas - this will minimize the potential for trampling impacts, as well as the possible associated effects including changes in stream channel morphology, increases in turbidity due to increased erosion and animal wallowing in streams, increases in water temperature that could result from channel widening, and decreases in dissolved oxygen related to increasing water temperature. Monitoring of trample/chisel, riparian utilization, and PFC will provide the basis for identifying areas in need of additional measures to minimize trampling impacts through time. The Forest Plan allows a maximum of 20% bank disturbance in a reach. The potential impacts are not expected to affect downstream beneficial uses.

Bacteria / Pathogens: Studies have shown that the occurrence of fecal coliform in surface water samples is related to the presence of cattle (Stephenson and Street 1978, Gary and others 1983). Derlet and others (2004) found that the sample locations in their study that had ‘high’ levels of coliforms were all areas with heavy human use or commercial grazing. However, the samples they characterized as ‘high’ ranged from 200 – 550/100 ml, which is not necessarily high in relation to the water quality objective for bacteria (the geometric mean of at least 5 samples collected within a 30-day period shall not exceed 200/100 ml; not more than 10% of the total number of samples collected at a site within a 30-day period shall exceed 400/100 ml). Gary and others (1983) found relatively high fecal coliform counts upstream of their grazed study pastures (which were attributed to wildlife and soils), and significant increases in fecal coliform samples occurred only when at least 150 cows were present in a study pasture (185 and 210 acre pastures). They also found that livestock in their study spent approximately 5% of their time in streamside areas, and deposited 6-10% of their waste in the stream.

Atwill and others (2003) found that 7.1% of their sampled adult beef cattle were shedding *C. parvum* oocysts, and suggest that California ground squirrel populations are a more important source of *C. parvum* cysts; however, they also found that infected dairy calves shed 100 times the number of oocysts as infected adults, and that the proportion of adults shedding cysts increased with the duration of calving in the herd. Hoar and others (2001) found 1.1% of their adult beef cattle fecal samples (40 from each of 25 herds) contained *C. parvum*; 5.0% contained *Campylobacter* sp.; and 6.5% contained *Giardia* cysts. They suggest that adult beef cattle present a limited threat to human health from waterborne pathogens.

Atwill and others (2002) found that 3 m wide grass buffers on a 20% slope filtered 99.9% of *Cryptosporidium parvum* cysts. Howard and others (1983) also asserted that only the manure found

within 3 m of a stream contributed pathogens to the stream. For manure within this distance, delivery of pathogens to the stream is controlled by runoff (Stephenson and Street 1978). Lim and others (1998) found that a 6.1 m (20 ft) vegetated buffer reduced fecal coliform concentrations from as high as 2 x 107/100 ml to no measurable concentration. Tate and others (2006) found in their study on annual grasslands in the Sierra Nevada that fecal coliform was 94.8 – 99.995% contained within cattle fecal material, or within 0.1 m downslope of the fecal material. They also found that buffer efficiency declined as runoff increased. In a review of current knowledge, Buckhouse (2000) cites several studies that found that the bacteria derived from cattle defecating directly into streams was deposited in stream bottom sediments, and 90 percent died within 40 days.

This project will minimize pathogen introduction to surface waters by minimizing the time that animals spend in riparian areas and ensuring that riparian areas have adequate remaining vegetation to provide an effective filter. Riparian utilization, bank trample/chisel, and PFC monitoring will be used to document compliance with S&Gs. While bacteria and pathogens will enter surface water as a result of authorizing this grazing, literature review suggests a slight risk to human health. Standards and guidelines will limit the quantity of fecal pathogens entering streams, and beneficial uses will be protected.

Nutrients: Cattle manure is also rich in nutrients, which can be a concern for aquatic habitat. Lim and others (1998) found that a 6.1 m wide vegetated buffer reduced nutrient concentrations by 75%, with the exception of nitrate nitrogen (NO3-N) and ammonium nitrogen (NH3-N), which were not reduced by the filter. Gary and others (1983) found that mean ammonium nitrate concentrations in their study area ranged from 140 to 420 micrograms/l. Their study indicated that cattle presence was not correlated to changes in ammonium nitrate. Nitrate nitrogen ranged from 84 to 524 micrograms/l, and indicated that cattle presence did cause an increase in concentration. They concluded that the sources included upstream beaver dams as well as diffuse contributions from the streams within their study pastures. In a review of studies related to unconfined livestock impacts on water quality, Robbins (1979) noted that nutrient yields are not directly related to animal wastes, but are also dependent on hydrogeological and management factors. Campbell and Allen-Diaz (1997) monitored nitrate, orthophosphate, dissolved oxygen, temperature and pH in California streams under three different grazing intensities, and found no significant differences between treatments. They also note that site characteristics appeared to have a greater influence on water quality than their heavy grazing treatment. There are no streams in these allotments that appear to have excessive nutrient inputs, which would be identified by observation of heavy accumulations of manure in streams or algal blooms in unexpected areas.

This project relies on the management described above (under Trampling and Pathogens) to minimize the time that animals spend in riparian areas, thereby minimizing potential nutrient inputs to surface waters.

Sediment: Sediment in streams can be increased due to bank erosion (trampling/chiseling, bank sloughing, or channel widening due to overgrazing of streambank vegetation) or increased runoff and erosion resulting from trampling and defoliation of streamside areas (Kaufmann and Krueger 1984; Fitch and Adams 1998). All of these impacts are related to trampling creating compaction, bank disturbance, or overgrazing of streambank and floodplain vegetation. Johnson (1992) notes that many studies support the conclusions that heavy grazing nearly always results in decreased infiltration and increased sediment production, while moderate grazing affects these parameters but is frequently not statistically different than no grazing, and these effects are related to reductions in biomass and increases in bare ground.

This project relies on measures described above, including: range readiness monitoring to ensure that soil moisture is low enough to minimize compaction; riparian utilization standards to ensure that animals do not spend too much time in riparian areas; trample/chisel and PFC monitoring to ensure that livestock use meets S&Gs associated with RCOs; and BMPs to allow modifications through the Annual Operating Instructions to correct any problems that are identified.

Long Ridge Allotment

Direct and Indirect Effects - The effects of the proposed action on watershed resources is expected to be increased slightly relative to the existing condition due to a 19% increase in numbers, from 101 to 125 cow/calf pairs. If S&Gs regarding streambank disturbance are not met, additional adjustments will be

made.

Two of the reaches (LR-1, LR-2) assessed for this analysis rated FAR due to factors outside of the control of the Sierra NF (i.e., excess fines are likely derived from private lands upstream of the response reaches). Because of the FAR rating, these reaches will be further surveyed and monitored, and, if S&Gs regarding streambank disturbance are not met, additional adjustments will be made and/or mitigation implemented. Reach LR-3 (Willow Creek) rated PFC and is expected to remain at PFC with the proposed action.

The streams in this area are designated as Municipal Supply in the San Joaquin Basin Control Plan (CVRWQCB 2004a). Surface water used for municipal supply would be treated, so the slight risk of livestock introducing bacteria / pathogens is not expected to affect this use. Monitoring and enforcement of riparian utilization and streambank alteration standards will prevent grazing impacts from affecting water temperatures in 303(d) listed Willow Creek. See the RCO Consistency Analysis Report for more detail.

A spring located along county road 235 showed signs of denudation from chiseling and livestock resting (Figure 3b). There is not a well-developed channel below the spring, and thus the impacts were concentrated around the spring site. A spring exclosure and the development of an off-site water source will cease any further degradation.

An unnamed spring and associated channel along the Horseshoe Bend Trail shows signs of denudation from livestock forage and resting (Figure 3, 3a). Chiseling in and around the spring and channel has occurred, but has not exceeded the S&G disturbance threshold of 20%. An exclosure for the spring and part of the channel will be constructed to prevent further degradation. An off site water source may be developed for this site to further reduce impacts.

Cumulative Effects – The effects of the proposed action are generally similar to past livestock grazing effects; therefore, the cumulative effects are similar to the description of the existing condition. ERAs will not be changed by implementing the proposed action. The ERA method for grazing does not take animal numbers into account, therefore, the increase in numbers does not change the values that were calculated for the existing condition. Streambank alteration monitoring of the two FAR reaches will ensure that identified grazing impacts are addressed in the Annual Operating Instructions (BMP 8-2 and 8-3). This will minimize the risk of livestock grazing contributing to CWE response or increasing the risk of a response in these areas.

Castle Peak Allotment

Direct and Indirect Effects – The proposal is to change the on-date of all 300-cow/calf pairs to March 1st., with a re-allocation of 95 cow/calf pairs to remain in the allotment from July 1st through September 30th. The remaining 205-cow/calf pairs would be moved to the Haskell allotment for the remainder of the summer. This equates to a reduction of 5% of livestock numbers in this allotment. The effect of the proposed action on watershed resources, therefore, is expected to be decreased slightly relative to the existing condition. Field observations in this allotment suggest that recent livestock use has not resulted in impacts to stream channels or riparian areas that exceed applicable S&Gs. Trample / chisel data was not collected during this environmental analysis, but field observations suggest that livestock impacts to streambanks are not above the 20% allowable standard. The continuation of the same management is expected to continue to result in these standards being met.

One PFC assessment was conducted in this allotment. Reach CP-1 (Saginaw Creek) rated as PFC and is expected to remain in Proper Functioning Condition with the proposed action. Livestock use in or near this drainage is unlikely due to the steep nature of the valley slopes.

The streams in this area are designated as Municipal Supply in the San Joaquin Basin Control Plan (CVRWQCB 2004a). Surface water used for municipal supply would be treated, so the slight risk of livestock introducing bacteria / pathogens is not expected to affect this use. Monitoring and enforcement of riparian utilization and streambank alteration standards will prevent grazing impacts from affecting water temperatures in 303(d) listed Willow Creek. See the RCO Consistency Analysis Report for more detail.

Cumulative Effects – The effects of the proposed action are generally similar to past livestock grazing effects; therefore, the cumulative effects are similar to the description of the existing condition. Because,animal numbers are reduced 5% in this allotment under the proposed action, the total impacts will be reduced, and the cumulative effect will be a slight improvement in condition throughout the primary use areas. The ERA method for grazing does not take animal numbers into account, therefore, the decrease in numbers does not change the values that were calculated for the existing condition.

No Grazing

Effects of No Grazing Common to All Allotments

Trampling: Trampling caused by domestic livestock would cease throughout these allotments. Soil bulk density would recover at a slightly accelerated rate in areas where recent livestock use has slowed recovery. In areas where streambank morphology is affected by livestock use, channel form would also recover more rapidly with no grazing than it would with grazing, even given the standards and guidelines that would apply to that grazing.

Bacteria / Pathogens: Cattle would no longer serve as a source of bacteria and pathogens in these allotments. Inputs of all fecal pathogens would be reduced compared to the recent past. There may be little change in risk to human health, based on studies that indicate that bacteria are present in forest and rangelands even in the absence of livestock (Atwill 2003, Derlet and others 2004, Gary and others 1983, Robbins 1979). However, other studies (Stephenson and Street 1978) report a strong temporal correlation between fecal coliform and the presence of cattle, suggesting that there could be reductions in bacteria.

Nutrients: Cattle would no longer serve as a source of nutrients in these allotments. There would likely be little change overall in nutrients in surface waters, as indicated by studies (Campbell and Allen-Diaz 1997, Gary and others 1983, Robbins 1979) that suggest that site characteristics have a stronger influence on water quality than properly managed grazing.

Sediment: Cattle would not trample uplands, streamside areas, or streambanks, which would remove these effects as potential sources of increased sediment in allotment streams. Although studies support that moderate grazing does not usually result in statistically significant differences in infiltration and sediment production when compared to no grazing (Johnson 1992), non-statistical differences have been measured. Infiltration would probably increase slightly overall in the allotments, and sediment production would decrease slightly.

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Appendix A

CE Checklist

Wetlands, Floodplains, Municipal Supply Watersheds, Impaired Waters

Long Ridge and Castle Peak Allotments

☒ There are no wetlands in the project areas.
☐ There are wetlands in the project area, but no adverse effects are anticipated.

☐ There are wetlands in the project area, adverse effects are possible.

☐ There are no floodplains or flood-prone areas in the project area.

☒ There are floodplains or flood-prone areas in the project areas, but no adverse effects are anticipated.

There are floodplains and flood prone areas in the allotments. Livestock impacts were not observed to affect perennial stream or floodplain hydrologic function anywhere in either the Long Ridge or Castle Peak allotments.

☐ There are floodplains or flood-prone areas in the project area, adverse effects are possible.

Municipal supply watersheds *(FSM 2542*) include surface supply watersheds, sole source aquifers, and the protection zones around well and springs.

☐ There are no municipal supply watersheds or drinking water source areas in the project area.

☒ There are municipal supply watersheds or drinking water source areas in the project areas, but no adverse effects are anticipated.

The streams in this allotment flow into the Upper San Joaquin River. Municipal use is a designated beneficial use in the San Joaquin River. Livestock grazing could increase bacterial / pathogenic contamination, and sedimentation at some locations. However, it is not expected to increase sedimentation at the stream reach scale or to affect water yield. Water used as municipal source would be treated, so the existing potential for minor bacterial / pathogenic contamination is not expected to impact this use

☐ There are municipal supply watersheds or drinking water source areas in the project area, adverse effects are possible.

Is it likely that the degree of potential effect of the proposed action on wetlands, floodplains, or municipal supply watersheds constitutes an extraordinary circumstance.

☒NO ☐YES

Is the project area adjacent to or tributary to a water quality limited stream segment or lake *(from current 303(d) list or a TMDL)*?

☐NO ☒YES – complete at least Section A, Clean Water Act Worksheet.

☒ The proposal complies with Executive Order 11988 (Floodplain Management).

☒ The proposal complies with Executive Order 11990 (Protection of Wetlands).

☒ The proposal complies with the Clean Water Act.

☒ The proposal complies with the Safe Drinking Water Act.

☒ The proposal complies with Forest Plan Amendment direction, including the direction given for RCAs and CARs in the Sierra Nevada Forest Plan Amendment.

Attach any additional information pertaining to this proposal. This may include required SWCP's, BMP's, design criteria, other mitigation, Clean Water Act Worksheet, maps, etc.

Hydrologist, Soil Scientist, and/or District Watershed Staff signature: K. Andrew Stone – District Hydrologist

Date: June 5, 2008

COMMENTS:

Clean Water Act worksheet included in this report

Clean Water Act Worksheet

Introduction

"No discharge ... shall be permitted which will cause or contribute to significant degradation of the waters of the United States" 40 CFR 230.10(C). This means that the effects of our actions on water quality and the aquatic ecosystem must be short-term and of limited extent. They must not cause any long-term adverse effects on aquatic health or stream channel integrity. For this project, waters of the US include San Joaquin River, Willow Creek, Fish Creek, Saginaw Creek, and their tributaries.

In order to meet the intent of the Clean Water Act and the agency's responsibilities, we must incorporate the appropriate watershed conservation or best management practices in all our plans, contracts, and other requirements and we must also ensure their implementation, irrespective of whether a 404 permit is needed or not.

The following activities do not require a permit under Section 404 of the Clean Water Act; however, to qualify for an exemption, the activities and the possible discharges/runoff associated with them must not change the use of the receiving waters, impair flow or circulation patterns, or reduce the reach of the waters of the U.S. 1 Activities which do not require a 404 permit will also be held to the same standard.

- normal farming, silviculture, and ranching;
- maintenance, including emergency repair of currently serviceable structures such as dikes, dams, levees, riprap, and bridge abutments or approaches;
- construction or maintenance of farm or stock ponds or irrigation ditches 2 and the maintenance (but not construction) of drainage ditches;
- construction of temporary sedimentation basins on a construction site which does not include placement of fill in the waters of the U.S.;

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[1] Waters of the U.S. are defined in 33 CFR 328.3. While the emphasis is on interstate commerce, for our purposes the definition and it's subpoints are broad enough to include all of our stream systems, their tributaries, adjacent wetlands, and special aquatic sites.

[2] Construction of irrigation ditches is exempted only if the ditches are to be used solely for agricultural purposes.

- activities for which a State has an approval program under Section 208(b)(4) of the Clean Water Act;
- farm roads, forest roads, or temporary mining roads which are constructed and maintained in accordance with best management practices to avoid impairment of flow and circulation patterns and adverse effects on the aquatic environment.

The basic best management practices for roads are explicitly listed in the Clean Water Act; therefore, our compliance with these baseline provisions should be documented in equal detail (see the next page).

While best management practices are mentioned in detail for roads, normal ranching and silviculture activities must also incorporate watershed conservation practices / best management practices. We must ensure the implementation of these practices in order to maintain the exemptions that allow us to operate without applying for 404 permits for most or all of our land disturbing activities. In addition, implementation of best management practices, watershed conservation practices, and other mitigation measures is necessary in order to maintain the Forest's standing as a management agency with the Division of Water Quality.

Proposed Activities

What is the analysis area for the proposed activities? (Describe in detail or attach map.) Think about: the issues; if a watershed is appropriate, what is the right size (3th or 4th order watersheds, HUC6, something else); if not a watershed, provide a rational.	The proposed activity is continued livestock grazing in the Long Ridge and Castle Peak Allotments. The analysis area includes the entirety of Sierra NF subwatersheds (equivalent to the HUC8 scale), which have any portion within one of these allotments.
Describe the proposed activities including watershed conservation or best management practices, and watershed management, aquatic, and riparian management requirements and mitigation measures.	Grazing will continue as existing, with the exception that numbers will be increased by 19% in Long Ridge allotment, and reduced by 5% in the Castle Peak allotment. See Proposed Action for further detail.

Baseline/Mandatory Provisions Associated with Roads [3]

Do the existing roads and the roads associated with the proposed activities meet the following baseline (aka mandatory) provisions (33 CFR 323.4(6): i. permanent and temporary roads and skid trails shall be held to the minimum feasible number, width, and total length; ii. all roads, including skid trails, shall be located sufficiently far from streams and other water bodies to minimize discharge into waters of the	No roads will be constructed or reconstructed for this project.

[3] While roads for ranching/grazing, and silviculture and temporary mining roads are explicitly mentioned in the Act, all roads must meet these basic requirements. Roads associated with other aspects of mining are usually covered under nationwide or regional permits; individual permits may be necessary in some circumstances.

Baseline/Mandatory Provisions Associated with Roads 3

U.S. (except for portions which must cross these waters) [think about the terrain, whether there is an effective filter strip, connected disturbed areas, etc.]; iii. the road fill shall be bridged, culverted, or otherwise designed to prevent the restriction of expected flood flows; iv. the fill shall be properly stabilized and maintained during and following construction to prevent erosion; v. during construction, the encroachment of heavy equipment into the waters of the U.S. (and adjacent wetlands) outside of the construction boundaries will be minimized [aka no equipment wallowing around outside the construction limits]; vi. vegetative disturbance in waters of the U.S. will be minimized during design, construction, and maintenance; vii. the design, construction, and maintenance of road crossings will not disrupt the migration or other movement of aquatic species inhabiting the water body; viii. borrow material will be taken from upland sources when feasible; ix. discharges will not take or jeopardize the continued existence of a threatened or endangered species or adversely modify or destroy critical habitat of such species; x. discharges into breeding and nesting areas for migratory waterfowl, spawning areas, and wetlands shall be avoided if practical alternative exist; xi. discharges shall not be located in the proximity of a public water supply intake; xii. the discharge shall not occur in areas of concentrated shell fish production; xiii. the discharge shall not occur in a component of the National Wild and Scenic River System; xiv. the discharge shall to free of toxic pollutants in toxic amounts; xv. all temporary fills shall be removed and the area restored to its original elevation;	No roads will be constructed or reconstructed for this project.

State Designation and Standards

What are the beneficial uses as designated by the State?	

State Designation and Standards

What water quality parameters will most likely be affected by the proposed activities and what are the applicable State water quality standards for these parameters?	Sediment: narrative standard plus turbidity standard. Bacteria: In waters designated REC-1 (contact recreation), the fecal coliform concentration based on a minimum of not less than 5 samples for any 30-day period shall not exceed a geometric mean of 200/100ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100ml.
Is the affected area or analysis area adjacent to, tributary to, or downstream of an impaired stream or stream segment as listed in the State's nonpoint source assessment, 303(d) list, 305(b) reports, or a TMDL. If so, what is the analysis area's relationship and/or contribution to the impaired stream or stream segment?	Yes. The western 39% of Castle Peak (4,595 acres) and the eastern 18% of Long Ridge (1,173 acres) lie within the Willow Creek HUC6 watershed. Willow Creek was added to the 2006 303(d) list for temperature, with a scheduled TMDL completion date of 2019. The source of the temperature violation is listed as 'unknown'.

The following are derived from 40 CFR 230 which is based on the Clean Water Act, Section 404 (b)(1) guidelines. They are to be used to guide, document, and disclose our assessment of the possible effects of the proposed activities on aquatic resources and to demonstrate compliance with the Clean Water Act. Remember that the term discharge includes runoff from roads and other disturbed areas, sediment from activities in or adjacent to the drainage network, as well as the direct placement of materials in the waters of the U.S. Depending of the issues identified during scoping and the level of controversy associated with the proposed actions, this worksheet may be the principle means of documenting compliance with the Clean Water Act. This worksheet is intended to be part of the project record; portions of it may be included in the associated EA or EIS. Key issues identified during scoping will receive more detailed analysis and explanation. Remember to consider both streams and lakes/ponds within and downstream of the analysis area.

Physical Characteristics

What are the characteristics of the affected drainage network or lakes/ponds. Think about: stream types (per Rosgen or other classification system) or a general description of the streams; valley morphology;	Stream types range from steep bedrock headwaters (A channels) to low-gradient channels with finer-grained substrate (C channels). Sediment is the main threat to water quality. Field observations and PFC assessments targeted reaches with sensitive channel types (based on Rosgen 1996), which overlapped primary use and/or key areas.
Will the activities as proposed result in continued or increased delivery of sediment to the drainage network? Think about: activities adjacent to the drainage network; activities occurring on unstable, highly erodible, or highly dissected slopes; connected disturbed areas;	Potentially. Livestock can increase sediment delivery, most notably by trampling stream banks, which disturbs streambank vegetation and can destabilize or collapse the bank. Riparian utilization standards and the streambank disturbance standard (maximum of 20% in a reach) will be monitored along sensitive reaches in Fish Creek to prevent exceedance of utilization standards, thereby limiting the potential for increased sedimentation.

Physical Characteristics

Will the proposed activities affect the stream's substrate? Think about : particle size distribution of materials entering the drainage network; duration of discharge; movement and settling of discharged materials including depth of receiving waters, flow velocity, and degree of turbulence; possible changes in overall particle size distribution in the stream;	Potentially, at a local scale, by increasing sedimentation which can cause fining of the streambed. Riparian utilization standards and the streambank disturbance standard (maximum of 20% in a reach) will be monitored along sensitive reaches in Fish Creek to prevent exceedance of utilization standards, thereby limiting the potential for increased sedimentation.
Will the proposed activities result in stream channel adjustments - lateral or vertical? Think about: sensitive stream types; channel aggradation or degradation; accelerated bank erosion, including bank trampling; changes in channel cross-section;	Potentially, to a moderate degree at a site scale. Grazing impacts can cause lateral channel adjustments to result from direct stream bank trampling / destabilization, and vertical adjustments to result from increased overland flow caused by large areas of severe compaction or animal trails. Bank trampling and destabilization may occur at a local scale within these allotments (i.e., a site within a meadow). However, the set animal numbers and enforcement of standards and guidelines will prevent impacts from becoming severe enough to cause large-scale stream channel adjustments (i.e., affecting an entire meadow, or larger area). Large areas of severe compaction are not expected to result from the grazing as proposed – annual monitoring and enforcement of riparian utilization standards will prevent the development of such areas.
Will the proposed activities result in significant changes in hydrologic regime? Think about: expansion of the drainage network; substantial changes in soil characteristics or ground cover; timing of flows; augmentation, diversion, or obstruction of flow; substantial changes in water yield; changes in storm runoff characteristics; static water levels or exaggerated high or low flows;	No. It is possible for livestock grazing to affect hydrologic regime. Historic grazing affected hydrologic regime in the past in the Sierra Nevada, and potentially within these allotment areas. However, the set animal numbers and enforcement of standards and guidelines will prevent trampling impacts from becoming severe enough to affect the hydrologic regime.

Chemical Characteristics

Chemical Characteristics

Will the proposed activities result in changes in temperature or dissolved oxygen? Think about: changes in both summer and winter water temperatures [due to changes in width/depth ratios, overhead cover, stream flows, etc.]; oxygen depletion; hypolimnetic flows [flows released from the bottom of a reservoir that is very cold and usually oxygen depleted];	Not likely. Livestock grazing can affect temperature by reducing shade through directly removing vegetation that provides shading or by increasing the W/D ratio of streams. Continuing grazing in these allotments will not reduce vegetative shading. S&Gs 120 and 121 (riparian utilization / woody plant utilization) will be monitored and enforced. If standards are exceeded, grazing management will be adjusted. Continuing grazing is also not expected to result in extensive W/D alterations. S&G 103 (maximum 20% bank disturbance) will be monitored and enforced. Maintaining streams at PFC means that W/D may not be increased. If W\D increases occur, grazing management will be adjusted.
Will the proposed activities result in changes in water chemistry including, nutrients, metals, other acutely or chronically toxic materials? Think about: eutrophication; ambient concentration of constituents including pathogens [aka the existing condition]; possible pathways for the introduction, relocation, or increase in contaminants including pathogens; change in availability of nutrients and toxic constituents or trace elements; sedimentation; 4	Nutrients are contributed when animals defecate in or near water bodies. The frequency of this is related to the amount of time that the animals spend in riparian areas, which is managed by enforcement of riparian utilization and streambank disturbance standards. There may be spatial / temporal changes in the locations where this occurs, but overall there is not expected to be an increase compared to the existing condition since the proposal is to continue an ongoing use. Potentially, increases in sedimentation, as described above. There are no toxic materials/substances associated with this project.

Biological Characteristics

How will the proposed activities affect the aquatic or adjacent riparian ecosystems? Think about: interaction between aquatic and riparian ecosystems [including woody debris, food supplies, movement corridors, etc.]; interaction between riparian and upland ecosystems; community structure and function; habitat and species diversity;	See Aquatics analysis.

[4] Although sediment is usually considered a physical characteristic, fine sediments play a role in the chemical realm by binding nutrients and metals and thereby temporarily or permanently changing their ability to interact with their surroundings.

Biological Characteristics

How will the proposed activities affect aquatic organisms including fish, aquatic insects, amphibians? Summarize the results of a biological limiting factors analysis. OR Think about: all life stages or age classes; mobility/access/migration; water quality & temperature [remember the varying sensitivities to toxic constituents]; frequency, distribution, quality of habitats - spawning, rearing, adult, overwintering; population dynamics & quality of life [reproduction/recruitment, survival/growth, mortality - disease, predation, competition, fishing pressure, etc.]	See Aquatics analysis.
Do the proposed activities affect aquatic or riparian dependent threatened, endangered, or sensitive species? If so, summarize the findings of the BA/BE.	See Aquatics analysis.
Will the proposed activities affect other species associated with aquatic and/or riparian ecosystems? Think about: loss or change in breeding and nesting areas, escape cover, travel corridors, food sources; bioaccumulation of contaminants;	See Aquatics analysis.

Special Aquatic Sites

Will the proposed activities affect designated State or Federal sanctuaries, refuges, or other special areas?	See Aquatics analysis.

Special Aquatic Sites

Will the proposed activities affect wetlands? Think about: changes in hydrologic regime (dewatering, other changes in the duration of saturated conditions); flow and circulation patterns into and through the wetland; infiltration capacity; capability of the wetland to function as a water quality filter; capability of the wetland to facilitate aquifer recharge; changes in habitat values or the nature of the wetland (open water vs. wet meadow, etc.);	See Aquatics analysis.
Will the proposed activities affect riffle/pool complexes [aka most of our aquatic habitats]? Think about: sedimentation of pools and riffles; aeration of substrate; loss of habitat variety;	See Aquatics analysis.

Human Use Characteristics

Will the proposed activities affect municipal and private water supplies? Think about: quantity and quality of water; possible effects on treatment methods/technologies currently being used;	No. Grazing is not known to currently affect water supplies, and the proposal will essentially continue past activity, through permit administration will prevent long-term increases in effects to riparian areas and water quality. Existing water treatment methods are adequate given the existing and expected water quality.
Will the proposed activities affect recreational and commercial fisheries? Think about: suitability of fish for human consumption; access to fishing sites; long-term productivity and/or the community structure and populations;	No. Fisheries are not currently affected by the existing grazing, which would be continued.
Will the proposed activities affect suitability for water related recreation? Think about: water quality standards for body contact recreation; water quantity; aesthetics - appearance, odor; whether the activities facilitate other, incompatible or inappropriate activities;	Possibly, at spatially and temporally limited scales. The presence of fecal coliform and other pathogens will be increased in relation to a no grazing scenario, but will be similar to existing conditions. In and downstream of stream reaches where cattle defecate within 1m of the stream, there will be increases in fecal-borne bacteria for approximately 50m downstream (Larson 1998). Bacteria settle to the bottom, but stay alive for several weeks and are re-suspended if the bottom sediment is disturbed. During storm and spring runoff events, bacteria will likely be increased in all streams. There is no evidence that current livestock grazing is affecting recreational beneficial uses, and the effect is not expected to increase as a result of this project.

Cumulative Effects

Summarize the activities/projects which should be considered for cumulative effects	9 acres of tractor-based activity occurred in subwatershed 523.4002 in the Castle Peak allotment in 1994. This has been accounted for in the CWE analysis. Unmanaged dispersed recreation, primarily OHV use and car camping, in all allotments. Roads are also included in the CWE analysis.
Summarize the residual effects and how they might combine with the proposed action's.	The greatest potential for cumulative effects would result from livestock trampling impacts in stream channels that are already cumulatively affected by roads and timber harvest activities. These channels would be receiving increased water and/or sediment, and in flashier flows than under natural conditions. Their stability could be compromised. Trampling impacts could increase their vulnerability to instability and erosion by the increased flows, and increase the rate of stream channel adjustment. This is not likely because the streambank disturbance standard is expected to protect streams from these types of responses, and if livestock are identified as contributing to cumulative watershed effects, changes in livestock management would be made through the permit administration process to remedy the problem.
What are the results of the on-site assessment of stream conditions?	During IDT field visits to stream reaches for this project, livestock grazing impacts were not found to be contributing to cumulative effects in any of the observed areas.
Has a stream health reconnaissance been done in the past three years? Is one planned in the near future?	No. Stream assessments were performed on many of the area streams in the mid to late 1990s. Spot assessments performed for this analysis indicate that stream conditions have generally improved since that time. Yes, future monitoring of all identified sensitive reaches will be conducted annually.

Prepared By	Date
K. Andrew Stone – District Hydrologist	June 5, 2008

Sources for most of the items in the table:

33 CFR 320. 1993.
40 CFR 230, Section 404 (b)(1). 1993.
U.S. Army, Corps of Engineers. Information Paper - Exempted Activities.
USDA-FS-R2/Ohlander. 1994. Clean Water Act - Monitoring and Evaluation, Part 1 - Legal Framework.

References:

Larson, R.E. 1998. Fact Sheet No. 25: Manure Loading into Streams from Direct Fecal Deposits. University of California Cooperative Extension. Available online via: http://danr.ucop.edu/uccelr/h25.htm (Accessed August 29 2007)

Subwatershed	Subws Size (ac)	Streamside Riparian Range (Ac) - **Long Ridge**	Streamside Riparian Range (Ac) - **Castle Peak**	Total Streamside Riparian Range (Ac)	Meadow Riparian Range (Ac)	Total Riparian Range	%Subws in Riparian Range	Streamside ERA's (Ac)	Meadow ERA's (Ac)	Total Grazing ERA's (Ac)	Grazing % ERA's	Roads ERA	Total ERA's	Total % ERA's
504.0052	1128.8	58.1	85.5	143.6	0	143.6	12.7	2.872	0	2.872	0.25	0.16	3.0	0.27
504.1001	1593.9	0	204	204	0.3	204.3	12.8	4.08	0	4.08	0.26	0.23	4.3	0.27
523.2002	925.8	0	123.6	123.6	0	123.6	13.4	2.472	0	2.472	0.27	0.3	2.8	0.30
523.4002	206.8	0	15.4	15.4	0	15.4	7.4	0.308	0	0.308	0.15	0.33	0.6	0.31
523.0053	1024.5	153	0	153	0	153	14.9	3.06	0	3.06	0.30	0.19	3.3	0.32
504.0051	1097.4	75.1	60.6	135.7	0	135.7	12.4	2.714	0	2.714	0.25	0.93	3.6	0.33
523.0014	927.7	0	111.7	111.7	0	111.7	12.0	2.234	0	2.234	0.24	0.87	3.1	0.33
523.0054	983.9	130.8	14.2	145	0	145	14.7	2.9	0	2.9	0.29	0.55	3.5	0.35
523.1052	85.0	15.6	0	15.6	0	15.6	18.4	0.312	0	0.312	0.37	0	0.3	0.37
504.1051	1186.6	0	176.1	176.1	0	176.1	14.8	3.522	0	3.522	0.30	0.86	4.4	0.37
523.2051	209.1	0	27.2	27.2	0	27.2	13.0	0.544	0	0.544	0.26	0.23	0.8	0.37
523.0056	1354.1	0	232.4	232.4	0	232.4	17.2	4.648	0	4.648	0.34	0.74	5.4	0.40
523.0009	494.0	62.1	0	62.1	0	62.1	12.6	1.242	0	1.242	0.25	0.78	2.0	0.41
523.0058	688.7	0	116.3	116.3	0	116.3	16.9	2.326	0	2.326	0.34	0.6	2.9	0.42
504.0001	493.6	0	74.7	74.7	0	74.7	15.1	1.494	0	1.494	0.30	0.62	2.1	0.43
523.0057	836.3	0	146.4	146.4	0	146.4	17.5	2.928	0	2.928	0.35	0.82	3.7	0.45
523.0017	360.5	0	46.4	46.4	0	46.4	12.9	0.928	0	0.928	0.26	0.73	1.7	0.46
523.0055	976.7	0	182.7	182.7	0	182.7	18.7	3.654	0	3.654	0.37	0.93	4.6	0.47
523.0007	1357.1	288	0	288	0	288	21.2	5.76	0	5.76	0.42	0.71	6.5	0.48
523.1051	457.9	113.8	0	113.8	0	113.8	24.9	2.276	0	2.276	0.50	0.36	2.6	0.58
523.0052	760.3	188	0	188	0	188	24.7	3.76	0	3.76	0.49	0.92	4.7	0.62
523.1004	284.3	28	35.8	63.8	0	63.8	22.4	1.276	0	1.276	0.45	0.6	1.9	0.66
523.1001	41.7	12.8	0	12.8	0	12.8	30.7	0.256	0	0.256	0.61	0.15	0.4	0.97
523.1003	59.4	6	13.3	19.3	0	19.3	32.5	0.386	0	0.386	0.65	0.21	0.6	1.00

NOXIOUS WEED RISK ASSESSMENT – SIERRA NATIONAL FOREST
Bass Lake Range NEPA 2009

PURPOSE: The Sierra Nevada Forest Plan Amendment ROD (January 2004) contains standards and guidelines aimed at reducing the spread of noxious weeds in Sierra Nevada National Forests. One of these standards requires a noxious weed risk assessment for all NEPA analyses involving ground-disturbing activities. The purpose of the risk assessment is to identify vectors for weed spread and changes in habitat that might favor the introduction of new weed species into a proposed project area, or might further spread weeds that already exist within the project boundaries, and to identify appropriate prevention measures that can be incorporated into the Proposed Action to eliminate or minimize weed spread.

RANGER DISTRICT: Bass Lake, Madera County

PROJECT NAME AND DESCRIPTION: Bass Lake Range NEPA 2009. Castle Peak and Long Ridge Allotments – 10 year permits.

PROJECT LOCATION AND GENERAL DESCRIPTION: The Sierra National Forest proposes to authorize continued livestock grazing on Castle Peak and Long Ridge allotments while implementing specific standards and guidelines for resource protection. The project is generally located in the northwest and central portions of the Sierra National Forest, adjacent to Redinger and Kerckhoff Reservoirs within the Bass Lake Ranger District, Sierra National Forest, California. Please see Figure 1.

These allotments are located adjacent to the community of North Fork, California (Appendix Map A-1). The legal location for this project is as follows: Castle Peak Allotment: T8S R23E S 21, 26-28, 33-36, T9S R23E S 1-5, 9-12, 14-16, T9S R24E S 31-33, 4-9, 17, 18; Long Ridge Allotment: T9S R22E S 1, 2, 13, 24, T9S R23E S 5-9, 16, 17, 18, 20, 21, 28, 29; Mount Diablo Base Meridian. There are approximately 13,386 acres of national forest system lands within the project area.

The need to continue authorized commercial livestock grazing must be met in a manner that is consistent with the management direction provided by the Sierra National Forest Land and Resource Management Plan (SNF LRMP) which provides standards and guidelines to help the manager achieve the goals, objectives and desired conditions of the Forest.

The Forest has determined that based on a site specific analysis, the need for commercial livestock grazing in the Long Ridge and Castle Peak allotments is not likely to be met in a manner that is consistent with Forest Plan standards and guidelines by continuing current management. The Forest is, therefore, proposing to implement a changed season of use that is in line with range readiness parameters, as the current livestock on-dates are generally too early for plant phonological growth and soil conditions on a normal year, establish additional designated monitoring areas for monitoring forage utilization and long term conditions, protect several riparian springs from livestock use, construct and/or complete heavy maintenance on rangeland improvements such as fences and corrals within both allotments and develop water to improve livestock distribution.

Please see the Environmental Assessment for these allotments for full details of the proposed action and alternatives.

VEGETATION TYPES WITHIN PROJECT AREA:
Vegetation communities present within the project area consist of annual grasslands, blue oak woodlands, scatttered gray pine, and chaparral. The project area has a Mediterranean climate with cool, moist winters and warm, dry summers. The annual precipitation is about 33 inches with most of the precipitation falling between November and April with isolated thunderstorms cocuring in the summer months.

RISK FACTORS <u>ASSUMING NO NOXIOUS WEED PREVENTION MEASURES</u>:

Soil Disturbance: High__<u>X</u>__ Moderate____ Low_____
Explain: Churning of soil by hooves of cattle and horses used to herd cattle, bare soil caused by early season or late season grazing. The risk is lowest under Alternative 1, and highest under Alternative 2 (see EA).

Travel routes to project (equipment in and out, etc.) High____ Moderate_<u>X</u> Low____
Explain: There are known populations of medusahead, klamathweed (St Johnswort), yellow starthistle, tocalote, Italian thistle, 3 species of broom, and bull thistle on private land along the major roads leading to the project area. However, the driving of cattle transport vehicles on primary system roads would not be expected to increase spread via roadways, although it is possible that seeds or plant parts that attach to vehicles in infested areas of the base ranch might be deposited in the allotments or in the National Forest on the way to the allotments.

Overall risk of transporting new infestations into project area: High__<u>X</u>_ Mod.__ Low __ Low_____
Explain: Seeds of noxious weeds may be carried into the allotments from base ranches or from low-elevation allotments (see table below). Methods of possible weed transport are: vehicles and trailers used to move cattle, coats and hooves of cattle and horses, and possibly manure. Research indicates that in some cases manure has been shown to contain viable seeds of noxious weeds (Olson, 1999).

Are there known infestations in project area?
The following table displays information on known infestations for the allotments and the permittees' base ranches:

	Location of base ranch and lower elevation allotment (if applicable)	**Known noxious weeds at base property**	**Known noxiuos weeds in allotment**	**Prevention measures being taken by permittees and/or Forest Service to minimize weed spread**
Long Ridge	Foothills of eastern Fresno County between Clovis and Prather	Italian thistle, probably tocalote, possibly yellow starthistle.	Italian thistle, tocolote, Spanish broom, klamathweed	Forest botanist has been invited by permittee to inventory base ranch to see which weeds might be present and to discuss prevention and control strategies.
Castle Peak	Base ranch is in Three Rivers (foothills of southeastern Fresno County).	Base ranch weed status unknown. Probably tocalote and Italian thistle, possibly yellow starthistle.	Italian thistle, tocolote, klamathweed, bull thistle.	Forest Service botanist and rangeland manager to work with permittee to inventory base ranch and spring allotments. Specific prevention actions will be implemented as appropriate.

Will there be project-induced habitat changes that would favor noxious weed spread?
See consequences section of EA. Alternative 3 reduces the season of use in the early and late seasons, reducing the likelihood of bare ground and disturbed soil, thus lessening the chance of spread of the primary weeds known to occur in the allotment. Please see the EA for a comparison of the alternatives.

Have weed surveys been conducted in or near the project area?
Surveys were conducted by Forest Service botanists in 2007 and 2008 for noxious weeds and invasive non-native plants.

In addition to information from botanical field surveys, information from 2001 and 2006 benchmark range monitoring transects was used to assess the state of the allotments with regard to noxious weeds. Although non-native species dominate the herbaceous layer is is typical in the annual grasslands of California, no noxious weeds were detected in the transects. Cheatgrass (*Bromus tectorum*) appears infrequently and does not contribute significantly to species composition in the transect data. Cheatgrass is generally present as one of several non-native annual *Bromus* species in the annual grasslands of the Sierra National Forest and is not causing the problems with fire frequency and ecosystem processes seen in desert areas.

The following noxious weed species are known to occur in the allotments:

- Italian thistle (*Carduus pycnocephalus*): occurs scattered throughout the two allotments in a distribution pattern typical of the central Sierra Nevada foothills. Areas of intense

human disturbance such as the Smalley Cove campground (bordering the Long Ridge Allotment) have particularly large infestations, but otherwise infestation levels are either light or comparable to surrounding lands. Italian thistle has been spreading over the past 10 years in the central Sierra in both grazed and ungrazed woodlands. Southern California Edison Company has mapped Italian thistle within its Big Creek 4 license area, and has been treating infestations annually since 2006. The Forest Service has done very little control to date due to limited budgets and personnel.

- Tocolote (*Centaurea melitensis*): Tocolote also occurs scattered throughout the allotments in a pattern similar to that seen in the surrounding foothills. The Sierra National Forest has largely given up attempts to control this weed except in cases where new small infestations are found in otherwise clean areas. This is because tocolote is ubiquitous in the foothill zone of the Forest, and it may be less ecologically damaging than the similar yellow starthistle (*Centaurea solstitialis*). More data is needed to ascertain whether tocolote is any more dense or widely distributed due to cattle use in the allotments.
- Spanish broom (*Spartium junceum*) is known to occur within the bed of the San Joaquin River downslope of the allotments, and along Willow Creek above its confluence with Whiskey Creek. A new infestation of about 50 shrubs was recently discovered by Southern California Edison Company along the west side of Willow Creek in the Long Ridge Allotment. The Forest Service will likely remove this infestation within the next few years. The presence of these infestations and the potential for spread is likely unrelated to livestock use.
- Bull thistle: there are a few small infestations of bull thistle in the Castle Peak allotment. Bull thistle is more often associated with montane vegetation in the Sierra NF rather than foothill vegetation and has not been observed spreading in the foothills within the area of the two allotments.
- Klamathweed: a few small patches of klamathweed were observed but the allotments are largely free of this weed. A biological control agent has been successful in keeping this weed at manageable levels in the west, and this agent is known to occur in Madera County and is expected to continue to control the weed over the long term.

No California A or B rated noxious weed species were found in or near the allotments, nor are any known to occur on the base ranches of the permittees. Yellow starthistle, a high-priority weed for the Sierra National Forest and partner agencies, is not known to occur near or within the allotments.

RECOMMENDED MITIGATION TO MINIMIZE ABOVE RISKS: Weed prevention measures are as follows:

The Forest Botanist and Rangeland Manager will work with permittees over the term of the permit to minimize weed spread by:

1. Gain knowledge of weeds that might be present on the base ranch.
2. Strategizing to minimize the spread of weeds if they are determined to be present at the base ranch. Possible measures to be implemented as appropriate:

a. Clean transport vehicles thoroughly after leaving infested areas and prior to entering national forest (especially to avoid weed seeds being carried on wheels, undercarriage, etc.)
b. For any hay used on National Forest System lands, use only weed free hay once a certification program is implemented in California.
c. Assisting Forest Service with weed control work when appropriate, either by directly controlling weeds and reporting such work to the Forest Service, or by cooperating on timing of grazing and/or movement of animals to best manage weed infestations (within the practical bounds of management of the allotment).

RISK OF WEED INTRODUCTION AND SPREAD IF WEED PREVENTION MEASURES ARE IMPLEMENTED: Low.

Prepared by:

/s/ *Joanna Clines* September 7, 2009
JOANNA CLINES **Date**

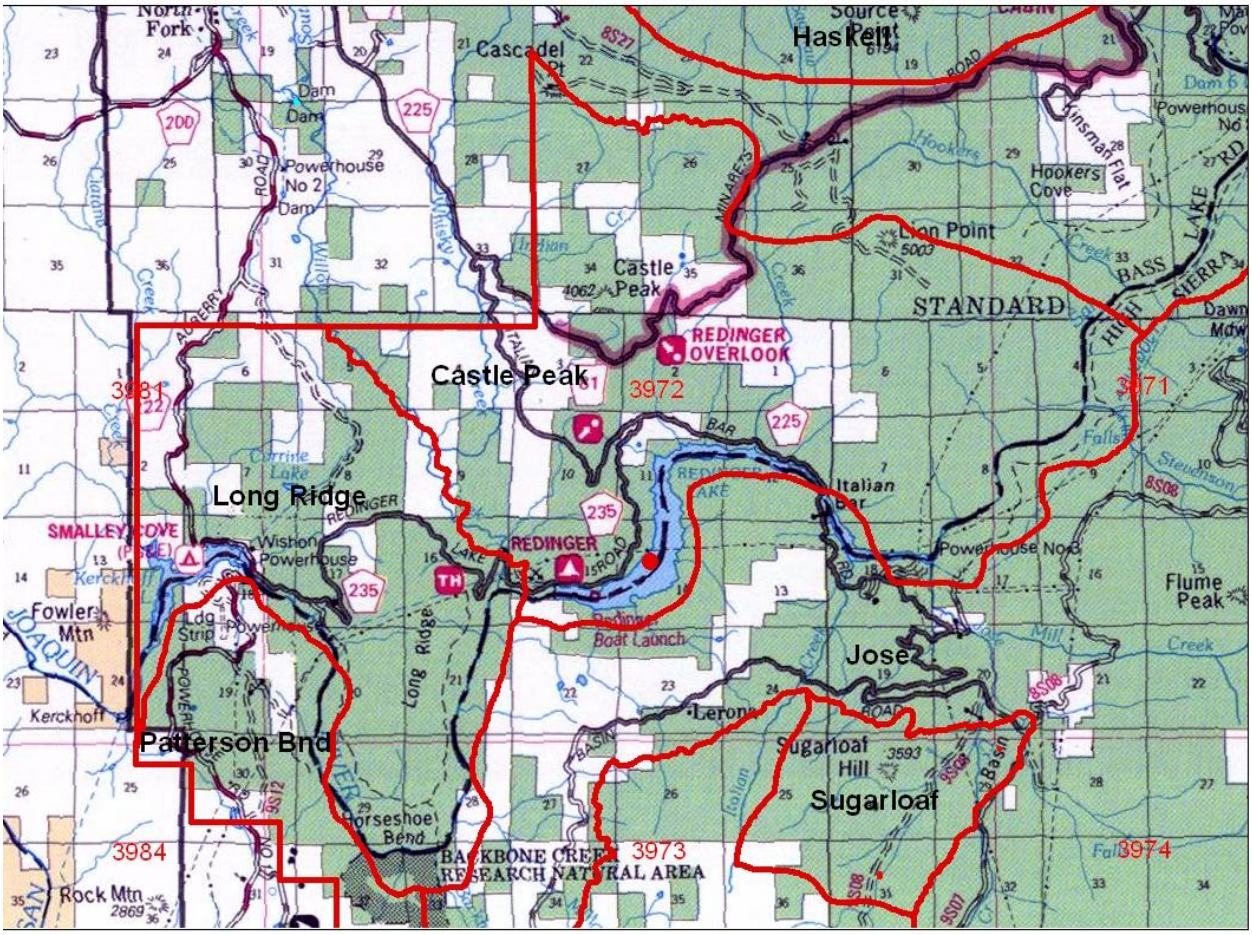

Figure 1. Location of Castle Peak and Long Ridge Allotments.

Forest Service

Bass Lake Ranger District

57003 Road 225
North Fork, CA 93643
(559) 877-2218
(559) 877-3108 FAX
(800) 735-2929 CA Relay Service

File Code: 1950/2210 **Date:** July 14, 2009
Route To:

Subject: Range Specialist Report - Long Ridge and Castle Peak Grazing Allotments

To: District Ranger, Bass Lake RD

Narrative Description of Allotments

The following are descriptions of the current management for the two annual grassland allotments in this analysis: Castle Peak Allotment and Long Ridge Allotment, Bass Lake Ranger District, Sierra National Forest.

CASTLE PEAK ALLOTMENT

Table 1. Current management in Castle Peak Allotment

Allotment	Pasture	Livestock			Period of Use	
Castle Peak	Redinger	100	cattle	cow/ calf	January 1	June 30
Castle Peak	Redinger	100	cattle	cow/ calf	February 1	June 30
Castle Peak	Castle Peak	100	cattle	cow/ calf	March 1	June 30
Castle Peak	All Units (including DeMasters Private Land)	40	cattle	cow/ calf	July 1	Sept 15

The Castle Peak Allotment lies just north of the San Joaquin River and about 5 miles east of the town of North Fork. Elevation varies from 1,300 feet to 4,970 feet. Approximately 3,145 acres within the allotment are private lands. The permittee leases private land within the allotment. All areas presently grazed are considered open grassland to scattered brushlands with a dense understory of annual forage species.

While early records are not too reliable, it is safe to assume that the Castle Peak Allotment history was similar to that of other allotments in the Sierra Nevada.
The area was probably grazed by sheep during the 1870s and 1880s and changed to cattle by the early 1900s. Heavy, year round use by cattle occurred during the 1920s and then tapered of during the drought years of the 1930s. Use increased greatly during the war years of the 1940s and leveled off in the early 1950s. Form 1963 through 1970 the use averaged 593 animal months (181 cattle).

The grazing strategy since the 1970s has been low intensity. The pattern of use has been based on elevation. The stock are turned out along the river and as the season progresses moved to higher elevations. Salt and riding are used to improve distribution within the allotment. It is the permittee's responsibility to place and move salt as needed to maintain herd health and grazing distribution. The permittee trucks cattle to the allotment area. In 1984 an einvironmental assessment was conducted to authorize additional stock on the allotment. This decision increased the permitted numbers from 220 pair from March 16 to June 30 to 300 pair which were progressively turned out from January 1 through March 1 (100 pair on the 1st of each month January through March) with an off-date of June 30.

Past grazing use has been based on 1960 analysis data that has been conservative and indicated 808 Animal Months. Permitted use since 1984 has been around 1,400 head months and authorized use has been less that this due to range readiness concerns and later actual turn-out dates. The 1984 Analysis Summary Report for the Castle Peak Allotment states that 1400 head months could be sustained without environmental damage.

Livestock are trucked to private land (owned by the permittee) within the allotment above Redinger Lake and dispersed throughout the two grazing units from there. Stock are kept dispersed through riding and salt distribution by the permittee. The livestock are driven to the higher elevation range in the Haskell Allotment in late June.

Benchmarks are located in key forage areas (Italian Bar and Redinger Bench) for assessing annual forage utilization. A permanent range condition and trend monitoring transect is located at the Italian Bar key area.

LONG RIDGE ALLOTMENT

Table 2. Current management in Long Ridge Allotment

Allotment	Pasture	Livestock			Period of Use	
Long Ridge	Long Ridge Horse Pasture (gather pasture)	~100	cattle	cow/ calf	Early March at Livestock Turnout	Early June at Livestock Gather
Long Ridge	Smalley Cove Pasture (PG&E/Forest Service) (gather pasture)	~50	cattle	cow/ calf	June 1	September 30*
Long Ridge	All Units	101	cattle	cow/ calf	March 1	June 15
Long Ridge	All Units	40	cattle	cow/ calf	January 1	June 30

*** Trespass use has been a problem in this pasture**

While early records are not too reliable, it is safe to assume that the Long Ridge Allotment history was similar to that of other allotments in the Sierras. Use was heavy in the 1920s, decreased through the drought years of the 1930s, increased greatly during the 1940s and leveled off in the early 1950s (post war). During the 1970s the season of use was March 16 through June 15 with 140 cow/calf and 33 head temporary numbers.

The majority of the livestock (101 Cow/calf pair) are trucked to the Long Ridge Corral and dispersed throughout the allotment around Long Ridge, Horseshoe Bend, and Corrine Lake areas. Forty cow/pair are driven from adjacent private land to the Long Ridge Allotment. Stock are kept dispersed through riding and salt distribution by the permittee. The livestock are gathered into Long Ridge Corral and Smalley Cove Pasture in mid to late June. Some cattle, mainly stragglers remain in the Smalley Cove Pasture until September. Livestock (~40 pair) are driven from Long Ridge through the Castle Peak Allotment and up to Haskell Allotment.

Benchmarks are located in key forage areas (Dandy Flat, Horse Pasture and Long Ridge) for assessing annual forage utilization. Permanent range condition and trend monitoring transects are located in Dandy Flat and the Horse Pasture.

Table 3. National Forest Acres Proposed for Continued Livestock Grazing by Unit.

Allotment	Unit	Suitable Acres	Total Unit Acres*
Castle Peak	Redinger	956	4803
	Castle Peak	529	3957
Long Ridge	Long Ridge	1387	4239
	Horse Pasture	192	193
	Smalley Cove Pasture	154	154
TOTAL			13,386
* Total Unit Acres does not include private land acreage			

Evaluating Annual Use in California Annual Grasslands

Traditional concepts of range condition and trend are probably not applicable to California annual grasslands. Variations in precipitation and temperature cause far more variation in species composition and production than do grazing influences, although livestock grazing can result in temporary changes in species composition (succession). As a general rule, if adequate residual dry matter is left at the end of the grazing season, then condition and overall trend of the annual grasslands may be considered meeting or moving towards desired condition (R5 Range Environmental analysis Handbook. 1969). A moderate degree of grazing maintains satisfactory litter cover, or residual dry matter (RDM) in order to protect against soil deterioration and obtain efficient production from the fluctuating quantity of forage on foothill ranges (Bentley and Talbot 1951). Using RDM for monitoring has become the most widely accepted method for managing annual grasslands in California (Stromberg et al 2007).

Residual Dry Matter

It has been demonstrated that changes in yearly species composition can result from differences in the amount of herbaceous plant residue present at the time of germination in the fall. Low amounts of residual dry matter (RDM) in the fall tend to result in dominance of undesirable forage plants with minor amounts of the more desirable forage plants in the composition consisting of the following representative species:

Aira caryophyllea (silver hairgrass)

Briza minor	(Little quaking grass)
Micropus californica	Micropus
Plantago major	Common plantain
Hypochaeris glabra	Smooth cat'ear
Eremocarpus setigerus	(Turkey mullein)
Hordeum jubatum	(Foxtail barley)
Bromus tectorum	(Cheatgrass)
Madia sp.	(Tarweed)
Hemizona sp.	(Tarweed)

High or adequate amounts of RDM present in the fall tend to result in dominance of desirable forage plants with an acceptable amount of less desirable forage plants consisting of these representative plant species:

Avena barbata	(Slender wild oat)
Avena fatua	(Common wild oat)
Bromus hordaceous	(Soft chess, blando brome)
Lolium multiflorum	(Italian ryegrass)
Melica californica	California melic
Erodium cicutarium	(Redstem filaree)
Medicago polymorpha	(Calif. Burclover)
Vicia Americana	(American vetch)
Lotus humistratus	(Hill lotus)
Trifolium cyathiferum	Bowl clover
Trifolium variegatum	(White-tip clover)
Vulpia sp.	(Annual fescues)

Summer annual forbs are a natural part of the annual grasslands. Grazing can influence the abundance of summer annual forbs, although late spring moisture is the major influence. Late spring grazing of grasses may reduce transpiration and thereby give a growth advantage to summer annuals through increased moisture availability. Some of the summer annual forbs are problem plants, such as yellow star thistle and fiddleneck. Changes in livestock grazing management will not change the presence or absence of these plants. Heavier grazing increases the visibility of summer annual forbs, but does not significantly increase the abundance of these plants in most situations (R5 Range Environmental Analysis Handbook 1969).

Assessing Condition in California Annual Grasslands

Since vegetation is the principal feature that changes over time due to management or other causes, it must be periodically re-inventoried. Precise sampling of large areas for quantitative data on density, cover, frequency, standing crop of other vegetation attributes is difficult because of the high spatial variability of these attributes, especially at the population level. Further, the variability in time due to seasonal or annual conditions, grazing, decomposition, replacement of species by ecological equivalents, or other chance influences renders such data of low value for planning purposes (George, M. etal, 1990)

For monitoring, specific locations should be chosen in identified key areas, critical areas, and/or benchmark areas. Sampling should allow calculation of confidence interval, and sources of bias

should be carefully considered. The aim is not to obtain values of a whole management unit, but to consistently compile a relatively precise record of change as a basis for correcting and fine-tuning management.

To characterize the annual grassland vegetation type by abundance or dominance of groups of species (Desirable, Less desirable, and Undesirable forage plants), sampling using frequency transects or step-point transects are methods to quickly inventory and group the plants into the dominant groupings. These methods are much faster and fairly reliable than clipping plants, separating by species, and weighing several quadrat frames to determine dominance or abundance by major plant groups. Frequency transects using a 10cmX 10cm quadrat frame is a method that is quick and easy to use, especially if the Range Manager has a good knowledge of annual grassland plant species. This size frame was selected for use in annual grasslands because larger quadrat sizes (20cmX 20cm or larger) tend to give frequencies greater than 80 percent. To determine change, the frequency of a species must be at least 20 percent, and no greater than 80 percent.

Quadrats are placed along a meter tape at 1 meter intervals in areas be sampled. A total of 60 quadrat samples per site are recorded. Rangeland Managers must decide how many quadrat samples will be needed to assess condition. A relative frequency of a group of Desirable and an acceptable amount of Less desirable forage plants are calculated. Once the relative frequencies of the plant groups are determined, use the (Draft) Annual Grassland Scorecard (see appendix). Sampling should be done when plants are mature enough for easy identification in the field. Plants should also be collected and pressed for mounting on acetate sheets and filed as part of the analysis record. (See Transect Herbarium Sheet section)

If a step-point transect method is used, select a course through the type which will give a proportionate measurement of better or poorer conditions, or which will otherwise reflect average annual grassland type condition. Estimate the distance through the type which will provide an adequate sample. Then select the number of steps necessary between measurements in order to obtain 100 tallies along the sampling line. At each predetermined interval, place a pointer at a notch or mark on the apex or toe of your shoe and record each forage plant hit with the pointer just above ground level (2-3”). If no plant is hit, continue the pointer to the ground level and record: soil, litter, gravel, rock, or moss. Each measurement is defined as a HIT. Remember that ground surface hits (soil, litter, gravel, etc.) and plant species tallies make up the 100 transect hits.

Record plant hits in the appropriate space ie. Desirable, Less desirable, or Undesirable forage plants on the form. Exclude hits in excess of the limitations for certain forage as indicated in the Limitations list. Record the excess as Undesirable forage plants.

Limitations

The proposed classification of rangeland plant species is based on a normal or desired composition of rangeland in the upper condition classes or desired condition class. In the annual grass rangelands, certain borderline species are considered “ desirable” or “less desirable” if their occurrence and abundance is compatible with a plant community in good or desirable condition.

However, if they are over – abundant to a point of creating an unbalanced plant community, which may result in less than a desired community, from a livestock grazing RVR, the

percentages in excess of certain limitations must be considered as undesirable. For example, in the case of certain forbs with a high forage value such as filaree, trefoils, and clovers, the percentages in excess of 15% to 20% may result in an unacceptable "weed patch" with little soil holding capability and/or soil protection qualities in late summer or early fall. A list of annual grassland forage plants and their proposed percent limitations are found in the attached list.

Ground Cover

Ground cover includes plant, litter, and soil cover. Note the term "ground cover" is not synonymous with "bare ground". However, bare ground is synonymous with soil cover. Ground cover is tallied by taking point samples along the transect. The corners and tines of the quadrat frame (10cm X 10cm) provide reference points for 4 samples per quadrat. At each one – meter interval, the points on the frame are used for recording basal plant cover, litter cover, and soil cover, rock, and cryptograms. Taking four point samples per quadrat at the selected interval along a 60-meter tape or three 20 meter transects gives a total of 240-point samples for ground cover.

Other applicable SNFPA Desired Conditions:

- Species composition and structural diversity of plant and animal communities in riparian areas, wetlands, and meadows provide desired habitat conditions and ecological functions.
- The ecological status of meadow vegetation is late seral (50 percent or more of the relative cover of the herbaceous layer is late seral with high similarity to potential natural community).
- The Sierra Nevada Forest Plan Amendment states that grazing utilization in annual grasslands will maintain a minimum of 60 percent cover.
- A diversity of age classes of hardwood shrubs is present and regeneration is occurring.

Vegetation composition in California annual grasslands varies annually and is controlled more strongly by climatic fluctuation than by grazing and management factors (Jackson and Bartolome 2002). Therefore, the species composition data should be interpreted with care. The management of grazing in annual grassland systems is usually based on the residual dry matter (RDM) that remains at the end of the season. The amount of RDM remaining can influence the species composition and production the following year (Bartolome et al. ANR pub. #8092). Factors considered most important in evaluating annual grassland condition are high cover (low bare soil) and productivity rather than species composition. The bare soil standard in the Sierra Nevada Framework is less than 40%.

The California annual grasslands are a converted system dominated by introduced species. Because they do not have dominant perennial species, the species composition changes every year, and the dominant species are all introduced, the concept of seral stage and similarity to potential natural condition/vegetation can not be applied to annual grasslands. Instead, we compare the condition to a desired condition defined by the desired species for forage value, soil holding capacity, and other ecosystem functions. For all the data, including the historic condition and trend transects, we used the most current rating of annual grassland species by John Lorenzana which describes species as desirable, intermediate (less desirable) or undesirable (Lorenzana, 2002). The protocol also includes limitation on the proportion of certain species that can be considered desirable.

The California annual grassland is a vegetation comprised of annual species which it shares with other so-called Mediterranean regions of the world. Many of the dominant species within such climatic regions originated around the Mediterranean Sea. As European man migrated, so did these annual plant species. In many instances, they have displaced native plants. Present day California annual grasslands reflect man's influence, both direct and indirect, as dramatically as do any other systems in the world (Bartolome 1976). Comparison of current vegetation to hypothesized "pristine" vegetation on a species composition basis has resulted in this classification of most of California's annual grass rangelands as being in poor condition. As a result, the poor rating stems from the assessment criteria and methods which place the annual dominated plant communities in lower condition classes. The plant succession concepts underlying these criteria and methods were developed in Midwestern prairies and are not reliable in all ecosystems (George, M. et al. 1990).

Heady (1956) proposed an adaptation of NRCS's range condition methods to California's annual ranges. His system of determining condition on annual range categorizes dominant plant species in upper, middle and lower groups according to their grazing value. Rather than consider the climax to be perennial bunchgrass, the highest type of annual grassland (dominated by soft chess, wild oats and ripgut brome) is considered " climax annual". The terms upper, middle and lower replace traditional terminology (decreaser, increaser and invader) since the annual range flora is dominated by alien species that are likely to maintain their dominance. The alien species are now considered by some to introduced naturalized annual species (George, M. et al. 1990). Conceptually, each range site has the potential to produce a unique combination of species and herbage production, provided physical characteristics have not deteriorated. In annual grasslands in California, four factors- precipitation, temperature, soil characteristics and residue (RDM) largely control forage productivity and seasonal species competition.

DESIRED CONDITIONS

The Sierra National Forest LRMP and amendments (USDA Forest Service 1992, 1995, 2001, 2004) defines desired conditions for the rangelands of the Sierra National Forest (Table 4).

Table 4. Desired conditions for annual grassland of the Sierra National Forest.

Vegetation Community Type	Desired Future Condition
Annual Grassland (Uplands)	Rangelands are to be in satisfactory condition and all grazing activities occurring on the Forest would have management strategies which achieve or maintain rangelands in satisfactory condition. Satisfactory rangeland condition for annual grasslands is defined in the Forest Plan as having a livestock forage condition rating of good or excellent or a resource value rating of greater than or equal to 76% similarity to desired condition, and stable soils with continuous vegetative cover and rooting throughout available profile. (1995 SNF LRMP Amendment: 2.2.4, Page 2-11).
Riparian Conservation Areas	Water quality meets the goals of the Clean Water Act and Safe Drinking Water Act; it is fishable, swimmable, and suitable for drinking after normal treatment (2004 SNFPA ROD Page 42). Habitat supports viable populations of native and desired non-native plant, invertebrate and vertebrate riparian and aquatic dependent species. New introductions of invasive species are prevented. Where invasive species are adversely affecting the viability of native species, the appropriate State and Federal wildlife agencies have reduced impacts to native populations (2004 SNFPA ROD Page 42). Ensure that characteristics of special aquatic features are, at a minimum, at Proper Functioning Condition, as defined in the appropriate Technical Reports (or their successor publications): (1) "Process for Assessing PFC" TR 1737-9 (1993), "PFC for Lotic Areas" USDI TR 1737-15 (1998) or (2) "PFC for Lentic Riparian-Wetland Areas" USDI TR 1737-11 (1994); (2004 SNFPA ROD S&G 117, Page 65). Species composition and structural diversity of plant and animal communities in riparian areas, wetlands and meadows provide desired habitat conditions and ecological functions (2004 SNFPA ROD Page 43). The distribution and health of biotic communities in special aquatic habitats (such as springs and seeps) perpetuates their unique functions and biological diversity (2004 SNFPA ROD Page 43). Soils with favorable infiltration characteristics and diverse vegetative cover absorb and filer precipitation and sustain favorable conditions of stream flows (2004 SNFPA ROD Page 43). A diversity of age classes of hardwood shrubs is present and regeneration is occurring (2004 SNFPA ROD Page 43). Streams in meadows, lower elevation grasslands and hardwood ecosystems have vegetation and channel bank conditions that approach historic potential (2004 SNFPA ROD Page 42).

To aid in assessing the annual grassland range, Region 5 has categorized range plant species into three groups: Desirable, Less Desirable and Undesirable. This classification was first developed by Paxton, 1945 (Appendix) and his list was expanded on by John Lorenzana, retired Forest Service, in 2002. If the four factors mentioned combine to create favorable conditions then the range should exhibit a desired or good to excellent livestock forage rating. If conditions deteriorate the Desirable species will decrease and the Less Desirable species may increase in percentage of composition. With further range deterioration the Desirable species will decrease even more, and the Less Desirable may also decrease with Undesirable species dominating the site.

In 1985, a scorecard for assessing range condition in montane meadows was developed by Ray Ratliff, Pacific Southwest Research Station, Fresno, CA. Using his same logic, Region 5 has developed a generalized vegetation scorecard for assessing annual grassland ranges. The value of a site for livestock production is dependent on the abundance of desirable forage plant species, forage productivity, and growing season length. Annual grassland sites with the plant composition comprised of 75-100 percent Desirable and Less Desirable Species are considered in excellent condition. The percentage of Less Desirable is limited. The limit depends upon the percentage of the Less Desirable species expected in the composition in an excellent range condition (Tables 5 and 6).

When Desirable and allowable Less Desirable species together comprise between 50 and 75 percent of the compostion, the condition is considered good. Fair condition sites contanct 25 to 50 percent Desirable and Less Desirable species and Poor condition range sites contain less than 25 percent Desirable and Less Desirable species in the composition (Tables 5 and 6).

Table 5. Livestock forage rating scorecard for annual grassland sites of the Sierra National Forest.

Livestock Forage Rating	Minimum Desirable (%)*	Maximum Less Desirable (%)**	Desirable and Less Desirable (%)***
Excellent	50	50	75 to 100
Good	30	20	50 to 75
Fair	10	15	25 to 50
Poor	--	--	0 to 25

* Minimum percent of composition allowed.

** Maximum percent of composition allowed; excess of percentage contributes to amount of undesirable species

*** Range in percent of the composition of Desirable and allowed Less Desirable species permitted for the forage rating class.

Table 6. Soil condition scorecard for annual grassland sites of the Sierra National Forest.

Condition Rating	Bare Soil (%)
Excellent	0 to 5
Good	6 to 10
Fair	11 to 15
Poor	16 to 25

The current Region 5 Forest Service standard monitoring method uses rooted frequency transects measuring vegetation composition and ground cover. The standard method for rating the condition of the vegetation community monitored by these transects uses species ratings based on seral status. It is applicable only to perennial systems typical of mountain meadows. For these annual grassland allotments we used John Lorenzana's species ratings based on desirability for management goals.

The Regional Annual Grassland protocol and scorecard rates the plot based on the percentage of desirable, less desirable and undesirable forage species, and parameters such as soil cover, to determine vegetative and soil condition. Previous year's Residual Dry Matter (RDM), rainfall pattern and amount and temperature determines species composition in annual grassland communities (see annual utilization monitoring table) and cause more flucuation. Changes in yearly species composition can result from differences in the amount of herbaceous plant residue present at the time of germination. Low amounts of RDM in the fall tend to result in dominance of undesirable forage plants with minor amounts of the more desirable forage plants in the composition. High amounts of RDM present in the fall tend to result in dominance of desirable forage plants with an acceptable amount of less desirable forage plants. The highest type of annual system dominated by soft chess, wild oats and ripgut brome) is considered "climax annual". Based on this, the term "trend" is not applicable in annual grassland systems, which are considered by some a "naturalized system" of alien annual species (George, Mel et al 1990).

CURRENT CONDITION SUMMARY

The following is a summary of condition from transects established in the Castle Peak, and Long Ridge Allotments. The site specific data was collected from the following permanent plots (Tables 7 and 8) from 2001 and 2006 (Appendix A –Data Sheets). These permanent plots located in the key areas have been monitored on a 5-year interval in order to determine vegetative and overall condition. Annual utilization data from 1995-2008 was also summarized by key area (Appendix B – Utilization Summary)

Table 7. Rooted Frequency Reading for long term monitoring plots in Castle Peak and Long Ridge Allotments (data collected in 2001).

Allotment	Site	Transect Type	Year	Vegetation Score	Soil Score	% Desirable + Intermediate spp. (w/ limits)*	% Bare Ground and Gravel*
Castle Peak	Italian Bar	Rooted Frequency	2001	Good	Good	65% Des. 24% Int. = 89%	10%
Long Ridge	Long Ridge	Rooted Frequency	2001	Fair	Good	62% Des. 9% Int. = 71%	8%
	Dandy Flat	Rooted Frequency	2001	Good	Good	67% Des. 14% Int. = 84%	7%
	Long Ridge Horse Pasture	Rooted Frequency	2001	Good	Good	57% Des. 34% Int. = 82%	7%

Table 8. Rooted Frequency Re-Read for long term monitoring plots in Castle Peak and Long Ridge Allotments (data collected in 2006).

Allotment	Site	Transect Type	Year	Vegetation Score	Soil Score	% Desirable + Intermediate spp. (w/ limits)*	% Bare Ground and Gravel*
Castle Peak	Italian Bar	Rooted Frequency	2006	Good	Good	45% Des. 13% Int. = 69%	9%
Long Ridge	Long Ridge	Rooted Frequency	2006	Good	Good	48% Des. 19% Int. = 67%	6%
	Dandy Flat	Rooted Frequency	2006	Fair*	Poor	38% Des. 26% Int. = 58%	16%
	Long Ridge Horse Pasture	Rooted Frequency	2006	Good	Good	38% Des. 21% Int. = 58%	8%

* Reading of good vegetation score for Dandy Flat, however, poor soil score drops vegetation condition down to fair.

The following summary is from the Rangeland Analysis Report which analyzed the rationale and effectiveness of past management using historical records as well as recently collected data (1960's to the present). Hydrology and Aquatics Biological Assessment reports are also referenced here to summarize the current existing range conditions.

Castle Peak

In 1984, an environmental assessment was conducted to authorize additional stock on the allotment. This decision increased the permitted numbers from 220 pair from March 16 to June 30 to 300 pair progressively turned out from January 1 through March 1 (100 pair on the 1st of each month January through March) with an off-date of June 30. The rationale for this increase was the future brush control and type conversion and seeding, which was never implemented. Livestock were dispersed to utilize the Redinger Unit adjacent to Redinger Lake, and then allowed to drift up to the Castle Peak Unit toward the northeastern portion of the allotment. This management strategy does not reflect the more recent actual use (since 2000), since on dates have been delayed to February for the most part due to range readiness concerns.

Annual monitoring at one key area location within the Castle Peak Allotment indicates that forage utilization standards have been met. Long term condition monitoring at this same location shows the allotment to have a forage condition rating of good and a good soil condition rating which meets desired conditions of having a forage rating of good or excellent. Percent cover is greater than ninety percent which meets desired conditions of sixty percent minimum

cover in annual grasslands. An additional designated monitoring location within the Redinger Unit at Forest Road 9S50 would be established under the proposed action and Alternative 3 for annual and long term monitoring.

Saginaw Creek, an intermittent tributary to Redinger Lake, was assessed for riparian condition and is considered to be at properly functioning condition. The area adjacent to the Timberline Corral at Saginaw Creek is a key area. The stream through the allotment is primarily high gradient, with a boulder/bedrock substrate that provides a stable channel. However, upstream of the allotment boundary and within private land, the channel is lower gradient and the banks have less cover.

Long Ridge

Forty cow/pair are driven from adjacent private land to the Long Ridge Allotment on or around January 1. The majority of the livestock (101 cow/calf pair) are trucked to the Long Ridge Corral on or around March 1 and dispersed throughout the allotment. Cattle are kept dispersed through riding and salting by the permittee. The 101 pair herd is gathered into Long Ridge Corral in late June and then trucked to the Central Camp allotment for summer use. The remaining 40 pair are driven to Smalley Cove Pasture and were either gathered at that time or remain throughout the summer. The Smalley Cove Pasture has had chronic trespass of unauthorized livestock from adjacent private and PG&E leased lands due to poor fence infrastructure, primarily. This trespass and uncontrolled use has made quantifying the current level of use difficult.

Utilization monitoring at three key area locations within Long Ridge Allotment indicates that utilization standards have been met in most years (Appendix A). However, there have been several seasons within the last ten years where allowable use exceeded standards at Dandy Flat and the Long Ridge Horse Pasture. Long term condition monitoring indicates that the allotment has a forage condition rating of good with a good soil condition rating for all key areas with the exception of Dandy Flat key area, which has fair forage rating and a poor soil condition rating (Table 8). The forage and soil rating in Dandy Flat do not meet desired conditions. The overall vegetative cover meets standards for all key areas, however, Dandy Flat has a high bare soil rating.

Several riparian areas were assessed within the Long Ridge Allotment. Fish Creek is a tributary to Kerckhoff Lake, which creates an upstream backwater effect on the channel within the Smalley Cove Pasture. Some bank incision was noted and the stream reach assessed was considered functional at risk with no apparent trend. Trespass use by livestock owned by adjacent landowners (e.g cattle and horses) has been a chronic problem in this area (documented since the 1970s) and has contributed to the degraded conditions. Activities on private land upstream may be impacting or contributing to degraded watershed conditions, as evidenced by the amount of sediment observed during the field inspection of the channel. An unnamed tributary to Kerckhoff Lake was assessed and it too had excessive sediment and scoured areas. This reach was considered functional at risk with an upward trend. However, this channel was recently impacted by a flume failure at PG&Es Ditch #1, which diverts water to Corrine Lake. The failure brought water and sediment down through this channel causing further disturbance to the reach making the trend appear downward. Willow Creek which forms the boundary between the Long Ridge and Castle Peak Allotments was assessed and is consider properly functioning,

even though hydropower flow regulations have altered the system ecologically. Several spring locations in the Horseshoe Bend area and County Road 230 are being impacted by livestock and will be protected under the proposed action (Table 9).

NEED FOR CHANGE AND PROPOSED ACTION

CASTLE PEAK

There is a need for change in the permitted on-dates for the Castle Peak allotment based on concerns with range readiness (Table 9). Under this proposal, the authorized season of use from current management would be March 1 through June 30 with 300 cow/calf pair (Table 10). The overall reduction in the season of use and reduced head months would be allocated to allow for summer use within the allotment with 40 cow/calf pair with still a net reduction in head months from current permitted use. So the proposed reduction in head months (-292 HMs) gained from the change in the on-date would be off-set by authorizing 40 cow/calf pair (101 HMs) to graze the allotment from July 1 through September 15. A private land parcel within the Castle Peak Unit would be leased by the permittee. Several additional designated monitoring locations would be established within the Redinger Unit (Redinger and Sheep Camp) for annual and long term monitoring. Under this proposal, the existing Timberline Corral at Saginaw Creek would be reconstructed to standard with pipe material at the existing location.

LONG RIDGE

The need for change stems from the range readiness concern with the January 1 on-date and overall allotment management issues due to having differing on dates for the permitted herds. There is also a need for change in the Smalley Cove Pasture management as desired stream channel conditions are not being met at Fish Creek (Table 9). Under this proposal, the authorized season of use from current management would be March 1 through June 15 with 165 cow/calf pair (Table 10). The reduction in head months (-79 HMs) gained from the change in the season of use would be off-set by authorizing an additional 25 cow/calf pair (84 HMs) to graze in the allotment during the proposed season of use. A new corral would be constructed on adjacent Forest Service land and the existing corral materials would be removed. The fenceline that makes the western boundary for the pasture at Long Ridge would be reconstructed on the Forest boundary to the east and the exisitng fenceline would be removed. The proposed livestock use for Smalley Cove pasture would authorize up to 50 cow/calf pair for the month of June. Construction of a new 0.5 acre wire livestock holding trap is proposed at the junction of Country Road 235 and the entrance to Southern California Edison Powerhouse #4. This field would be used to gather livestock at the end of the permitted season.

Table 9. Need for change in management for Castle Peak and Long Ridge Allotments.

Allotment	Need for Change	Proposed Action Description
Castle Peak	Range readiness and livestock forage rating	Change season of use from January 1 through June 30 to March 1 through June 30 to address range readiness concerns
	Season of use	Authorize 40 cow/calf pair to graze in Castle Peak allotment (in conjunction with privately leased land) from July 1 through September 15 based on overall reduction of HMs from shortened season
	Livestock Gathering Facilities	Reconstruct Timberline Corral to standard
Long Ridge	Range readiness and livestock forage rating	Change grazing season of use from January 1 through June 30 to March 1 through June 15 to address range readiness concerns and conditions at Dandy Flat
	Permitted numbers	Increases permitted numbers from 141 to 165 cow/calf pair based on overall reduction of HMs from shortened season
	Livestock Gathering Facilities	Reconstruct Smalley Cove Corral to standard Remove Long Ridge Corral and portion of holding field fence that is on Private Land. Authorize construction of new corral and fenceline on adjacent Forest Service land Authorize use in Smalley Cove Pasture for gathering livestock. Removal of existing boundary fence to incorporate additional Forest Service lands to the north. *Adjacent landowner is responsible for new boundary fence* Construct holding field at junction of Southern California Edison Powerhouse #4 Road and County Road 235
	Livestock impacts to springs/seeps	Protect spring head at Teddy's Spring and Horseshoe Bend Trail Spring from livestock trampling impacts by constructing barb wire exclosure fences
	Livestock distribution	Develop Coyote Spring to improve livestock use and distribution patterns.

Table 10. Proposed season of use and numbers.

Allotment	Pasture	Livestock			Period of Use	
Long Ridge	Long Ridge Horse Pasture	~100	cattle	cow/ calf	Early March at Livestock Turnout	Early June at Livestock Gather
Long Ridge	Smalley Cove Pasture	50	cattle	cow/ calf	June 1	June 30
Long Ridge	All Units	125	cattle	cow/ calf	March 1	June 15
Long Ridge	All Units	40	cattle	cow/ calf	March 1	June 15
Castle Peak	Redinger	200	cattle	cow/ calf	March 1	June 30
Castle Peak	Castle Peak	100	cattle	cow/ calf	March 1	June 30
Castle Peak	All Units	40	cattle	cow/ calf	July 1	Sept 15

/s/
AIMEE SMITH
Rangeland Management Specialist, Sierra NF

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APPENDIX A – DATA SHEETS FOR LONG TERM MONITORING PLOTS

APPENDIX B - UTILIZATION SUMMARY

Annual utilization monitoring summary from 1995 through 2009 for Castle Peak and Long Ridge Allotments.

Allotment	Key Area Name	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
Castle Peak	**Italian Bar**	Non use	Non use	--	1000 # RDM	--	--	1000 # RDM	1000 # RDM	1348 # RDM	1267 # RDM	2380 # RDM	1170 # RDM	--	--	--
	Powerhouse # 3	Non use	Non use	--	--	--	--	--	--	1460 # RDM	2611 # RDM	2084 # RDM	1953 # RDM	--	--	--
	Saginaw Creek/ Timberline Corral	Non use	Non use	--	--	--	--	--	--	--	--	--	3519# RDM	--	--	--
Long Ridge	**Long Ridge**	>700 # RDM	700 # RDM	700 # RDM	--	--	750 # RDM	907 # RDM	557 # RDM	555 # RDM	480 # RDM	1286 # RDM	2380 # RDM	--	--	--
	Horse Pasture	>700 # RDM	615 # RDM		1000 # RDM	--	1061 # RDM	1132 # RDM	1171 # RDM	1536 # RDM		3984 # RDM	2318 # RDM	--	--	--
	Dandy Flat	1000 # RDM	346 # RDM	800 # RDM	--	--	750 # RDM	1208 # RDM	1440 # RDM	595 # RDM	739 # RDM	2787 # RDM	1072 # RDM	--	--	--

- RDM = Residual Dry Matter (what is left after grazing in annual grassland rangeland type).
- RDM minimum is 700 #/acre from SNFPA for annual grasslands in satisfactory condition.
- Shaded areas show **non-compliance** with utilization standards.

cc: Bass Lake Range NEPA ID Team

Biological Assessment and Biological Evaluation for Terrestrial Species for the Long Ridge and Castle Peak Allotments

Sierra National Forest
Bass Lake Ranger District
August 31, 2009

Prepared by:_____ Date_____
Kevin Williams, District Biologist, Bass Lake RD

Prepared by:_____ Date_____
Anaé Otto, Assistant District Biologist, Bass Lake RD

Approved by:_____ Date_____
Dave Martin, District Ranger, Bass Lake RD

EXECUTIVE SUMMARY

The Sierra Nevada bighorn sheep, Fresno kangaroo rat, California condor, great gray owl, willow flycatcher, American marten, wolverine, and Sierra Nevada red fox were excluded from analysis in this document either because: 1) there is not habitat for the species in the project area, or 2) the species are not known to currently exist on or near the Sierra National Forest.

It is my determination that permitting cattle grazing on the Long Ridge and Castle Peak allotment will have **"no effect" upon the valley elderberry longhorn beetle** because "cattle grazing would not result in adverse effect under a moderate grazing scheme where other resources were protected" and "a 'no effect' determination was approved as long as it wasn't intensive grazing such as in a heavily used riparian pasture where less palatable spp. might show severe impacts" (See Attachment A). It is also my determination that it **will not be necessary to perform VELB surveys** prior to reissuing a grazing permit on the allotments.

It is my determination that permitting cattle grazing on the Long Ridge and Castle Peak allotment will have **"no effect" upon the peregrine falcon**. Cattle would not directly interact with falcons and 1) the closest nesting habitat is approximately 9 miles north; 2) impact upon potential prey habitat would be minimized by following grazing utilization S&Gs.

It is my determination that permitting cattle grazing on the Long Ridge and Castle Peak allotment will have **"no effect" upon the Pacific fisher**, as cattle would not directly interact with the fisher and their typical prey items would not be affected by grazing.

It is my determination that permitting cattle grazing on the Long Ridge and Castle Peak allotment will have **"no effect" upon the California spotted owl.** Cattle would not directly impact the spotted owl as they typically do not use the same habitat as cattle. Also 1) spotted owls are not likely to utilize the allotments since the majority of the habitat is not suitable, and 2) impact upon prey habitat would be minimized by following the grazing utilization S&Gs.

It is my determination that permitting cattle grazing on the Long Ridge and Castle Peak allotment will have **"no effect" upon the Northern goshawk.** Cattle would not directly impact the northern goshawk as they typically do not use the same habitat as cattle. Also 1) goshawk are not likely to utilize the allotments since the majority of the habitat is not suitable, and 2) impact upon prey habitat would be minimized by following the grazing utilization S&Gs.

It is my determination that permitting grazing on the Long Ridge and Castle Peak allotment would result in **"no effect" upon the Pallid and Townsend's bats.** Cattle would not directly interact with the bats and it is unlikely to indirectly impact the bats by degrading the quality of the habitat of their prey as those prey items are largely terrestrial insects.

It is my determination that permitting grazing on the Long Ridge and Castle Peak allotment **"may impact individuals but is not likely to cause a trend toward federal listing or loss of viability" for the Western red bat.** Cattle could directly impact the bat by browsing within a roost site, resulting in the bat being displaced. This impact is not likely to result in a trend toward listing or loss of viability because the impact would be minimized by: 1) following the grazing utilization S&Gs; and 2) by requiring that permit administrative actions be taken if more than 20% of a stream reach is disturbed by trample & chisel.

I. INTRODUCTION

THREATENED, ENDANGERED, AND PROPOSED SPECIES

The purpose of the biological assessment (BA) portion of this document is: (1) to analyze and document the effects upon federally listed threatened, endangered, and proposed terrestrial species and their habitat for the proposed reissuance of a 10-year term grazing permit for the Long Ridge and Castle Peak range allotment; and (2) to determine whether formal consultation or conference is required with the United States Department of Interior (USDI) Fish and Wildlife Service (USFWS), pursuant to the Endangered Species Act (ESA). Consultation with the USFWS was completed concerning grazing and the VELB in January 1994 (See attachment A)

The following federally listed endangered (E), threatened (T), and proposed (P) terrestrial species may occur in or be affected by projects on the Sierra National Forest (SNF):

1. **Sierra Nevada bighorn sheep (E),** *Ovis canadensis californiana*
2. **Fresno kangaroo rat (E),** *Dipodomys nitratoides exilis*
3. **California condor (E),** *Gymnogyps californianus*
4. **Valley elderberry longhorn beetle (T),** *Desmocerus californicus dimorphus*

This list is current as of May 5, 2006, (USFWS Online Species List for the Sierra National Forest, database updated May 5, 2006, accessed and printed July 30, 2006).

Only the valley elderberry longhorn beetle will be analyzed in this BA. Reasons for excluding the other threatened, endangered, and proposed species are provided below.

Sierra Nevada bighorn sheep prefer open areas of low-growing vegetation for feeding, in close proximity to steep, rugged terrain for lambing, bedding, and escape, an source of water, and travel routes linking these areas. This species is found only in the easternmost portions of the John Muir Wilderness along the Sierra crest. The closest documented sighting is about 18 miles east of the Kaiser allotment. For this reason, the bighorn sheep will not be addressed further in this document.

Fresno kangaroo rat does not occur on or adjacent to the Sierra National Forest because of the geographical or elevational range of the species, and/or habitat

requirements of the species. The nearest Fresno kangaroo rat and habitat is found in the southwestern portion of the San Joaquin Valley. It will not be addressed further in this document.

California condor is currently subject to a captive breeding and reintroduction program. The only condors in the wild are found on the Los Padres National Forest. Condors are known to be breeding in the wild; however, only in south coastal California and parts of Arizona. Fresno County is within the former spring and summer range of some non-breeding condors (Verner and Boss 1980). There are reported sightings of condor on the Sierra National Forest from 1969 to 1979. No verified sightings have been reported since. *One unverified* sighting of a condor occurred at Seven Gables in 2002. The closest allotment under analysis is about 22 miles southwest of this sighting. For this reason, the condor will not be addressed further in this document.

There are **no critical or proposed critical habitats** for terrestrial species within the Sierra National Forest at this time.

SENSITIVE SPECIES

The purpose of the biological evaluation (BE) portion of this document is to determine whether of a 10-year term grazing permit for the Long Ridge and Castle Peak range allotment will result in a trend toward terrestrial sensitive species becoming federally listed. The following is a list of Forest Service terrestrial sensitive species known to occur on the Sierra National Forest, Updated as of 8 June 1998, Appended 6 March 2001, 7 May 2003, 21 April 2004, 3 March 2005, and 15 October 2007.

1. **California spotted owl,** *Strix occidentalis occidentalis*
2. **American marten,** *Martes americana*
3. **Pacific fisher,** *Martes pennanti pacifica*
4. **Sierra Nevada red fox,** *Vulpes vulpes necator*
5. **California wolverine,** *Gulo gulo luteus*
6. **Pallid bat,** *Antrozous pallidus*
7. **Townsend's big-eared bat,** *Corynorhinus townsendii*
8. **Western red bat**, *Lasiurus blossevillii*
9. **Northern goshawk,** *Accipter gentilis*
10. **Great gray owl,** *Strix nebulosa*
11. **Willow flycatcher,** *Empidonax traillii brewsteri*
12. **Bald Eagle**, *Haliaeetus leucocephalus*

The great gray owl, willow flycatcher, American marten, Pacific fisher, wolverine, Sierra Nevada red fox, Townsends big-eared bat and Pallid bat will not be addressed further in this document. Reasons for excluding these FS sensitive species are discussed below.

Great gray owl (GGO) nest in mature mixed conifer, red fir, or lodgepole pine forest from 2,400 to 8,800 feet in elevation. They spend 90% of their time within 600 feet of

montane meadows or meadow complexes that are 26 acres or larger in size; and all nests have been found within 845 feet of these types of meadows (Winter 1986). The Long Ridge and Castle Peak allotments do not contain the above forest types or meadows, therefore are not considered to contain suitable breeding habitat for Great Gray owls.

Records show that there have been no incidental sightings of Great Gray owls in or adjacent to the project area by the Forest Service. The nearest incidental sightings contained in the Forest database occur over 3 miles straight line distance from the project boundary. The CNDDB lists one Great Gray Owl occurrence recorded in 1977at the Pine Grove mine over 0.5 miles straight line distance from the project area. No further sightings have been reported for this record (Occurrence No. 11).

Great Gray owls in the Sierra Nevada are known to make seasonal migrations to lower elevations when heavy snow conditions drive them out of their breeding territories (Beck and Winter, 2000). There is a potential for winter foraging habitat use by Great Gray Owls to occur in the Castle Peak/Long Ridge allotment boundaries during months when snow pack in the upper elevation meadows precludes foraging behavior by the owls. There are approximately 800 acres of Annual Grassland (CWHR) that could be utilized as winter foraging habitat during late November through mid-February when owls are restricted to lower elevation habitat use. This potential use will not coincide with the proposed grazing season of use which extends from March 1 – June 30 and/or July 1 – September 1. For these reasons, great gray owl will not be discussed further in this document.

In California, **willow flycatcher** (WIFL) are a rare to locally uncommon summer resident in wet or moist meadows and montane riparian habitats from 2,000 to 8,000 feet in elevation in the Sierra Nevada and Cascade Range (CWHR 2005). In the Sierra Nevada bioregion, WIFL occur at elevations from 1,200 to 9,500 feet, although 88% occur between 4,000 and 8,000 feet (USDA 2006 referencing Serena 1982, Harris et al 1988, Stafford and Valentine 1985, Bombay et al 1998, and S Armentrout pers. comm.). WIFL have nested in meadows <1 acre (USDA 2006 referencing KRCD 1985) and as large as several hundred acres USDA 2006 referencing Serena 1982, Harris et al 1987 &1988, and Bombay 1999). However, 80% of WIFL occur in meadows >20 acres in size (USDA referencing Serena 1982 and Harris et al 1987 &1988). The Long Ridge and Castle Peak allotments do not contain suitable habitat for the WIFL. (Suitable habitat for WIFL on the SNF was determined through aerial photos and field visits. This forest-wide project was completed in 2001). The allotment lies between 1,200 and 4,000 feet in elevation and contains only 8 acres of meadows. For this reason, the WIFL will not be addressed further in this document.

Pacific fisher occur in multi-storied, multi-species, late-seral coniferous forests at elevations ranging from 3,500 to 8,000 feet. The Long Ridge and Castle Peak allotment lies between 1,200 to 4,000 feet in elevation, which is slightly within the elevational range of the fisher and a large part of the Castle Peak allotment is comprised of Montane Hardwood (MHW). Fishers are largely nocturnal and arboreal; therefore, interaction between cattle and fishers are highly unlikely. For this reason, it will not be addressed

further in this document.

American marten are most often found in mixed conifer and true fir habitats between the elevations of 6,000 and 13,000 feet. The average elevation is 8,300 feet. The Long Ridge and Castle Peak allotment lies between 1,200 to 4,500 feet in elevation, which is well below the typical elevational range of the marten. For this reason, it will not be addressed further in this document.

Wolverine avoid human developments and human contact, and exist in only the most remote wilderness areas of the high Sierra. They occur at elevations from about 6,400 feet to 10,800 feet. The Long Ridge and Castle Peak allotment lies between 1,200 to 4,500 feet in elevation, which is well below the elevational range of the wolverine. Furthermore, the allotment does not provide the remote wilderness characteristics important for wolverine. Therefore, the wolverine will not be addressed further in this document.

Sierra Nevada red fox occur in habitats similar to the marten and wolverine. They have been observed between 3,900 and 11,900 feet in elevation; however, they are most likely found between 5,500 and 9,700 feet (Schempf 1971). The Long Ridge and Castle Peak allotment lies between 1,200 to 4,500 feet in elevation, which is well below the elevational range of the fox. For this reason, it will not be addressed further in this document.

Townsends and Pallid bats can occur across the forest; however, these species use man-made structures or mines/caves for roosting and forage at night; therefore, interaction between these species and cattle is highly unlikely. For this reason, it will not be addressed further in this document.

ll. CONSULTATION TO DATE

Pursuant to 50 CFR 402.12, the Sierra National Forest accessed an online species list from the USDI Fish and Wildlife Service updated as of May 5, 2006. The list includes all federally-listed threatened, endangered, and proposed species "that may occur in or be affected by projects" on the Sierra National Forest. Additionally, consultation with the USFWS concerning the VELB occurred in 1994.

IIl. MANAGEMENT DIRECTION

BIOLOGICAL ASSESSMENT & BIOLOGICAL EVALUTION DIRECTION

The current direction on the procedure for biological assessments and evaluations for threatened, endangered, proposed, and sensitive species as shown in the Forest Service Manual (FSM 2672.43) is to conduct a pre-field review of available information. In instances where there is evidence of species or habitat, conduct a field reconnaissance to

determine whether the species is present or expected to be found in the project area. When a species is found or expected to be found in the project area, the potential for adverse effect or conflict is determined through a biological assessment and/or biological evaluation. Biological assessments are prepared in compliance with the requirements of Forest Service Manual (FSM) 2670 direction and provides for compliance with the applicable Code of Federal Regulations (CFR) 50 402.12. For federally listed species, consultation is required when the proposed action may affect the species or its habitat. The Sierra National Forest is directed by FSM 2672.4 to complete a biological evaluation for all Forest Service permitted programs and activities for possible effects on species listed as sensitive by the Pacific Southwest Regional Forester (USDA 1990). For sensitive species, an analysis is conducted to determine if the proposed action may result in a trend to federal listing or loss of viability. In instances where there is no evidence of effect on the species or its habitat, the project may proceed without constraints when these findings have been documented appropriately.

GENERAL FOREST SERVICE MANAGEMENT DIRECTION

Existing management direction for listed, proposed and/or sensitive species can be found in:

1. **Endangered Species Act,** 1973, as amended (ESA)
2. **Forest and Rangeland Renewable Resources Planning Act**, 1974 (RPA)
3. **National Forest Management Act,** 1976 (NFMA)
4. **Forest Service Manual and Handbooks** (FSM/FSH-2670)
5. **Recovery Plan for Peregrine Falcon** (USDI 1982)
6. **Valley Elderberry Longhorn Beetle Recovery Plan** (USDI 1984)
7. **Pacific Bald Eagle Recovery Plan** (USDI 1986)
8. **Sierra National Forest Land and Resources Management Plan,** 1992 (LRMP)
9. **Healthy Forests Restoration Act**, 2003
10. **Sierra Nevada Forest Plan Amendment**, 2004 (SNFPA)

The LRMP Forest Wide Goals and Objectives for <u>threatened, endangered, proposed and sensitive species</u> are:

1. Manage fish, wildlife and plant habitats to *maintain viable populations* of all resident fish, wildlife and plant species.

2. Manage habitat for State and Federally listed threatened and endangered fish, wildlife and plant species to *meet the objectives of their recovery plans*.

3. Emphasize *habitat improvement* for sensitive, threatened, endangered and harvest species.

4. Manage habitat for Forest Service sensitive fish, wildlife and plant species in a manner that *prevents any species from becoming a candidate* for threatened

or endangered status.

Forest LRMP S&Gs pertaining to <u>Meadows, Aquatic & Riparian Areas</u> are:

1. **S&G #33:** Generally, *riparian management areas* will extend 100 feet horizontally from the edge of perennial streams, lakes, and reservoirs, except along those streams designated as essential habitat in the Interagency Agreement for *Collomia rawsoniana*, where the zone will be 150 feet.

2. **S&G #69:** Give primary management emphasis in riparian areas to protect and *enhance the riparian vegetation, water quality, soils, fish and wildlife* resources.

3. **S&G #70:** Riparian area protection and *Streamside Management Zone (SMZ)* determination will be based on methods described in FSH 2509.22, Sierra Supplement 1, which gives specific direction for width determinations.

4. **S&G #71:** In the absence of on-site *riparian area protective width* determinations, riparian areas will extend 100 feet horizontally from the edge of perennial streams, lakes, and reservoirs. Deviations resulting from on-site evaluations will be documented in project environmental assessments.

5. **S&G #72:** When on-site project evaluations identify the need to afford protection to intermittent and/or ephemeral drainages, the *protection zone widths* will be defined in accordance with the Forest Streamside Management Zone determination process as described in the FSH 2509.22, Sierra Supplement 1.

6. **S&G #74:** Manage vegetation in designated riparian areas so existing *forestwide diversity* is maintained in all periods.

7. **S&G #75:** Maintain or enhance productivity of Forest meadows to accommodate *wildlife range resources*.

8. **S&G #76:** In stream reaches occupied by fish, any activity that results in *trampling and chiseling* of stream banks should not exceed 20% of any given stream reach. Controls such as re-routing trails, relocating dispersed campsites, and/or fencing of areas will be used to manage activities and improve riparian conditions in identified areas not meeting this standard.

9. **S&G #79:** Considers *re-routing* when existing routes through riparian areas and meadows are not compatible with riparian dependent resources.

10. **S&G #80:** Allow picketing *or tethering of stock in meadows* and overnight tie-ups no closer than 100 feet of lakes and streams.

11. **S&G #88:** *Salt grounds* will be located more than 1/4 mile from streams,

meadows and trails.

12. **S&G #89:** *Manage domestic livestock* to meet wildlife needs in identified important wildlife habitat areas.

The **SNFPA** adopts an approach for modifying wildland fire behavior across broad landscapes through the strategic placement of area treatments. S&Gs for fire and fuels, mechanical thinning, mining, grazing, snags & down woody materials, salvage, tree species composition, hardwood management, habitat connectivity for old forest associated species, wolverine, Sierra Nevada red fox, California spotted owl, northern goshawk, noxious weeds, off-highway vehicles, roads, riparian conservation areas, and critical aquatic refugees. The SNFPA combines the overall strategy for addressing the fire situation in the Sierra with key components of the conservation strategy for old forest dependant species. It adopts standards and guidelines that better reflect the wide array of site conditions encountered in the field and the management opportunities thy may provide. The SNFPA management direction for sensitive species habitat is designed with the primary objective to conserve rare and likely important components of the landscape such as stands of mid- and late-seral forest with large trees, structural diversity and complexity, and moderate to high canopy cover. The Record of Decision (ROD) for the SNFPA Final Supplemental Environmental Impact Statement (FSEIS) amends the Sierra National Forest LRMP. If there are standards and guidelines that are not listed in the ROD or are more constraining in the LRMP, they will take precedence and are the direction for the species.

The Record of Decision(ROD) for the SNFPA final supplemental EIS adopts S&Gs which protect wildlife habitat from grazing. They are:

For annual grasslands (S&Gs for Grazing, ROD, p.56):

1. Maintain a minimum of *60% cover*. Where grasslands are in satisfactory condition and annual precipitation is greater than 10 inches, manage for 700 pounds *residual dry matter (RDM)* per acre. Where grasslands are in satisfactory condition and annual precipitation is less than 10 inches, manage for 400 pounds RDM per acre. Where grasslands are in unsatisfactory condition and annual precipitation is greater than 10 inches, manage for 1,000 pounds RDM per acre. Where grasslands are in unsatisfactory condition and precipitation is less than 10 inches, manage for 700 pounds RDM per acre. Adjust standards based on grassland condition (**S&G#51**).

2. Where professional judgement and quantifiable measurements find that current practices are maintaining range in good to excellent condition, grazing utilization standards for annual grasslands may be modified to allow for the Forest Service, in partnership with individual permittees, to rigorously test and evaluate alternative standards (**S&G#52**).

For meadows (S&G#120 for Riparian Conservation Objective#5, ROD p.65-66):

1. *For meadows in early seral status:* limit livestock utilization of grass and grass-

like plants to 30% (or minimum 6-inch stubble height).

2. *For meadows in late seral status:* limit livestock utilization of grass and grass-like plants to a maximum of 40% (or minimum 4-inch stubble height).

3. *Analyze meadow ecological status* every 3 to 5 years. If meadow ecological status is determined to be moving in a downward trend, modify or suspend grazing.

4. *Under intensive grazing systems* (such as rest-rotation and deferred rotation) where meadows are receiving a period of rest, utilization levels can be higher than the levels described above if the meadow is maintained in late seral status and meadow-associated species are not being impacted.

5. *Degraded meadows* (such as those in early seral with greater than 10% of the meadow area in bare soil and active erosion) require total rest from grazing until they have recovered and have moved to mid- or late seral status.

For woody riparian vegetation (S&G#121 for Riparian Conservation Objective#5, ROD p.66)***:***

1. Limit browsing to no more than *20% of the annual leader growth* of mature riparian shrubs and no more than *20% in individual seedlings.*

2. Remove livestock from any area of an allotment when browsing indicates a *change in livestock preference* from grazing herbaceous vegetation to browsing woody riparian vegetation.

For hardwood species (S&Gs for Grazing, ROD p. 55-56):

1. Allow livestock browse on no more than *20% of annual growth of hardwood seedlings and advanced regeneration* (**S&G #50**).

2. Modify grazing plans if hardwood regeneration and recruitment needs are not being met (S&G #50).

3. Where professional judgement and quantifiable measurements find that current practices are maintaining range in good to excellent condition, grazing utilization standards for hardwoods may be modified to allow for the Forest Service, in partnership with individual permittees, to rigorously test and evaluate alternative standards (**S&G#52**).

For riparian conservation areas (RCAs) and Critical Aquatic Refuges (CARs):

1. Conduct peer reviews for projects that propose *ground-disturbing activities* in more than 25% of the RCA or more than 15% of a CAR (**S&G#94**, ROD p. 62).

2. Prevent *disturbance to streambanks and natural lake and pond shorelines* caused by resource activities (for example, livestock, off-highway vehicles (OHVs), and dispersed recreation) from exceeding 20% of stream reach or 20% of natural lake

and pond shorelines. Disturbance includes sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots. Does not apply to developed recreation sites, sites authorized under Special Use Permits, and designated OHV routes (**S&G#103**, ROD p. 63).

3. Locate new *facilities for gathering livestock and pack stock* outside of meadows and riparian conservation areas. During project-level planning, evaluate and consider relocating existing livestock facilities outside of meadows and riparian areas. Prior to re-issuing grazing permits, assess the compatibility of livestock management facilities located in RCAs with riparian conservation objectives (**S&G#119**, ROD p. 65).

SPECIFIC FOREST SERVICE MANAGMENT DIRECTION FOR THREATENED, ENDANGERED, AND PROPOSED SPECIES

***Valley elderberry longhorn beetle* (*VELB*) -** There are no LRMP management directions or standards and guidelines specific to VELB. However, there is an approved **recovery plan** for VELB (USDI 1984) which is now considered outdated by the USFWS. On February 14, 2007 a 5-year review was completed by the USFWS which recommended that the species be delisted. A delisting proposal has not yet been released (USFWS Sacramento Fish and Wildlife Office Species Account VELB) accessed online http://www.fws.gov/sacramento/es/animal_spp_acct/velb.pdf

SPECIFIC FOREST SERVICE MANAGEMENT DIRECTION FOR SENSITIVE SPECIES

California spotted owl – The SNFPA ROD contains the following direction for California spotted owls:

1. *300-acre protected activity centers (PACs)* are delineated surrounding each territorial owl activity center detected on the Forest since 1986. PACS are designed to protect breeding adults and their offspring. *600-acre home range core areas (HRCAs)* are also established surrounding each territorial owl activity center. The 600 acres includes the 300 acre PAC. The home range core area is designed to encompass the best available spotted owl habitat in the closest proximity to the owl PACs where the most concentrated owl foraging activity is likely to occur.

2. Boundaries of Protected Activity Centers *(PACs) will be reviewed and adjusted* to better meet habitat needs.

3. Maintain a *limited operating period (LOP), prohibiting activities within approximately ¼ mile of the nest site* during the breeding season (March 1 through August 31) unless surveys confirm that California spotted owls are not nesting. *Conduct surveys to establish or confirm the location of the nest or activity center* if activities are planned within or adjacent to a PAC (**S&G#75,** ROD p. 60).

4. *Conduct surveys to protocol when proposed activities are likely to reduce habitat quality in suitable spotted owl habitat with unknown occupancy.* Designate PACs where appropriate based on survey results (**S&G#33**, ROD, p. 54).

5. *Conduct vegetation treatments in no more than 5% per year and 10% per decade* of the acres in spotted owl PACs (**S&G#80**, ROD p. 61).

6. When conducting mechanical thinning treatments within spotted owl PACs, *remove only material needed to meet fuels objectives,* focusing on surface and ladder fuels (**S&G#7**, ROD p. 50).

Goshawk*:* Under the Sierra Nevada Forest Land Management Plan Amendment **protected activity centers (PACs)** will be established for known and discovered northern goshawks (**200 acres**) to protect breeding adults and their offspring. Designate northern goshawk PACs based upon the latest documented nest site and locations(s) of alternate nests. If the actual nest site is not located, designate the PAC based on the location of territorial adult birds or recently fledged juvenile goshawks during the fledgling dependency period. A **LOP** will be maintained within approximately ¼ mile of the nest site during the breeding season (February 15 through September 15) unless surveys confirm that northern goshawks are not nesting. If the nest stand is unknown, either apply the LOP to a ¼ mile area surrounding the PAC or survey to determine the nest stand location (**S&G# 76**, ROD, p 60). The LOP may be waived under certain circumstances (**S&G#76**, ROD p. 60).

Surveys will be conducted when activities are planned within or adjacent to a PAC to establish or confirm the location of the nest or activity center.

Prior to undertaking vegetation treatments in suitable northern goshawk nesting habitat that is not within an existing California spotted owl or northern goshawk PAC, conduct surveys using Pacific Southwest Region survey protocols. Suitable northern goshawk nesting habitat is defined as follows: (1) in the eastside pine forest type, suitable nesting habitat is stands with an average tree size of 11 inches dbh or greater and at least 20 percent canopy cover; and (2) in other forest types suitable nesting habitat is stands with an average tree size of 11 inches dbh or greater and at least 40 percent canopy cover. Delineate PACS surrounding all known and newly discovered northern goshawk breeding territories detected on National Forest System lands.

The SNFCA prohibits conducting *mechanical treatments in no more than 5% per year and 10% per decade* of the acres in goshawk PACs (**S&G#81**, ROD p. 61).

Bats*:* No S&Gs relate specifically to bats. Of the three sensitive bat species, two have trees as an important part of their habitat requirements: the **Western red bat** (obligate tree rooster), and the **pallid bat**. Standards and guidelines or direction that relate to maintaining canopy cover, basal area, large-diameter trees, and snag quantities will incidentally provide a level of protection for forested bat habitat. The **Townsend's big-eared bat** is highly dependent on mines and caves. There are no S&Gs specifically relating to protecting mine and cave wildlife habitats.

IV. DESCRIPTION OF PROJECT

Alternative 1 – No Action
The no action alternative for NEPA decisions on grazing authorizations has been defined by the Forest Service as no grazing (FSH 2209.13, Section 92.31). Under this alternative, term grazing permits would be cancelled. Cancellation of term permits would follow direction in Forest Service Manual (FSM) 2231.62d, Forest Service Handbook (FSH) 2209.13, Chapter 10 Section 16.24, and Part 2 item 11b of the term permit. Improvements described under the proposed action would not be necessary. Structures related to grazing, such as water troughs, corrals and fences, would be removed if and when feasible. This alternative to close the Long Ridge and Castle Peak allotments to livestock use would require a non-significant amendment to the Sierra National Forest LRMP.

Alternative 2 - The Proposed Action
The proposed action is not current management and is summarized in the table below. It addresses the need for change in the current livestock management of both the Long Ridge and Castle Peak allotments (Table 9). The proposed action would authorize livestock grazing on the Castle Peak and Long Ridge allotments with revisions to the term grazing permits and corresponding Allotment Management Plans and would incorporate the following site specific changes in management:

Proposed Action grazing season (season of use) and livestock numbers for Castle Peak and Long Ridge allotments.

Allotment	Pasture	Livestock			Period of Use	
Long Ridge	Long Ridge Horse Pasture	~100	cattle	cow/ calf	Early March at Livestock Turnout	Early June at Livestock Gather
Long Ridge	Smalley Cove Pasture	50	cattle	cow/ calf	June 1	June 30
Long Ridge	All Units	125	cattle	cow/ calf	March 1	June 15
Long Ridge	All Units	40	cattle	cow/ calf	March 1	June 15
Castle Peak	Redinger	200	cattle	cow/ calf	March 1	June 30
Castle Peak	Castle Peak	100	cattle	cow/ calf	March 1	June 30
Castle Peak	All Units	40	cattle	cow/ calf	July 1	Sept 15

Castle Peak Allotment:
Under this proposal, the authorized season of use from current management would be March 1 through June 30 with 300 cow/calf pair. This proposed reduction in head months (-292 HMs) gained from the change in the on-date would be off-set by authorizing 40 cow/calf pair (101 HMs) to graze the allotment from July 1st through

September 15th. A private land parcel within the Castle Peak Unit would be leased by the permittee. Several additional designated monitoring locations would be established within the Redinger Unit (Redinger and Sheep Camp) for annual and long term monitoring.Under this proposal, the existing Timberline Corral at Saginaw Creek (Appendix A-3) would be reconstructed to standard with pipe material at the existing location.

Long Ridge Allotment:
Under this proposal, the authorized season of use from current management would be March 1 through June 15 with 165 cow/calf pair. The reduction in head months (-79 HMs) gained from the change in the season of use would be off-set by authorizing an additional 25 cow/calf pair (84 HMs) to graze in the allotment during the proposed season of use. A new corral would be constructed on adjacent Forest Service land and the existing corral materials would be removed. The fenceline that makes the western boundary for the pasture at Long Ridge would be reconstructed on the Forest boundary to the east and the exisitng fenceline would be removed. The proposed livestock use for Smalley Cove pasture would authorize up to 50 cow/calf pair for the month of June. Construction of a new 0.5 acre wire livestock holding trap is proposed at the junction of Country Road 235 and the entrance to Southern California Edison Powerhouse #4. This field would be used to gather livestock at the end of the permitted season.

Need for management change and proposed action description.

Allotment	Need for Change	Proposed Action Description
Castle Peak	Range readiness and livestock forage rating	Change season of use from January 1 through June 30 to March 1 through June 30 to address range readiness concerns
	Season of use	Authorize 40 cow/calf pair to graze in Castle Peak allotment (in conjunction with privately leased land) from July 1 through September 15 based on overall reduction of HMs from shortened season
	Livestock Gathering Facilities	Reconstruct Timberline Corral to standard
Long Ridge	Range readiness and livestock forage rating	Change grazing season of use from January 1 through June 30 to March 1 through June 15 to address range readiness concerns and conditions at Dandy Flat
	Permitted numbers	Increases permitted numbers from 141 to 165 cow/calf pair based on overall reduction of HMs from shortened season
	Livestock Gathering Facilities	Reconstruct Smalley Cove Corral to standard Remove Long Ridge Corral and portion of holding field fence that is on Private Land. Authorize construction of new corral and fenceline on adjacent Forest Service land Authorize use in Smalley Cove Pasture for gathering livestock. Removal of existing boundary fence to incorporate additional Forest Service lands to the north. Construct holding field at junction of Southern California Edison Powerhouse #4 Road and County Road 235
	Livestock impacts to springs/seeps	Protect spring head at Teddy's Spring and Horseshoe Bend Trail Spring from livestock trampling impacts by constructing barb wire exclosure fences
	Livestock distribution	Develop Coyote Spring to improve livestock use and distribution patterns.

*The Forest Service would be responsible for providing materials and the permittee would be expected to provide the labor. The proposed range improvements would be completed within 5 years of the decision.

Alternative 3: Reduced Season of Use and Livestock Numbers

This alternative would reduce the permitted livestock numbers on Castle Peak Allotment by 95 cow/calf pair and authorize 205 cow/calf pair from March 1 through June 30. Long Ridge Allotment would be managed similar to the Proposed Action under this alternative.

Description of season of use and livestock numbers under Alternative 3.

Allotment	Pasture	Livestock			Period of Use	
Long Ridge	Long Ridge Horse Pasture (gather pasture)	~100	cattle	cow/ calf	Early March at Livestock Turnout	Early June at Livestock Gather
Long Ridge	Smalley Cove Pasture (PG&E/Forest Service) (gather pasture)	50	cattle	cow/ calf	June 1	June 30
Long Ridge	All Units	125	cattle	cow/ calf	March 1	June 30
Long Ridge	All Units	40	cattle	cow/ calf	March 1	June 30
Castle Peak	Redinger	100	cattle	cow/ calf	March 1	June 30
Castle Peak	Castle Peak	105	cattle	cow/ calf	March 1	June 30

Castle Peak:
Under this alternative grazing would not be authorized after June 30 in Castle Peak Allotment. Proposed numbers would be reduced from the Proposed Action by 95 cow/calf pair overall. This alternative would authorize 205 cow/calf pair from March 1 to June 30. The range improvements proposed for reconstruction would be the same as the proposed action. Standards and guidelines and monitoring are the same as described under the proposed action.

Long Ridge:
Under this alternative the proposed numbers are the same as the proposed action, however, the season of use would extend to the end of June. The range improvements proposed for reconstruction, the development and protection of springs would be the same as described in the proposed action. Standards and guidelines and monitoring would be the same as described under the proposed action.

Mitigation Common to All Alternatives
In response to public comments on the proposal, mitigation measures were developed to ease some of the potential impacts the various alternatives may cause. The mitigation measures would be applied to any of the action alternatives. The following project design measures would continue to be implemented through Term Grazing Permits:

- Minimize impacts to pre-historic and historic sites, streams, seeps and springs through proper salt placement and herding to draw and distribute livestock away from these sensitive areas.

Alternatives Considered But Eliminated From Further Study

Continue current management. Under this alternative, livestock management and use would continue as currently being implemented. This alternative was dropped from further consideration because it did not fully meet the purpose and need for the project.

The following alternatives were suggested by the public:

The USFS should carefully consider other reduced-grazing alternatives that would allow for continued historical usage of the allotments by permittees, but would better protect at-risk wildlife species, benefit recreation, enhance water quality. This alternative was dropped from further consideration because the effects would be similar to the proposed action and Alternative 3, which reduces permitted use (reduction in Head Months) and incorporates protection measures for Forest Service sensitive wildlife and Best Management Practices (BMPs) to enhance water quality (Table 2) . The effects of reduced grazing area addressed under the proposed action and Alternative 3, since neither alternative is a continuation of current management. Recreation opportunities on the forest are not restricted by this proposal.

Incorporate high intensity, low frequency grazing systems. This alternative was dropped from further consideration because it does not meet the purpose and need to provide stability to the local community, in this case ranchers. The need is to provide for a viable ranching operation through the use of National Forest Service lands. The livestock graze the two allotments in this proposal during the spring months prior to moving up to higher elevation permitted ranges. Incorporating high intensity short duration would require the analysis of multiple allotments and/or a larger permitted area which is outside the scope of this proposal. A moderate degree of grazing maintains satisfactory litter cover, or residual dry matter (RDM) in order to protect against soil deterioration and obtain efficient production from the fluctuating quantity of forage on foothill ranges (Bentley and Talbot 1951). Using RDM for monitoring has become the most widely accepted method for managing annual grasslands in California (Stromberg et al 2007). In terms of managing the annual grassland cycle and annual grass physiology, there is little utility in rest, deferment or rotation because grasses germinate from the soil in response to rain. Scientific evidence is lacking that shows a benefit or consistent response to rotational grazing and/or “holistic resource management” in annual grasslands although it may be beneficial in managing for a particular species or setting (Stromberg et. al 2007). The proposed action incorporates grazing management that meets goals and objectives for satisfactory rangeland condition. Under this proposal, only livestock gathering pastures in all allotments would be managed under high intensity low frequency grazing.

Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Information in the following table is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

Comparison of Alternatives.

Item to Compare	Alternative 1: No Action	Alternative 2: Proposed Action	Alternative 3: Reduced Use in Castle Peak
Effect to rangeland resources	**Long Ridge and Castle Peak:** Improved herbaceous ground cover; possible decline in disturbance-adapted species	**Long Ridge:** Delayed on-date would move Dandy Flat key area site toward desired soil and forage conditions **Castle Peak:** Delayed on-dates likely to benefit soil and vegetation condition and	**Long Ridge:** Same as Alternative 2 **Castle Peak:** Combination of reduced livestock numbers and delayed on-date likely to benefit soil and vegetation condition and maintain desired conditions of good
Effects to hydrological resources	**Long Ridge and Castle Peak:** Livestock impacts such as trampling of spring/seep areas would cease; soil bulk density would recover at a slightly accelerated rate; channel form would recover more rapidly; fecal pathogen input would be reduced although there may be no change in risk to human health, based on background bacteria present; Fish Creek and Unnamed tributary reaches may recover, but factors outside control of management are contributing to FAR rating	**Long Ridge:** Impacted springs would be protected, effects on watershed resources expected to increase slightly relative to the existing condition, FAR reaches may recover, but factors outside control of management are contributing to FAR rating **Castle Peak:** Delayed on-date would protect soil and vegetation from excessive effects of livestock use, overall effects would decrease from current condition	**Long Ridge:** Same as Alternative 2 **Castle Peak:** No summer use would occur and effects to water sources and riparian areas would be minimized; delayed on-date would protect soil and vegetation from excessive effects of livestock use, overall effects would decrease from current condition

Item to Compare	Alternative 1: No Action	Alternative 2: Proposed Action	Alternative 3: Reduced Use in Castle Peak
Effects to TES plants	No effect annual Mariposa pussypaws; no effects to carpenteria; no direct effects for Madera leptosiphon, possible indirect effects to plant vigor since grazing may benefit the habitat for this plant by reducing competition from non-native annuals and weeds	No effect to annual Mariposa pussypaws; negligible direct effects to carpenteria; chance of direct effects from trampling to Madera letosiphon	No effect to annual Mariposa pussypaws; no effects to carpenteria; provides a greater opportunity for native annual plant species, such as Madera leptosiphon, to establish and grow
Effects to noxious weeds-risk of spread	Reduced risk of introduction of new weed species and reduced risk of spread of species already present in the allotments	Greater risk than Alternatives 1 and 3 for any newly introduced weeds brought by cattle or transport vehicles	Lower risk for exacerbating the spread and density of existing infestations of weeds
Effects to terrestrial wildlife	No effect	No effect to Valley elderberry longhorn beetle; Due to possible indirect effects to prey habitat, Alternative 2 may impact individuals, but is not likely to result in a trend toward federal listing or loss of viability for the following sensitive species: Spotted owl, Northern goshawk and Western red bat	No effect to Valley elderberry longhorn beetle; similar or lessened effects to sensitive species compared to Alternative 2

Item to Compare	Alternative 1: No Action	Alternative 2: Proposed Action	Alternative 3: Reduced Use in Castle Peak
Effects to aquatic species	No effect	May affect, but is not likely to adversely affect the California red-legged frog; for foothill yellow-legged frog; for Western pond turtle, may affect individuals but is not likely to result in a trend toward federal listing or loss of viability; for hardhead minnow, may effect, not likely to result in a trend toward federal listing	May affect, but is not likely to adversely affect the California red-legged frog; for foothill yellow-legged frog and Western pond turtle- may affect individuals but is not likely to lead to federal listing or loss of viability; for hardhead minnow, may effect, not likely to result in a trend toward federal listing
Effects to Terrestrial Management Indicator Species (MIS)	No effect	No changes to current habitat, structure and quantity or distribution of species	No changes to current habitat, structure and quantity or distribution of species
Effects to Aquatic Management Indicator Species (MIS)	Localized recovery of disturbed streambanks from improved vegetative cover	Improved stream shading at Smalley Cove; existing trend in the habitat of aquatic macroinvertebrates not expected to be altered under any project alternative	Improved stream shading at Smalley Cove; existing trend in the habitat of aquatic macroinvertebrates not expected to be altered under any project alternative

Item to Compare	Alternative 1: No Action	Alternative 2: Proposed Action	Alternative 3: Reduced Use in Castle Peak
Effects to cultural resources	**Long Ridge:** This alternative would eliminate the potential for direct or indirect impacts to 47 cultural resource sites **Castle Peak:** This alternative would eliminate the potential for direct or indirect impacts to 37 cultural resource sites	**Long Ridge:** No direct or indirect effects were found to 47 cultural resource sites within the allotment **Castle Peak:** No direct or indirect effects were found to 37 cultural resource sites within the allotment	**Long Ridge and Castle Peak:** Effects would be the same as Alternative 2

V. EXISTING ENVIRONMENT

The **Long Ridge and Castle Peak** allotment is located in T.9S, R.22E, Sections 1, 12, 13, 24; T.9S, R.23E, Sections 1-12, 14-18, 20, 21, 28, 29; T9S, R24E Sections 4-9, 17, 18; T10S, R23E Sections 21, 22, 26-28, 33-36; and T10S, R24E Sections 31-33. It is located on the southern edge of the Bass Lake Ranger District, and is contained by the San Joaquin River on the southern edge. Elevations within the allotment boundaries range from about 1,200 feet in elevation to about 4,500 feet.

Vegetation is composed primarily of blue oak woodland, with gray pine, montane hardwood, chaparral, and annual grasses. Topography is a south to west aspect until it reaches the top end of the allotments where it is defined by rolling to generally steep slopes with creeks and drainages that break up the landscape. Climate is characterized by hot dry summers and mild wet winters. Annual precipitation is about 33 inches. It consists mostly of rain and generally occurs from November to May.

The Long Ridge and Castle Peak allotments contain no documented Watershed Improvement Need (WIN) sites. Visual observations identified only traces of cattle impacts to stream channels, almost entirely at crossings (Andy Stone, SNF Hydrologist, 2008). The observed channels would probably rate as "Proper Functioning Condition" with a PFC assessment.

VI. Species Accounts

THREATENED, ENDANGERED, AND PROPOSED SPECIES

VALLEY ELDERBERRY LONGHORN BEETLE (VELB)

Species & Habitat Account: The threatened valley elderberry longhorn beetle *(Desmocerus californicus dimorphus)* occurs most often in riparian savannah or moist valley oak woodlands. VELB is most often found within elderberry shrubs along the margins of rivers and streams in the lower Sacramento River and upper San Joaquin Valley at 3,000 feet elevation and below.

The VELB has only been found in association with elderberry shrubs which serve as its host plant. Adult VELB are present and breeding from March through early June; the greatest numbers have been collected in May. During this time of year adult females lay eggs in bark cracks and crevices, at junctions of stems and trunk, or junctions of leaf petioles and stems of living elderberry plants. Upon hatching, a VELB larvae will tunnel into the elderberry plant where it remains until it grows to adult size and chews an exit hole out of the elderberry plant. Emergence coincides with flowering of the elderberry plant (USDI Fish and Wildlife Service 1984). Exit holes usually occur within four feet or less from the ground. The VELB feed on foliage and possibly the flowers of elderberry plants. VELB exit holes have been found in shoots or branches as small as 0.5 inches and up to 8 inches (USDI Fish and Wildlife Service 1991). Recent surveys on the Sierra NF and nearby private lands detected VELB exit holes in elderberry shrubs with average

stem diameters ranging from 6 to 17 inches (Pacific Gas and Electric Co. 1998).

VELB have been found on the both the Bass Lake and High Sierra Ranger Districts of the Sierra National Forest.

During March and April of 1998 VELB surveys were conducted by Pacific Gas and Electric Company (PG&E) wildlife biologists for the HAAS-Kings River Project (Pacific Gas and Electric Co. 1998). This survey was conducted on over 1,000 acres of private and FS land below 3,000 feet in elevation. A total of 85 elderberry plants were found in the Middle Fork Kings River Canyon between 1,000 and 3,000 feet in elevation; in the foothills near Pine Flat Reservoir at 700 to 1,900 feet in elevation, and in the Kings River flood plain below Pine Flat Dam from 330 to 470 feet in elevation. Out of 21 elderberry shrubs found in the Middle Fork Kings River Canyon three contained VELB exit holes in large stems (greater than 1 inch as soil level) that averaged 17 inches in diameter. In the foothills near Pine Flat Reservoir five of the 17 shrubs found contained VELB exit holes. In this area the stem diameter of shrubs with exit holes averaged six inches. In the Kings River flood plain nine out of 47 elderberry plants contained VELB exit holes. The average stem diameter in this area was 11 inches. The highest elevation at which VELB exit holes were found was 2045 feet. The locations of all elderberry plants were recorded using the Global Positioning System and have been stored in PG&Es computer based land resource information system.

There are four known VELB sites on the Bass Lake Ranger District. The closest site is located on private land 2 miles straight line distance northwest of the project boundary.

Direct, Indirect, and Cumulative Effects: The Long Ridge and Castle Peak allotments are entirely within the elevational range of the VELB. Elderberry shrubs exist within the allotment, but surveys for VELB have not been conducted. Grazing itself is not identified as a threat to VELB, however "Inappropriate grazing" is noted by the USFWS as a potential threat to VELB. **The proposed grazing system for the Castle Peak and Long Ridge allotments is a low to moderate grazing system which should have no effect to the VELB as reasoned below.**
VELB generally use stems greater than 1 inch in diameter. While some may lay eggs on young shoots less than 1 inch in diameter, once the larvae hatch, they bore into and occupy larger diameter stems (personal conversation with Jeff Halstead, Kings River Conservation District, 2006). In an informal consultation held with Chris Nagano (U.S. Fish and Wildlife Service) in 1993, Steve Anderson (Wildlife Biologist, Sequoia NF) documented that "cattle grazing would not result in adverse effect under a moderate grazing scheme where other resources were protected". They discussed that "cattle will browse on elderberries but they are generally low in palatability until after the first frost (California Range Brushlands and Browse Plants) which is after the reproductive season for the VELB" (and, thereby, after eggs have hatched and larvae have moved into larger diameter stems). "Generally the cows would not browse the elderberries below the 1" stems". Chris "felt that a 'no effect' determination was O.K. as long as it wasn't intensive grazing such as in a heavily used riparian pasture where less palatable spp. might show severe impacts". By adhering to the grazing utilization S&Gs (S&G#s 50-52, 120, 121), there will be no intensive grazing.

Further documentation as to why the proposed grazing should have no effect upon the VELB comes from personal communication with Jeff Halstead, Kings River Conservation District (2006). Jeff expressed his professional opinion that unless a large number of cattle are confined to a relatively small area, cattle do not tend to destroy elderberry bushes by activities such as heavy browsing, tromping, or utilization of elderberry shrubs as scratching posts. The Long Ridge and Castle Peak allotments encompass 13,386 acres with a low to moderate proposed grazing scheme. Cattle present on the allotments during the season of use are herded throughout the allotment as grazing utilization standards are met (pers. comm. Smith 2009). Therefore, there should be no large numbers of cattle congregating in small areas for long enough lengths of time for cattle to negatively impact elderberry shrubs. The only exception would be when cattle are temporarily corralled for a short period of time for round up purposes only, and in this case, existing corrals do not contain elderberry shrubs (pers. comm. Smith 2009). Any new corrals or facilities will be reviewed by SNF specialists as part of the proposed action and will be constructed away from elderberry shrubs. Grazing use areas on the allotment were identified as having short-term/variable use (SNF grazing use GIS layer 2006). Since cattle do not generally browse on elderberry as it is unpalatable at the times of the year they will be on the allotment, and VELB generally use stems larger than 1 inch in diameter, and cattle will not be confined to riparian enclosures where there is elderberry present, there will be no effects to VELB elderberry habitat from this project. There are no expected direct or indirect negative effects to this species from the project; therefore, there are no expected cumulative effects from the project.

Determination: It is my determination that permitting cattle grazing on the Long Ridge and Castle Peak allotment will have **"no effect"** upon the valley elderberry longhorn beetle as reasoned above. It is also my determination that it **will not be necessary to perform VELB surveys** prior to reissuing a grazing permit on the allotment.

Forest Service Sensitive Species

BALD EAGLE:

Species & Habitat Account: The bald eagle (*Haliaeetus leucocephalus)* is the only eagle of the genus *Haliaeetus* that is restricted in distribution to North America. They are generally tied to habitats that include water: rivers, lakes, sea coasts, and estuaries. They are found from sea level to 7000 feet in elevation.

They are generally large, robust birds with very heavy, arched beaks and strong, grooved claws adapted to catching prey. They typically take fish and waterfowl and occasionally small mammals. Their hunting behavior tends more toward scavenging, with weak or sick prey being favored. Carrion usually makes up a large portion of the diet. Bald eagles also compete with and steal fish from osprey (*Pandion haliaetus*). Where prey is abundant and concentrated (spawning fish and wintering waterfowl, for example), groups of eagles may feed gregariously. In forested habitats, bald eagles typically hunt from perches in large trees near the waters edge.

Bald eagles generally begin nest-building in February. They favor large trees with heavy,

horizontal limbs. They often choose the largest tree in a stand. Nests are generally located 50-200 feet above ground. Unlike osprey, they prefer overhead cover for their nests and so typically do not build them in the very top of a tree or snag. They nest most frequently in stands with less than 40% canopy (Call 1978). Nests are usually located near a permanent water source. In California, 87% of nest sites were within 1 mile of water. The Bald eagle breeding season extends from February through July, with peak activity occurring from March through June. Typically 2 eggs are laid which hatch in 34 to 36 days.

Territories have been abandoned after disturbance from logging, recreational development, and other human activities near nests (Thelander 1973). The eagle usually does not begin nesting if human disturbance is evident.

The Sierra National Forest provides wintering habitat for bald eagles. Surveys have occurred intermittently for a number of years. Surveys include mid-winter bald eagle surveys and Audubon Christmas Bird Counts. Winter habitat includes day perches, roost sites, and foraging sites. Generally, perches are trees with large and open branching adjacent to foraging sites. Roosts sites are located in timber stands which provide protection from inclement weather. Winter concentrations are reservoirs with open waters, and with abundant prey. Winter prey are waterfowl, fish, and to a lesser extent, small mammals. Bald eagles are on the winter range from late October or early November to early May.

Winter concentrations on the Sierra National Forest occur at Huntington Lake, Millerton Reservoir, Pine Flat Reservoir, and Redinger Lake. In June of 1998, a pair of bald eagles was observed performing pair-bonding behaviors, including nest building attempts on an abandoned osprey nest, at Bass Lake. Eagles have reproduced successfully at Bass Lake for several of the past seasons, beginning in 1999. Also in May of 1999, the first pair of nesting bald eagles was discovered on Shaver Lake. The pair successfully fledged 1 bird. Bald eagles have also recently been observed in the spring months at Mammoth Pool Reservoir, and during the summer in the vicinity of Courtright Reservoir and Lake Edison. There have been repeated incidental sightings at Florence Lake, and a breeding pair is possible there, as well; however, a nest has not been located to date. It is probable that with expanding bald eagle populations, more lake habitats with suitable nesting trees on the forest may become occupied by eagle pairs. Continued monitoring is needed to locate and protect nesting eagle pairs.

Direct & Indirect Effects: Bald eagle sightings have occurred within the Long Ridge and Castle Peak allotments. A single adult was observed at Kerckhoff Lake in 2005 and 2006. Many sightings of wintering bald eagles have been recorded at Redinger Lake where annual mid-winter bald eagle surveys are conducted in early January by Forest Service biologists. There have been no indications that Bald Eagles are using Redinger or Kerckhoff Lakes to breed. The proposed action will have **no direct effects** upon the bald eagle**.** Bald eagles forage primarily on fish and waterfowl; therefore, there will be no direct competition for food. And, because bald eagles build nests in the upper 1/3 of large diameter trees or snags (generally 50-200' up), cattle would not disturb nesting. Furthermore, cattle would not affect the bald eagle's prey base (primarily fish or

waterfowl) or its habitat. Therefore, there would be **no indirect effects**. There are no expected direct or indirect negative effects to this species from the project; therefore, there are no expected cumulative effects from the project.

Determination: It is my determination that permitting cattle grazing on the Long Ridge and Castle Peak allotment will have **"no effect"** upon the bald eagle as reasoned above.

CALIFORNIA SPOTTED OWL:

Species & Habitat Account: Suitable west-side California spotted owl nesting habitat contains 70 percent or greater canopy closure and suitable west-side foraging habitat contains 40 percent or greater canopy closure.

Owls used stands in the 4M through 5D/6 timber strata for *nesting* significantly more than expected, based on the proportion of those strata. In general, stands suitable for nesting and roosting have 1) two or more canopy layers, 2) dominant and co-dominant trees in the canopy averaging at least 24 inches in dbh, 3) at least 70 percent total canopy cover (including the hardwood component), 4) higher than average levels of very large, old trees, and 5) higher than average levels of snags and downed woody material (FEIS Volume 3, Chapter 3, p. 72-73). PACs are delineated to include the above stand attributes and, in descending order of priority, California Wildlife Habitat Rating (CWHR) classes 6, 5D, 5M, 4D, and 4M (SNFPA ROD p. 37). The '6' classification stands for a multi-layer tree component; '5' stands for medium/large trees (>24"dbh); and '4' stands for small trees (11"-24" dbh). The 'D' classification stands for dense cover (60%-100% canopy closure); and the 'M' stands for moderate cover (40%-59% canopy closure) (Mayer and Laudenslayer 1988).

Nesting activities are initiated in March, with egg laying occurring in April. Incubation lasts about 30 days with peak hatching in early to middle May. Young fledge or leave the nest about 35 days after hatching, and become independent in September.

Management as well as recreational activities has the potential to disrupt spotted owl nesting efforts and reproductive success. In recent years this risk has been diminished by applying protections to known nest stands and limiting disruptive activities during the spotted owl breeding season within ¼ mile of known nest sites. Habitat disturbance surrounding the nest site has been diminished through designation and protection of 300 acre PACs (FEIS Volume 3, Chapter 3, p. 81). HRCAs, containing 300 additional acres, have been designated to encompass the best available spotted owl habitat in the closest proximity to the owl PACs where the most concentrated owl foraging activity is likely to occur (SNFPA, ROD p. 39).

In general, stands suitable for owl *foraging* have 1) at least two canopy layers, 2) dominant and co-dominant trees in the canopy averaging at least eleven inches in dbh, 3) at least 40 percent canopy cover in overstory trees, (30% canopy cover in the red fir type), and higher than average numbers of snags and downed woody material. Although canopy covers down to 40 percent are suitable foraging, they appear to be only

marginally so. Radio tracking data from the Sierra National Forest showed that owls tended to forage more in sites with greater than 50% canopy cover than predicted from their availability; stands with 40 to 50 percent canopy cover were used about in proportion with their availability (FEIS Volume 3, Chapter 3, p. 72-73).

The northern flying squirrel is the preferred prey of spotted owls in mixed conifer forests; while the dusky footed woodrat is the preferred prey of owls in the lower elevation woodland (Verner et al 1992). In the Sierra Nevada the northern flying squirrel is found primarily in west-side mixed conifer and red fir forests above 4,000 feet in elevation.

Spotted owl sites are based on historical information, and recent surveys (1989-2005), most to established survey protocols. California spotted owl nest or roost sites are mainly located in mixed conifer forests (80 percent), and to a lesser extent in red fir (10 percent), and ponderosa pine/hardwoods (7 percent) (USDA Forest Service 1993a). Typically, mixed conifer stands on the Sierra National Forest are common to elevations under 7,500 ft. Red fir stands and associations are common to areas above 7,000 feet. California spotted owls do not commonly frequent areas above 8,500 feet. Most nesting activities in the Sierra National Forest are below 7,500 feet. A few spotted owls also nest in low elevation, foothill riparian areas with hardwoods. Some California spotted owls undergo an altitudinal migration and may winter at lower elevations.

Direct & Indirect Effects: The SNF CWHR GIS layer was reviewed to determine habitat available on the allotment. The figures given below are rough percentages approximated from the CWHR data provided in the GIS layer. Approximately 88% of the Long Ridge and Castle Peak allotment is covered by tree-dominated habitat, with about 70% being blue oak woodland, 16% being blue oak/gray pine, and <1% being montane hardwood stands. A portion of the Blue oak/gray pine stands provide suitable nesting habitat. Nevertheless, this habitat is not preferred. As documented above, California spotted owls prefer mixed conifer stands. The habitat provided may be utilized by some spotted owls during altitudinal migration in winter, but only about 3 percent of the owl's nesting and roosting sites occur in foothill riparian areas with hardwood (inferred from USDA FS 1993a). There is one California Spotted Owl PAC and HRCA designated within the project boundary, MA052, which is near the center of the Castle Peak allotment.
Cattle grazing should cause **no direct effect** upon the spotted owl. Because spotted owls typically build their nests 30 to 180 feet above the ground, cattle would not disturb nesting even if a reproductive pair was to take up residence in the allotment. Furthermore, range management activities such as putting on, herding, and gathering would be of limited duration and not likely to result in breeding disturbance. The allotment may provide foraging habitat. Nevertheless, there would be no competition for food since spotted owls eat primarily dusky-footed woodrats in lower elevation woodlands. Therefore, the proposed action should have no direct impact upon the spotted owl. While cattle grazing would not indirectly impact the spotted owl by impacting important habitat components of the owl (such as canopy cover, snags, or downed woody debris), it **may indirectly affect** the owl by impacting habitat quality of its prey and, thereby, prey availability. The woodrat eats primarily green vegetation, but also feeds on seeds, nuts, fruits, and fungi. Nevertheless, by following the grazing utilization S&Gs

(S&G#s 50-52, 120, 121), food sources should remain for the woodrat.

Determination: It is my determination that permitting cattle grazing on the Long Ridge and Castle Peak allotment **"may impact individuals but is not likely to cause a trend toward listing or loss of viability"** for the California spotted owl as reasoned above. It is also my determination that it is **not necessary to perform spotted owl surveys** since the permitted activity would not likely reduce habitat quality of the spotted owl (SNFPA ROD S&G #33, p. 54). Nor would it be necessary **to apply LOP restrictions** since cattle grazing is not likely to result in breeding disturbance, and range management activities would be of limited duration (SNFPA ROD S&G #77, p. 60).

NORTHERN GOSHAWK:

Species & Habitat Account: The Sierra NF is within the summer and winter range of the Northern Goshawk. During the winter, some goshawks may move downslope to the foothill hardwood habitat, but downslope movement occurs irregularly and is probably more related to the availability of prey rather than weather (Ziener et al. 1990b).

Goshawks breed in older-age coniferous, mixed, and deciduous forest *habitat* located in middle to high elevations. Northern goshawks also occur in northern and montane forests. Habitat provides large trees for nesting, a closed canopy for protection and thermal cover, and open space allowing maneuverability below the canopy (Fowler 1988). Habitat that is suitable for the California spotted owl is also suitable for goshawks.

Nest sites are frequently associated with meadows, riparian areas, gentle to moderate slopes (0 to 50 percent), and north to east aspects. Nest sites are generally composed of the larger trees (medium to large timber), and high tree densities within a stand. Frequently, nest sites have an open understory, and are adjacent to, or include small openings. Sixty to 100 percent canopy closure is optimal, 50 percent is suitable, and 30 to 49 percent closure is marginal for nest sites. Within-stand, nest-site habitat structure and composition are among the best-studied aspects of northern goshawk habitat relationships (Squires and Reynolds 1997). As stated in the SNFPA, although absolute differences in structural characteristics may differ between vegetation types and geographical regions, relative habitat use patterns are consistent such that northern goshawks use nest-sites with greater canopy cover, greater basal area, greater numbers of large diameter trees, and lower shrub/sapling/understory cover and numbers of small diameter trees, and gentle to moderate slopes relative to non-used, random sites. High canopy cover is the most consistent structural feature similar across studies of northern goshawk nesting habitat. This habitat provides large trees for nest sites, a closed canopy for protection from predators and thermal cover, and open understories that provide for maneuverability and detection of prey below the canopy. In Oregon, nests were usually located in large, live trees (11" avg dbh), in the fork of large, horizontal limbs close the trunk, at the bottom of live canopy, and about 19 to 82 feet above ground (Reynolds et al 1982).

Nesting activities are initiated in March, with egg laying and incubation completed by early June. Hatching and fledging occurs in June and July. Young become independent in late August. Post fledgling areas are dense stands possibly over 400 acres in size that

are adjacent to the nest site, provide cover, are defended by the adults, and are surrounded by foraging habitat.

Generalized habitat models based on best professional opinion contained in the CWHR database rate the following affected vegetation types and strata as providing high nesting habitat capability: Sierran Mixed Conifer, White Fir, Montane Hardwood Conifer, and Montane Riparian (6, 5D, 5M, 4D, 4M); Ponderosa Pine, Jeffrey Pine, Lodgepole Pine, Subalpine Conifer and Montane Hardwood (5D, 5M, 4D, 4M); Red Fir (5D, 5M). The following vegetation types and strata are rated as providing moderate nesting habitat capability in CWHR: Aspen (6, 5D, 5M, 4D, 4M); Eastside Pine (5D, 5M, 4D, 4M, 3D, 3M); Red Fir (4D, 4M); Lodgepole Pine and Subalpine Conifer (3D, 3M) (FEIS V3 Ch3 part 4.4 pg 116).

John Keane and Sean Parks (2003) developed a model to compare population biology in conjunction with landscape modeling of nesting habitat suitability to focus efforts on the location with higher predicted probability of occurrence. The objective of this is to develop a procedure for increasing survey efficiency for the northern goshawk.

Foraging habitat preferences of northern goshawks are poorly understood, although limited information from studies in conifer forests indicate that northern goshawks seem to prefer to forage in mature forest (summarized in Squires and Reynolds 1997). Goshawks hunt in forested areas and use snags and dead topped trees to scout for prey and for prey plucking posts. Open understory in forested habitat facilitates detection and capture of prey. Prey consists mostly of birds "from robin to grouse in size," with mammals from "squirrel to rabbit size" also taken (Ziener et al. 1990b). In the Lake Tahoe region Douglas squirrels "appear to be a critically important prey species" (Keane 1997).

Openings, snags, down logs, woody debris, and duff and litter layers are important components in all habitat types used by goshawks. These components provide the habitat needed to provide a diverse and sustainable population of prey. Foraging areas may be over 5,000 acres in size, and consist of a mosaic of vegetative seral stages including meadows, and other openings.

Goshawks are well distributed on the Sierra Forest and known nest sites are protected. As directed in the Sierra NF LRMP a total of 50 goshawk territories have been established forest-wide. As of 1998, 20 of the 50 territories have been incorporated into the Regional Forest Service database. They were included for submittal to the regional database based on the following: 10 have at least one active nest site for which the nest location is known; 4 are historical nest sites for which the nest location is unknown; 4 are based on observations of young; 2 are based on observations of territorial defense or repeated sightings. The remaining 30 territories are based on incidental sightings of goshawk and/or suitable goshawk habitat. A detailed account of the goshawk territories on the Sierra NF in contained within the Goshawk Network Management Guidelines, approved by the forest supervisor in 1997 (USDA Forest Service 1997).

<u>Direct & Indirect Effects:</u> There is one incidental goshawk sighting, but no delineated

PACs within or adjacent to the Long Ridge and Castle Peak allotments. The incidental sighting was recorded in 2001 of a single adult flying near Forest Road 4S81 near the center of the Castle Peak allotment. The nearest goshawk territory is Benedict Meadow (SIEGH33), about 8 miles to the northeast of the project. While goshawks have been known to have home ranges up to 15 sq. miles, the average home range and defendable territory is 0.8 sq. miles (Zeiner et al 1990). The nearest territory is well outside the average home range for breeding goshawks. As mentioned above, some goshawks may move downslope in the winter to the foothill hardwood habitat, but downslope movement occurs irregularly and is probably more related to the availability of prey rather than weather (Ziener et al. 1990b). Therefore, permitting grazing on the allotment should have **no direct effect** upon the northern goshawk. It **may indirectly affect** goshawks by impacting habitat quality of prey and prey availability. Goshawks forage on birds, and to some extent small mammals, that may depend on seeds, grasses, and other vegetation for food. Nevertheless, by following the grazing utilization S&Gs #50-52, 120, and 121, this impact should be minimized.

Determination: It is my determination that permitting cattle grazing on the Long Ridge and Castle Peak allotment **"may impact individuals but is not likely to cause a trend toward federal listing or loss of viability"** for the Northern goshawk as reasoned above. **NO LOP restrictions** would apply since the nearest territory is greater than 1/4 mile from the allotment. Likewise, **no surveys** would be necessary.

WESTERN RED BAT:

Species & Habitat Account: Information on the life history of the Western red bad is limited. This rare species is generally limited to lower elevation riparian and wooded habitats throughout California. It is highly associated with cottonwood and sycamore riparian habitat. Breeding females are concentrated at low elevations, particularly along the major drainages in the Central Valley. There are a few records for Western red bats (most likely males or non-reproductive females) up to 8,250 feet in the Sierras (Pierson and Rainey 2002). The Western red bat is an *obligate tree-rooster*, requiring foliage for resting and rearing young. It has been known to roost in orchards in the Central San Joaquin Valley. This species generally roosts singly and does not form colonies. They can hibernate in duff. It *forages* on a variety of insects, opportunistically selecting food items based on size rather than type. Foraging is performed at high altitudes above the tree canopy. Water sites such as forebays, reservoirs, and creeks are important foraging areas for the red bat. Surveys conducted by PG&E in 2001 revealed that its foraging activity extended into the riparian zone and open forest corridors (Pierson and Rainey 2001). Western red bats average 2.3 young per year (range is 1-5), normally giving *birth* in June.

The population of this bat has been declining throughout California. Some known *causes of mortality* are the loss of riparian habitats, insecticides reducing prey availability, water impoundments, fire, and predation, largely by jays.

Surveys for this bat have not been conducted on the Long Ridge and Castle Peak allotment. The closest survey was conducted by Pacific Gas and Electric in 2001 along the Willow Creek drainage between Bass Lake and Wishon Powerhouse for the Crane

Valley Hydroelectric Project. A portion of this survey was conducted at Kerckhoff Lake, which forms the northern boundary of Long Ridge and Castle Peak allotment. PG&E obtained 21 acoustic records for the red bat throughout much of the Crane Valley project area, including some at the small creek just west of Wishon Powerhouse at Kerckhoff Lake. Over half of the records were obtained in September, suggesting an increase in densities during the fall migration period. This observation of fall density increase is consistent with observations made in Yosemite National Park (Pierson and Rainey 2001).

Direct & Indirect Effects: The Long Ridge and Castle Peak allotment provides habitat for the Western red bat. Kerckhoff and Redinger Lakes, Willow Creek and the San Joaquin River form the southern and eastern boundaries of the allotment, providing wooded riparian habitat. Since the red bat is an obligate tree rooster, cattle could have a **direct effect** upon individuals if a cow was to browse where they were roosting. Nevertheless, the occurrence of this happening is probably minimal. Furthermore, if cattle were to critically over-utilize an area, the duff layer (sometimes used for hibernation) could be impacted. This should be prevented by following the SNFPA grazing utilization S&Gs #50-52, 120, and 121.

Range management activities such as putting on, herding, and gathering would be of limited duration. The chance of encountering a roost is probably minimal. If it did occur, the permittee or his/her workers would be briefly passing through the area - not stopping. Therefore, roost-site disturbance is unlikely.

Water sites such as creeks and associated riparian zones are important foraging areas for the red bat; therefore, cattle grazing may have an **indirect effect** by impacting the quality of foraging habitat for the bat. Cattle can cause trample and chisel damage to streamsides which can ultimately lead toward downcutting of the streambed. This downcutting can, in turn, lower the water table and dry out the riparian area (thereby lessening the amount of riparian habitat with water). However, the Long Ridge and Castle Peak allotment has no documented Watershed Inventory Need sites, and only traces of cattle impacts were observed near cattle crossings (Andy Stone, SNF Hydrologist, 2008). Therefore, such an impact is not likely to occur on the allotment under the proposed action since changes from previous recent permits were not made. Furthermore, as part of the proposed action (07/06/06, p. 5) trample/chisel bank stability surveys will be conducted by SNF specialists at least twice during the life of the permit. If findings show more than 20% of a stream reach is disturbed, permit administrative actions may be required (BMP 8-3; SNFPA ROD S&G #103).

Determination: As long as: 1) grazing utilization S&Gs are adhered to, and 2) cattle impacts upon the watershed are monitored and minimized, it is my determination that permitting cattle grazing on the Long Ridge and Castle Peak allotment **"may impact individuals but is not likely to result in a trend toward listing or loss of viability"** for the Western red bat as reasoned above.

Cumulative Effects: According the Council on Environmental Quality (CEQ) NEPA regulations, "cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions (40 CFR 1508.7). Effects are spatial and temporal. EXAMPLE: *historic timber harvest in Haskell Allotment affected meadow condition by adversely altering hydrologic function.* In determining cumulative effects, the effects of the following past and present and future actions were added to the direct and indirect effects of the proposed action and alternatives:

Table 3.1: Past, Present and Reasonably Foreseeable Actions

Past and Present Actions — **IDT: Analyze the lingering effect of past actions and effect of current actions to your resource**

Project or Activity Name	Affected Area
Vegetation Management/Actions	
Blackman/Bar/Point Precommercial Thinning Castle Peak/ Chiquito	Castle Peak/ Chiquito Allotments
Lion's Point Proposed Plantation Release/Fuel Break Maintenance Mastication Project	Castle Peak Allotment
Fuelbreak Maintenance	Bass Lake Ranger District, Madera and Mariposa Counties: Fuelbreak Maintenance Project- Goat/Thornberry/Ponderosa/North Fork Fuelbreaks; Pinegrove/Ponderosa Prescribed Burn
Historic Timber harvest (incl. road building related to timber harvest)	Bass Lake Ranger District, Madera and Mariposa Counties - Across the analysis area
Fire wood cutting/gathering	Bass Lake Ranger District, Madera and Mariposa Counties - Across the analysis area
Kinsman I and Kinsman II Prescribed Fire	Bass Lake Ranger District, COUNTY - Madera. LEGAL - 8S, R24E, Sec. 19,20,21,24,25. Between Forest Road 4S81,Source Point , Saginaw Creek above Kinsman Flat on the Sierra Nat
Fire suppression	Bass Lake Ranger District - throughout

Commercial Livestock Grazing	Bass Lake Ranger District - throughout
Hazard Tree Removal	Bass Lake Ranger District, Ongoing, Castle Peak and Long Ridge.
Road side hazard tree removal	Hazard Tree Removal Decision Memo, Mariposa R. D., Rock Hazard 7/99 - 9/99 completed, Beasore
Recreation Management/Actions	
Trail maintenance	Bass Lake Ranger District, Madera and Mariposa Counties
Motorized vehicle use (OHVs)	Across the analysis area
Reissue of Various Special Use Permits DM	Bass Lake Ranger District, COUNTY - Madera, Mariposa. Various locations on Bass Lake District.
Installation of buried telephone line from Box Canyon to Corrine Lake Road:	Long Ridge Allotment
Installation of buried telephone line from Corrine Lake Road to Dandy Indian Allotment	Long Ridge Allotment
Fiber Optic Installation Road 222	Long Ridge Allotment
SCE: Sam Daniels site	Long Ridge Allotment
Recreational activities: fishing, camping, backpacking, Mt. biking, trapping	Bass Lake Ranger District - throughout
California Department of Fish and Game (CDFG) Fish Stocking	Bass Lake Ranger District, Madera and Mariposa Counties
Infrastructure Management/Actions	

Future Foreseeable Actions	**IDT: Analyze the potential effect of future actions to your resource (Timetable: 20 years into the future)**
Project or Activity Name	**Affected Area**

Vegetation Management/Actions	
Commercial Livestock Grazing	Bass Lake Ranger District - throughout
Recreation Management/Actions	
Access Travel Management	Designate OHV routes on the SNF. Affects all Allotments; Entire Forest outside Wilderness
Road 222 Realignment and bridge replacement	Replace bridge near Kerckhoff Reservoir and re-route portion of Road 222, Road 222 near Smalley Cove. Long Ridge Allotment

For these allotments, other known activities are off-highway vehicle use, road maintenance, recreational use (both developed and undeveloped), fish stocking, livestock grazing on private property, prescribed fire, and flow regulation for hydroelectric development. Kinsman I and II utilized prescribed fire in portions of the Saginaw Creek drainage. Following underburning, a reduction in groundcover may have contributed to short-term decreased in small mammal prey species abundance. The prescribed burn occurred more than 5 years ago and it is expected that needle cast has provided ground cover to areas where burning occurred and prey base has rebounded to pre-burn levels. The effects of the proposed action are generally similar to past livestock grazing effects; therefore, the cumulative effects are similar to the description of the existing condition.

Forest Service actions have Best Management Practices (detailed in Project Hydrology Report), along with Forest standards and guidelines to restrict off-site erosion and activities within Streamside Management Zones. Cattle grazing has occurred across the Forest and within the two allotments for over 100 years. It is expected that cattle grazing will locally result in areas of exposed streambanks and erosion. However, it is not expected that continued cattle grazing as proposed, in addition to other activities in the allotment, would contribute to cumulative effects to TEPS species.

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Project Terrestrial Management Indicator Species Report

Long Ridge and Castle Peak Grazing Allotments

Bass Lake Ranger District

Sierra National Forest

Prepared By: _____ **Date:**_____**2009**____
Anaé Otto
Assistant Biologist
Bass Lake Ranger District

Reviewed By: _____ **Date:**_____**2009**____
Kevin Williams
District Wildlife Biologist
Bass Lake Ranger District

1. Introduction

The purpose of this report is to evaluate and disclose the impacts of the Long Ridge and Castle Peak Grazing allotment renewal Project on the habitat of the thirteen (13) Management Indicator Species (MIS) identified in the Forest (NF) Land and Resource Management Plan (LRMP) (USDA 1991) as amended by the Sierra Nevada Forests Management Indicator Species Amendment (SNF MIS Amendment) Record of Decision (USDA Forest Service 2007a). This report documents the effects of the proposed action and alternatives on the habitat of selected project-level MIS. Detailed descriptions of the Long Ridge and Castle Peak Grazing Project alternatives are found in the Long Ridge and Castle Peak Grazing allotment renewal Project NEPA document (USDA Forest Service 2009).

MIS are animal species identified in the SNF MIS Amendment Record of Decision (ROD) signed December 14, 2007, which was developed under the 1982 National Forest System Land and Resource Management Planning Rule (1982 Planning Rule) (36 CFR 219). The current rule applicable to project decisions is the 2004 Interpretive Rule, which states "Projects implementing land management plans…must be developed considering the best available science in accordance with §219.36(a)…and must be consistent with the provisions of the governing plan." (Appendix B to §219.35). Guidance regarding MIS set forth in the SNF LRMP as amended by the 2007 SNF MIS Amendment ROD directs Forest Service resource managers to (1) at project scale, analyze the effects of proposed projects on the habitat of each MIS affected by such projects, and (2) at the bioregional scale, monitor populations and/or habitat trends of MIS, as identified in the SNF LRMP as amended.

1.a. Direction Regarding the Analysis of Project-Level Effects on MIS Habitat

Project-level effects on MIS habitat are analyzed and disclosed as part of environmental analysis under the National Environmental Policy Act (NEPA). This involves examining the impacts of the proposed project alternatives on MIS habitat by discussing how direct, indirect, and cumulative effects will change the habitat in the analysis area.

These project-level impacts to habitat are then related to broader scale (bioregional) population and/or habitat trends. The appropriate approach for relating project-level impacts to broader scale trends depends on the type of monitoring identified for MIS in the LRMP as amended by the SNF MIS Amendment ROD. Hence, where the Sierra NF LRMP as amended by the SNF MIS Amendment ROD identifies distribution population monitoring for an MIS, the project-level habitat effects analysis for that MIS is informed by available distribution population monitoring data, which are gathered at the bioregional scale. The bioregional scale monitoring identified in the Sierra NF LRMP, as amended, for MIS analyzed for the Long Ridge and Castle Peak Grazing allotment renewal Project is summarized in Section 3 of this report.

Adequately analyzing project effects to MIS generally involves the following steps:

- Identifying which habitat and associated MIS would be either directly or indirectly affected by the project alternatives; these MIS are potentially affected by the project.

- □ Summarizing the bioregional-level monitoring identified in the LRMP, as amended, for this subset of MIS.
- □ Analyzing project-level effects on MIS habitat for this subset of MIS.
- □ Discussing bioregional scale habitat and/or population trends for this subset of MIS.
- □ Relating project-level impacts on MIS habitat to habitat and/or population trends at the bioregional scale for this subset of MIS.

These steps are described in detail in the Pacific Southwest Region's draft document "MIS Analysis and Documentation in Project-Level NEPA, R5 Environmental Coordination" (May 25, 2006). This Management Indicator Species (MIS) Report documents application of the above steps to select project-level MIS and analyze project effects on MIS habitat for the Long Ridge and Castle Peak Grazing allotment renewal Project.

1.b. Direction Regarding Monitoring of MIS Population and Habitat Trends at the Bioregional Scale.

The bioregional scale monitoring strategy for the Sierra NF's MIS is found in the Sierra Nevada Forests Management Indicator Species Amendment (SNF MIS Amendment) Record of Decision (ROD) of 2007. Bioregional scale habitat monitoring is identified for all twelve of the terrestrial MIS. In addition, bioregional scale population monitoring, in the form of distribution population monitoring, is identified for all of the terrestrial MIS except for the greater sage-grouse. For aquatic macroinvertebrates, the bioregional scale monitoring identified is Index of Biological Integrity and Habitat. The current bioregional status and trend of populations and/or habitat for each of the MIS is discussed in the Sierra Nevada Forests Bioregional Management Indicator Species (SNF Bioregional MIS) Report (USDA Forest Service 2008).

- **MIS Habitat Status and Trend.**

All habitat monitoring data are collected and/or compiled at the bioregional scale, consistent with the LRMP as amended by the 2007 SNF MIS Amendment ROD (USDA Forest Service 2007a).

Habitats are the vegetation types (for example, early seral coniferous forest) or ecosystem components (for example, snags in green forest) required by an MIS for breeding, cover, and/or feeding. MIS for the Sierra Nevada National Forests represent 10 major habitats and 2 ecosystem components (USDA Forest Service 2007a), as listed in Table 1. These habitats are defined using the California Wildlife Habitat Relationship (CWHR) System (CDFG 2005). The CWHR System provides the most widely used habitat relationship models for California's terrestrial vertebrate species (ibid). It is described in detail in the SNF Bioregional MIS Report (USDA Forest Service 2008).

Habitat status is the current amount of habitat on the Sierra Nevada Forests. Habitat trend is the direction of change in the amount or quality of habitat over time. The methodology for assessing habitat status and trend is described in detail in the SNF Bioregional MIS Report (USDA Forest Service 2008).

- **MIS Population Status and Trend.**

All population monitoring data are collected and/or compiled at the bioregional scale, consistent with the LRMP as amended by the 2007 SNF MIS Amendment ROD (USDA Forest Service 2007a). The information is presented in detail in the 2008 SNF Bioregional MIS Report (USDA Forest Service 2008).

Population monitoring strategies for MIS of the Sierra NF are identified in the 2007 Sierra Nevada Forests Management Indicator Species (SNF MIS) Amendment ROD (USDA Forest Service 2007a). Population status is the current condition of the MIS related to the population monitoring data required in the 2007 SNF MIS Amendment ROD for that MIS. Population trend is the direction of change in that population measure over time.

There are a myriad of approaches for monitoring populations of MIS, from simply detecting presence to detailed tracking of population structure (USDA Forest Service 2001, Appendix E, page E-19). A distribution population monitoring approach is identified for all of the terrestrial MIS in the 2007 SNF MIS Amendment, except for the greater sage-grouse (USDA Forest Service 2007a). Distribution population monitoring consists of collecting presence data for the MIS across a number of sample locations over time. Presence data are collected using a number of direct and indirect methods, such as surveys (population surveys), bird point counts, tracking number of hunter kills, counts of species sign (such as deer pellets), and so forth. The specifics regarding how these presence data are assessed to track changes in distribution over time vary by species and the type of presence data collected, as described in the SNF Bioregional MIS Report (USDA Forest Service 2008).

2. Selection of Project level MIS

Management Indicator Species (MIS) for the Sierra NF are identified in the 2007 Sierra Nevada Forests Management Indicator Species (SNF MIS) Amendment (USDA Forest Service 2007a). The habitats and ecosystem components and associated MIS analyzed for the project were selected from this list of MIS, as indicated in Table 1. In addition to identifying the habitat or ecosystem components (1st column), the CWHR type(s) defining each habitat/ecosystem component (2nd column), and the associated MIS (3rd column), the Table discloses whether or not the habitat of the MIS is potentially affected by the Long Ridge and Castle Peak Grazing allotment renewal Project (4th column).

Table 1. Selection of MIS for Project-Level Habitat Analysis for the Long Ridge and Castle Peak Grazing allotment renewal Project.

Habitat or Ecosystem Component	CWHR Type(s) defining the habitat or ecosystem component[1]	Sierra Nevada Forests Management Indicator Species *Scientific Name*	Category for Project Analysis [2]
Riverine & Lacustrine†	lacustrine (LAC) and riverine (RIV)	aquatic macroinvertebrates	N/A
Shrubland (west-slope chaparral types)	montane chaparral (MCP), mixed chaparral (MCH), chamise-redshank chaparral (CRC)	fox sparrow *Passerella iliaca*	Cat. 2
Sagebrush	Sagebrush (SGB)	greater sage-grouse *Centrocercus urophasianus*	Cat. 1
Oak-associated Hardwood & Hardwood/conifer	montane hardwood (MHW), montane hardwood-conifer (MHC)	mule deer *Odocoileus hemionus*	Cat. 2
Riparian	montane riparian (MRI), valley foothill riparian (VRI)	yellow warbler *Dendroica petechia*	Cat. 2
Wet Meadow†	Wet meadow (WTM), freshwater emergent wetland (FEW)	Pacific tree frog *Pseudacris regilla*	N/A
Early Seral Coniferous Forest	ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree sizes 1, 2, and 3, all canopy closures	Mountain quail *Oreortyx pictus*	Cat. 2
Mid Seral Coniferous Forest	ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree size 4, all canopy closures	Mountain quail *Oreortyx pictus*	Cat. 2
Late Seral Open Canopy Coniferous Forest	ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree size 5, canopy closures S and P	Sooty (blue) grouse *Dendragapus obscurus*	Cat. 2

Late Seral Closed Canopy Coniferous Forest	ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), tree size 5 (canopy closures M and D), and tree size 6.	California spotted owl *Strix occidentalis occidentalis*	Cat. 2
		American marten *Martes americana*	
		northern flying squirrel *Glaucomys sabrinus*	
Snags in Green Forest	Medium and large snags in green forest	hairy woodpecker *Picoides villosus*	Cat. 2
Snags in Burned Forest	Medium and large snags in burned forest (stand-replacing fire)	black-backed woodpecker *Picoides arcticus*	Cat. 1

[1] All CWHR size classes and canopy closures are included unless otherwise specified; **dbh** = diameter at breast height; **Canopy Closure classifications:** S=Sparse Cover (10-24% canopy closure); P= Open cover (25-39% canopy closure); M= Moderate cover (40-59% canopy closure); D= Dense cover (60-100% canopy closure); **Tree size classes:** 1 (Seedling)(<1" dbh); 2 (Sapling)(1"-5.9" dbh); 3 (Pole)(6"-10.9" dbh); 4 (Small tree)(11"-23.9" dbh); 5 (Medium/Large tree)(≥24" dbh); 6 (Multi-layered Tree) [In PPN and SMC] (Mayer and Laudenslayer 1988).

[2] **Category 1:** MIS whose habitat is not in or adjacent to the project area and would not be affected by the project.
Category 2: MIS whose habitat is in or adjacent to project area, but would not be either directly or indirectly affected by the project.
Category 3: MIS whose habitat would be either directly or indirectly affected by the project.

[†] Species in these categories will be analyzed separately under the aquatic species MIS report for the Long Ridge and Castle Peak Grazing allotment renewal Project

Category 1 MIS

Species that will not be discussed further in this document include Category 1 and Category 2 MIS. Category 1 defines MIS whose habitat does not occur in or adjacent to the project area. For the Long Ridge and Castle Peak Grazing allotment renewal Project Category 1 MIS include the greater sage-grouse and the black-backed woodpecker. No sagebrush (SGB) or burned forest habitat is currently present in or adjacent to the project area.

Category 2 MIS

Category 2 defines MIS whose habitat is in or adjacent to the project area, but whose habitat would not be directly or indirectly affected by the project. For the Long Ridge and Castle Peak Grazing allotment renewal project category 2 MIS include: fox sparrow, mule deer, yellow warbler, mountain quail, sooty grouse, California spotted owl, American martin, northern flying squirrel, hairy woodpecker, and black-backed woodpecker. These terrestrial species will not be discussed further in this analysis because there will be no changes to current habitat structure or quantity from this project. There will be no changes to the existing trend in the habitat, nor will it lead to a change in the distribution of the aforementioned species across the Sierra Nevada bioregion. **There are no Category 3 terrestrial MIS to bring forward for analysis in this report.** Aquatic MIS will be analyzed separately under the Aquatics Management Indicator Species Report for the Long Ridge and Castle Peak Grazing allotment renewal project.

3. Bioregional Monitoring Requirements for MIS Selected for Project-Level Analysis

3.a. MIS Monitoring Requirements.

The Sierra Nevada Forests Management Indicator Species (SNF MIS) Amendment (USDA Forest Service 2007a) identifies bioregional scale habitat and/or population monitoring for the Management Indicator Species for ten National Forests, including the Sierra NF (USDA Forest Service 2007a). The habitat and/or population monitoring requirements for Sierra NF's MIS are described in the Sierra Nevada Forests Bioregional Management Indicator Species (SNF Bioregional MIS) Report (USDA Forest Service 2008). The applicable habitat and/or population monitoring results are described in the SNF Bioregional MIS Report (USDA Forest Service 2008).

3.b. How MIS Monitoring Requirements are Being Met.

Habitat and/or distribution population monitoring for all MIS is conducted at the Sierra Nevada scale. Refer to the SNF Bioregional MIS Report (USDA Forest Service 2008) for details by habitat and MIS.

4. Description of Proposed Project.

Alternative 1 - No Action

The No Action alternative for grazing authorizations has been defined as no grazing by the Forest Service Handbook (FSH) (FSH 2209.13, Section 92.31). Under this alternative, term grazing permits would be cancelled. Improvements described under the proposed action would not be necessary. Cancellation of term permits must follow direction in Forest Service Manual (FSM) 2231.62d, Forest Service Handbook (FSH) 2209.13, chapter 10 section 16.24, and Part 2 item 11b of the term permit. Structures related to grazing such as water troughs and fences, would be removed if and when feasible.

The Proposed Action- Alternative 2

The Bass Lake Ranger District of the Sierra National Forest is proposing to authorize continued livestock grazing on National Forest System (NFS) lands within the Long Ridge and Castle Peak Range Allotments (Map 1) over a total of approximately 13,350 acres (Table 3 shows acres of suitable rangeland on NFS lands proposed for continued livestock grazing by unit). Livestock grazing would be administered to meet Sierra National Forest Land and Resource Management Plan (Forest Plan) (USDA-Forest Service 1992, as amended) direction for resource management using adaptive management strategies.

Alternative 3

Castle Peak:

Under this alternative there would be no summer season authorized in Castle Peak Allotment. Proposed numbers would be reduced from Proposed Action by 95 cow/calf pair overall. This alternative would authorize 205 cow/calf pair from March 1 to June 30. The season of use and

permitted numbers matches up with the summer range used in conjunction with this allotment (Haskell Allotment has 205 permitted cow/calf pair July 1 to September 30).

Long Ridge:
Under this alternative the proposed numbers are similar to the proposed action. The season of use would be extended by 2 weeks from the Proposed Action season, to allow livestock to use the allotment through June 30 with 165 cow/calf pair authorized. The season of use matches up with Central Camp Allotment permitted season (on date variable from June 1 –July 1), which is used in conjunction with the Long Ridge Allotment.

Table 1: ALTERNATIVE 2: PROPOSED ACTION

Allotment	Pasture	Livestock			Period of Use	
Long Ridge	Long Ridge Horse Pasture (gather pasture)	~100	cattle	cow/ calf	Early March at Livestock Turnout	Early June at Livestock Gather
Long Ridge	Smalley Cove Pasture (PG&E/Forest Service) (gather pasture)	50	cattle	cow/ calf	June 1	June 30
Long Ridge	All Units	125	cattle	cow/ calf	March 1	June 15
Long Ridge	All Units	40	cattle	cow/ calf	March 1	June 15
Castle Peak	Redinger	200	cattle	cow/ calf	March 1	June 30
Castle Peak	Castle Peak	100	cattle	cow/ calf	March 1	June 30
Castle Peak	All Units (including DeMasters Private Land)	40	cattle	cow/ calf	July 1	Sept 15

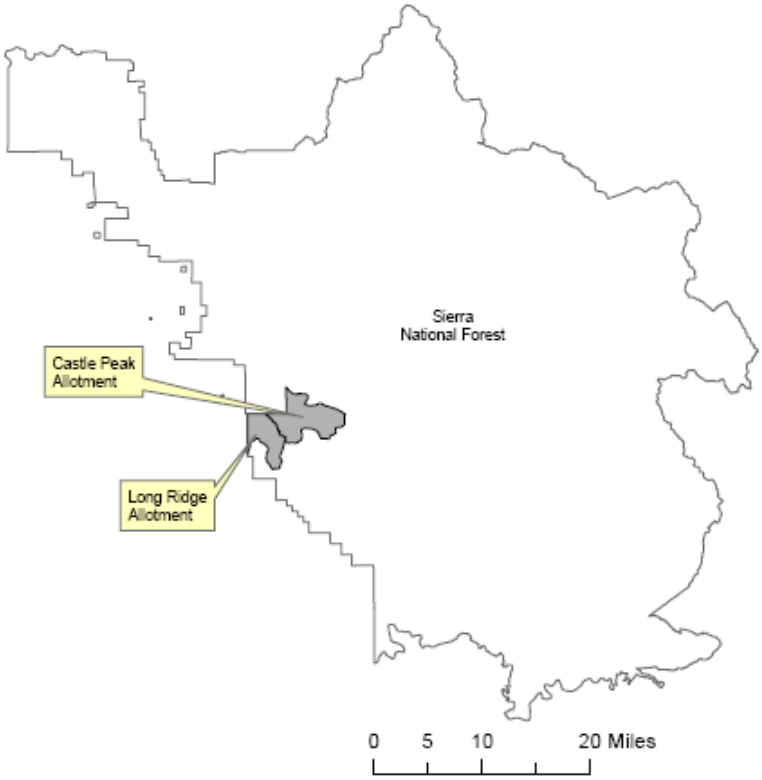
Table 2: ALTERNATIVE 3

Allotment	Pasture	Livestock			Period of Use	
Long Ridge	Long Ridge Horse Pasture (gather pasture)	~100	cattle	cow/ calf	Early March at Livestock Turnout	Early June at Livestock Gather
Long Ridge	Smalley Cove Pasture (PG&E/Forest Service) (gather pasture)	50	cattle	cow/ calf	June 1	June 30
Long Ridge	All Units	125	cattle	cow/ calf	March 1	June 30
Long Ridge	All Units	40	cattle	cow/ calf	March 1	June 30
Castle Peak	Redinger	100	cattle	cow/ calf	March 1	June 30
Castle Peak	Castle Peak	105	cattle	cow/ calf	March 1	June 30

Table 3: National Forest Acres Proposed for Continued Livestock Grazing by Unit

Allotment	Unit	Suitable Acres*	Total Unit Acres**
Castle Peak	Redinger	956	4803
	Castle Peak	529	3957
Long Ridge	Long Ridge	1387	4239
	Horse Pasture	192	193
	Smalley Cove Pasture	154	154

* Reasons for non-suitability: areas where livestock have been fenced out to enhance other resource values, areas where livestock access is restricted by physical barriers (e.g. slope, low forage production) and/or property ownership.
** Total Unit Acres does not include private land acreage



Map 1: Two range allotments in relation to Forest boundary

The Proposed Action (Table 1) is to authorize continued livestock grazing on National Forest System lands within Castle Peak and Long Ridge allotments. Proposed range improvement construction (Table 4) would be completed within 5 years of the decision. In most cases, the Forest Service would provide materials and the permittee would provide labor.

Table 4. Need for management change and proposed action description.

Allotment	Need for Change	Proposed Action Description
Castle Peak	Range readiness concerns with current permitted on-date	Change in season of use from January 1 through June 30 to March 1 through June 30.
	Change in season of use (extension of season)	Authorize 50 cow/calf pair to graze in Castle Peak allotment (in conjunction with privately leased land) July 1 through September 15. Based on a total reduction of 165 Head Months (HMs) from change in on-dates for Castle Peak.
	Range improvement not up to standard	Timberline Corral would be reconstructed to standard.
Long Ridge	Range readiness concerns with current permitted on-date	Change in season and use from January 1 through June 30 to March 1 through June 15
	Change in permitted numbers requested by permittee	Change in permitted numbers based on monitoring which indicates that the allotment has been managed well within standard and is meeting desired conditions. Also based on initial reduction of 100 HMs by changing season of use to delay on-dates. This reduction would be applied to an increase in permitted numbers from 140 to 165 total (equates to 85 HMs). Total reduction with this proposal is 15 HMs
	Additional holding field needed	Proposal would authorize holding field at junction of Southern California Edison Powerhouse #4 Road and County Road 235
	Long Ridge Corral and portion of Horse Pasture Holding Field fence located on Private Land	Long Ridge Corral and that portion of holding field fence that is on Private Land would be removed and reconstructed on adjacent Forest Service land
	Smalley Cove Pasture	Allow use in this field for gathering only. Up to 50 cow/calf pair are authorized during the month of June. Fenceline would be re-aligned to include northern boundary of the National Forest Lands. This pasture incorporates Pacific Gas and Electric (PGE) lands under lease by current permittee.
	Trampling impacts at Teddy's Spring (west side of Long Ridge)	Spring head would be excluded from livestock use with a wire fence
	Trampling impacts at spring on western portion of Horseshoe Bend trail	Spring head would be excluded from livestock use with a wire fence

Mitigation

In response to public comments on the proposal, mitigation measures were developed to reduce possible impacts the action may cause. Implement Pacific Southwest Region Best Management Practices (BMPs) (USDA-Forest Service 1983, 2002) applicable to grazing by:

- Updating the Allotment Management Plans, and;
- Administration of the permits according to the Forest Service Handbook (FSH) 2209.13, Chapter 10 (Permit administration would include grazing utilization monitoring, Annual Operating Instructions, and the enforcement of the allowable use standards (FSH 2209.13, Chapter 10)).

Implement Allowable Use Standards and Guidelines:

- For meadows in early seral status: limit livestock utilization of grass and grass-like plants to 30 percent (or minimum 6-inch stubble height) (RCO#5 120);
- For meadows in late seral status: limit livestock utilization of grass and grass-like plants to a maximum of 40 percent (or minimum 4-inch stubble height) (RCO#5 120);
- Annual grasslands & oak woodlands with > 10 inches annual precipitation and ≤15% slope (1,000-2,500 feet elevation) in satisfactory condition managed for 700 lbs/acre Residual Dry Matter and 1,000 lbs/acre Residual Dry Matter for rangeland in unsatisfactory condition;
- Annual grasslands & oak woodlands with > 10 inches annual precipitation and >15% slope (>2,500 feet elevation) in satisfactory condition managed for 1,000 lbs/acre Residual Dry Matter and 1,200 lbs/acre Residual Dry Matter for rangeland in unsatisfactory condition; and
- Annual grasslands & oak woodlands managed for a minimum of 60 percent cover.

The following project design measures would continue to be implemented through Term Grazing Permits:

- Minimize impacts to fens through salt placement, riding and herding to draw and distribute livestock away from these sensitive areas (Riparian Conservation Objectives #5 118).
- Minimize impacts to pre-historic and historic sites through salt placement and herding to draw and distribute livestock away from these sensitive areas.
- Minimize impacts to streams, seeps and springs through salt placement and herding to draw and distribute livestock away from these sensitive areas (RCO#5 117).

Compliance monitoring of these standards and guidelines would be conducted through grazing permit administration, which would include Annual Operating Instructions, grazing utilization monitoring, and enforcement of the allowable use standards (Forest Service Handbook, 2209.13, Chapter 10).
Desired conditions are for rangelands to be in satisfactory condition and all grazing activities occurring on the forest would have management strategies which achieve or maintain rangeland conditions in satisfactory condition.

Satisfactory rangeland condition is defined in the Forest Plan as having either 1) a livestock

forage condition rating of good or excellent or; 2) late seral ecological status greater than or equal to 60% similarity to potential natural community (PNC), or; 3) a resource value rating of greater than or equal to 76% similarity to desired condition, and stable soils with continuous vegetative cover and rooting throughout available profile.

Table 5. Allowable utilization levels by vegetation community.

Landscape	**Vegetation type**	**Standards for Rangeland in satisfactory condition or late ecological status**	**Standard for rangeland in unsatisfactory condition or early ecological status**
Annual grasslands & oak woodlands with > 10 inches annual precipitation and ≤15% slope (1,000-2,500 feet elevation)	grass and grasslike plants and forbs	700 lbs/acre Residual Dry Matter	1,000 lbs/acre Residual Dry Matter
Annual grasslands & oak woodlands with > 10 inches annual precipitation and >15% slope (>2,500 feet elevation)	grass and grasslike plants and forbs	1,000 lbs/acre Residual Dry Matter	1,200 lbs/acre Residual Dry Matter
Meadows/riparian areas within annual grasslands, oak woodlands, montane and subalpine meadows	grass and grasslike plants and forbs	40 % Use by Weight	30 % Use by Weight
All rangeland types	hardwoods: including (oak/willow and other shrub seedlings/regeneration)	Allow browse on no more than 20% of current annual leader growth and advanced regeneration	Allow browse on no more than 10% of current annual leader growth and advanced regeneration
Annual Grasslands & Oak Woodlands	Annual Grasslands & Oak Woodlands/Uplands	Minimum of 60 percent cover	Minimum of 60 percent cover

The following standard and guideline is designed to achieve and/or maintain desired conditions:

- Pacific Southwest Region Best Management Practices (BMPs) applicable to grazing (USDA-Forest Service 2000, pages 143-147) would be met through Allotment Management Plans and administration of the permits according to the Forest Service

Handbook (FSH) 2209.13, Chapter 10.

If Desired Conditions are not met, the proposed livestock grazing management would be managed by applying adaptive management to meet Forest Plan direction and other applicable laws and regulations, using the results of monitoring and evaluation to guide management practices to meet Forest Plan standards and guidelines and achieve desired conditions.

- Adaptive management includes any combination of the following actions to meet utilization standards and desired conditions: Adjust stocking rate (reduce livestock numbers).
    - Adjust season of use and numbers (timing, duration and head months);
    - Use of salt to control livestock distribution;
    - Herding of livestock to control distribution;
    - Implement rest and rotation grazing system;
    - Incorporate integrated weed management;
    - Construct or modify fencing to apply restrictions on grazing access if unacceptable impacts occur and cannot be reduced through other management practices (e.g. salt placement, herding, drift fences, and/or fenced exclosures;
    - Develop or modify water sources; and
    - Seeding or planting of native grasses and/or shrubs.

- Continue annual utilization and five-year trend monitoring as part of on-going monitoring plan. Identified areas of concern would be monitored adaptively (e.g. streambank disturbance) on an annual basis until desired conditions are met two consecutive years. Once desired conditions are met at identified areas of concern, monitoring would be completed every three to five-years.

Narrative of Proposed Continued Grazing (Proposed Permitted Use)

Castle Peak Allotment: There is a need for change in livestock on-dates for the Castle Peak allotment. Since 1984, this allotment has had a staggered turn-out date (dates which livestock are authorized to enter the allotment) of 100 cow/calf pair each entering the allotment on the 1st of January, February and March. Under this proposal, the on-date for all permitted livestock to enter Castle Peak allotment would be delayed until March 1st. This proposal would authorize 300 cow/calf pair from March 1st through June 30th. The reduction in head months gained from this delayed date would be off-set by authorizing 40 cow/calf pair to graze July 1st through September 15th within the Castle Peak allotment and private land within the allotment that is leased by the current permittee. Improvements to the existing "Timberline Corral" at Saginaw Creek would also be made. This wooden corral and sorting pens would be rebuilt with pipe material at the existing location. Desired conditions are being met (Range Analysis as referenced in Project File).

Long Ridge Allotment: The livestock on-dates for the Long Ridge allotment have historically been scheduled for early January, which in most years is too early for conditions to support grazing in terms of range readiness. This proposal would delay the on-date for Long Ridge until March 1st. The reduction in head months gained from this delay would be off-set by authorizing an additional 25 cow/calf pair to graze in the allotment during the proposed season of use. The

boundary fence for the Smalley Cove pasture would be replaced along County Road 222 and a fence would be constructed along the northern Forest Service boundary of the pasture. This field has had chronic trespass, due to poor fence infrastructure, primarily, by unauthorized livestock and overuse has occurred, particularly in the lower Fish Creek and Smalley Cove riparian areas. This trespass and uncontrolled use has made quantifying the current level of use difficult. Therefore, the proposed livestock use for Smalley Cove pasture is conservative and would authorize up to 50 cow/calf pair for the month of June. This authorized use would be monitored to determine if compliance is being met. If monitoring data shows that the field can support more use over an extended season then an adjustment may be made in season and numbers. A 0.5 acre wire livestock holding trap is proposed at the junction of Country Road 235 and the entrance to Southern California Edison Powerhouse #4. This field would be used to gather straggler livestock at the end of the permitted season. Desired conditions are being met, with the exception of the Smalley Cove pasture (Range Analysis as referenced in Project File), hence the need for change described above.

5. Effects of Proposed Project on the Habitat for the Selected Project-Level MIS.

There are no Category 3 terrestrial MIS to bring forward for analysis in this report. Aquatic MIS will be analyzed separately under the Aquatics Management Indicator Species Report for the Long Ridge and Castle Peak Grazing allotment renewal project.

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Appendix A - THREATENED, ENDANGERED, AND SENSITIVE PLANTS OF THE SIERRA NATIONAL FOREST

Potential to occur within the Castle Peak and Long Ridge Allotments **June 2009**

NAME & FAMILY	COUNTY	NATIONAL FORESTS	FED/ STATE	CNPS	LIFE FORM	BLOOMING PERIOD	ELEV. RANGE (feet)	HABITAT	POTENTIAL TO OCCUR WITHIN CASTLE PEAK OR LONG RIDGE ALLOTMENTS?
Allium yosemitense YOSEMITE ONION Liliaceae	MPA, TUO	SIE, STA (YNP)	-/SR	1B	Per herb bulb	May - June	1500-6900	Rocky talus and scree slopes, seeps, and outcrops. Chaparral, foothill woodland, Lower and upper montane conifer forest	No, outside distributional range.
Botrychium ascendens UPSWEPT MOONWORT	BUT, ELD, MON, PLA. PLU, NEV, SHA, THE, TUL	LAS, PLU, INY, MOD	-/-	2	Per herb, rhizomatous	July-August (spores)	5000-9000	Meadows, marshes, bogs, and fens in lower and upper montane conifer forest. Slightly drier and higher microsites than *B. crenulatum*.	No, suitable habitat not present.
Botrychium crenulatum SCALLOPED MOONWORT Ophioglossaceae	BUT,LAX,MOD?,SBD,TEH,TUL, ID,OR,UT+	LAS, SB, S-T, INY, SEQ, SIE, ANG?	-/-	2	Per herb rhizomatous	June-July (spores)	4875-8125	Meadows, marshes, bogs, and fens in lower and upper montane conifer forest	No, suitable habitat not present.
Botrychium lineare SLENDER MOONWORT Ophioglossaceae	FRE, other states	SIE, INY	Candidate /-	1B	Per herb, rhizomatous	September (August-October) (spores)	8000-9000	Rocky/moist sites in subalpine conifer forest, probably also with B. crenulatum	No, suitable habitat not present.
Botrychium lunaria COMMON MOONWORT	MOD, MON, NEV, TUL	INY, MOD	-/-	2	Per.herb, rhizomatous	August-October (spores)	8000-9000	Meadows, marshes, bogs, and fens in lower and upper montane conifer forest	No, suitable habitat not present.
Botrychium minganese MINGAN MOONWORT	BUT, FRE, MON, PLU, THE, TUL, PLA?, TRI?	INY, LTBU, LAS,MOD, PLU, SEQ, S-T, SENP	-/-	2	Per.herb, rhizomatous	June-July (spores)	4900-7000	Meadows, marshes, bogs, and fens in lower and upper montane conifer forest	No, suitable habitat not present.
Botrychium montanum MOUNTAIN MOONWORT	BUT, MOD, PLU, SHA, THE, ID,OR,UT+	LAS, MOD, PLU	-/-	2	Per.herb, rhizomatous	June-July (spores)	4900-7000	Meadows, marshes, bogs, and fens in lower and upper montane conifer forest	No, suitable habitat not present.

NAME & FAMILY	COUNTY	NATIONAL FORESTS	FED/ STATE	CNPS	LIFE FORM	BLOOMING PERIOD	ELEV. RANGE (feet)	HABITAT	POTENTIAL TO OCCUR WITHIN CASTLE PEAK OR LONG RIDGE ALLOTMENTS?
Bruchia bolanderi BOLANDER'S CANDLE MOSS	ENTIRE SIERRA NEVADA	ELD, SEQ, SIE, STA, TAH	-/-	2	nonvasc. plant (moss)		5000-7500	Endemic to meadows of the Sierra Nevada in the mixed conifer zone. Found on vertical banks of streams	No, no meadow habtat.
Calyptridium pulchellum **MARIPOSA PUSSYPAWS** **Portulacaeae**	**FRE, MAD, MAR**	**SIE**	**T/-**	**1B**	**Ann herb**	**April-May**	**1500-4000**	**Decomposed granite gravel associated with outcrops in foothill woodland and chaparral**	**Suitable habitat present, no plants found during surveys. See text.**
Camissonia sierrae ssp. *alticola* MONO HOT SPRINGS EVENING-PRIMROSE Onagraceae	FRE, MPA	SIE (YNP)	-/-	1B	Ann herb	May - June	4500-8500	Gravel and sand pans and ledges associated with outcrops in chaparral, ponderosa pine, mixed conifer and red fir/lodgepole forests	Mostly occurs above elevation of allotments, no plants found during surveys.
Carlquista muirii MUIR'S RAILLARDELLA Asteraceae	FRE, KRN, MNT, TUL	L-P, SEQ, SIE (SKNP)	-/-	1B	Per herb rhizomatous	July-August	4000-7000	Granite or metamorphic outcrops, in ledges or cracks and gravel flats. In montane chaparral and conifer forest	Mostly occurs above elevation of allotments, no plants found during surveys.
Carpenteria californica **CARPENTERIA, TREE ANEMONE** **Philadelphaceae**	**FRE, MAD**	**SIE**	**-/ST**	**1B**	**Evergreen shrub**	**April-July**	**1500-4400**	**Chaparral, foothill woodland, lower ponderosa pine forest. Mostly in draws and moist areas but found on open dry slopes as well.**	**Yes. Known to occur along Willow Creek on western boundary of Long Ridge Allotment.**
Clarkia biloba ssp. *australis* MARIPOSA CLARKIA Onagraceae.	MPA, TUO?	SIE, STA	-/-	1B	Ann herb	May-July	1000-2500	Chaparral, foothill woodland, only in Merced River Canyon within 2 miles of S. Fork confluence	No, outside distributional range.
Clarkia lingulata MERCED CLARKIA Onagraceae	MPA	SIE, STA	-/SE	1B	Ann herb	May-July	1000-2500	Chaparral, foothill woodland, Merced River Canyon/Bear Creek drainage only	No, outside distributional range.

NAME & FAMILY	COUNTY	NATIONAL FORESTS	FED/ STATE	CNPS	LIFE FORM	BLOOMING PERIOD	ELEV. RANGE (feet)	HABITAT	POTENTIAL TO OCCUR WITHIN CASTLE PEAK OR LONG RIDGE ALLOTMENTS?
Collomia rawsoniana RAWSON'S FLAMING TRUMPET Polemoniaceae	MAD, MPA	SIE	-/-	1B	Per herb rhizomatous	Jun-Sep	2000-7000	Along streams and around meadows in ponderosa pine and mixed conifer forest, sometimes in open forest where subsurface moisture is present	Known to occur just outside of Castle Peak allotment, but no populations have been found within the allotments.
Cypripedium montanum MOUNTAIN LADY'S-SLIPPER Orchidaceae	DNT,HUMMAD,MEN,MOD, MPA,PLU,SIE, SIS,SMT,SON, TEH,TRI,TUO, OR, WA++	ELD, KLA, LAS, MEN, MOD, PLU, S-T, SIE, S-R, STA	-/-	4	Per herb rhizomatous	May-Jul	4,000-7200	Moist areas and dry slopes in late-successional conifer forest. On the Sierra only known from general vicinity of Nelder Grove	No, outside distributional range. Southernmost populations in the Sierra Nevada are in the vicinity of Nelder Grove.
Delphinium inopinum UNEXPECTED LARKSPUR Ranunculaceae	FRE, INY, KRN, TUL, VEN	L-P, SEQ, SIE	-/-	4	Per herb	May-Jul	6000-9000	Rocky sites in upper montane conifer forest (Monarch Wilderness)	No, outside distributional range.
Dicentra nevadensis TULARE COUNTY BLEEDING HEART Papaveraceae	FRE, TUL	SEQ, SIE	-/-	4	Per herb rhizomatous	Jun-Aug	7500-10000	Alpine fell fields, gravelly crevices and openings in subalpine conifer forest Only known occurrence on Sierra NF is in John Muir Widlerness	No, outside distributional range.
Draba sharsmithii MT. WHITNEY DRABA Brassicaceae	FRE, INY, TUL	INY, SIE	-/-	1B	Per herb	Jul-Aug	Above 11000'	Talus in subalpine forests and alpine fell-fields, on dry granitic sands and gravels, or in protected rock crevices	No, outside distributional range.
Epilobium howellii SUBALPINE FIREWEED Onagraceae	FRE, MNO, SIE	ELD, INY, LTB, SIE, STA, TAH	-/-	1B	Per herb stolniferous	Jul-Aug	5000-8800	Wet meadows and mossy seeps in conifer forest	No, outside distributional range.
Erigeron aequifolius HALL'S DAISY Asteraceae	FRE, KRN, TUL	INY, SEQ, SIE	-/-	1B	Per herb rhizomatous	Jul-Aug	5200-8000	Steep, rocky ridges and in crevices in mixed conifer forests. Only Sierra NF occurrence is on limestone 2at 5900' in Monarch Wilderness	No, outside distributional range.

NAME & FAMILY	COUNTY	NATIONAL FORESTS	FED/ STATE	CNPS	LIFE FORM	BLOOMING PERIOD	ELEV. RANGE (feet)	HABITAT	POTENTIAL TO OCCUR WITHIN CASTLE PEAK OR LONG RIDGE ALLOTMENTS?
Eriogonum nudum var. *regivirum* KINGS RIVER BUCKWHEAT Polygonaceae	FRE	SIE, SEQ	-/-	1B	Per herb	Aug-Nov	700-2000	Carbonate slopes in chaparral and foothill woodland next to Kings River trail.	No, outside distributional range.
Eriophyllum congdonii CONGDON'S WOOLLY SUNFLOWER Asteraceae	MPA	SIE, STA	-/SR	1B	Ann herb	Apr-Jun	1850-6000	Cracks and talus of metamorphic rocks, mostly on steep inaccessible slopes in chaparral, foothill woodland, lower montane conifer forest	No, outside distributional range.
Erythronium pluriflorum SHUTEYE PEAK FAWN LILY Liliaceae	MAD	SIE	-/-	1B	Per herb (Bulb)	May-Jul	6500-9000	Rocky open sites as well as meadow-type sites in red fir./lodgepole forest and in subalpine conifer forest	No, outside distributional range.
Fissidens aphelotaxifolious BROOK POCKET-MOSS Moss	MAD, SIS	KLA, PLU, SIE, TAH, STA	-/-	2	nonvasc. plant (moss)	Summer - Fall	0-6300	Wet soil and rocks near streams, waterfalls, and drainages where peak flow does not occur	Known from only one site in the Sierra NF, in mixed conifer forest above 5,000 feet elevation.
Helodium blandowii BLANDOW'S BOG-MOSS Moss	FRE, MON, TAH, INY	KLA, LAS, PLU, MOD, TAH, LTBMU, INY, STA, SIE, E-D, SEQ, K-C	-/-	2	nonvasc. plant (moss)	Summer	6500-9000	Wet meadows, fens, and seeps in subalpine coniferous forests	No, outside distributional range.
Heterotheca monarchensis MONARCH GOLDENASTER Asteraceae	FRE	SEQ, SIE	-/-	1B	Per herb	Jun-Oct	5700-6000	Limestone cracks, ledges, and sandy flats at base of cliffs surrounded by canyon live oak woodland	No, outside distributional range.
Horkelia parryi PARRY"S HORKELIA Rosaceae	AMA, CAL, MPA, ELD	STA, ELD, SIE	-/-	1B	Per herb	Apr-Jun	0-3500	Dry, open areas in chaparral, with partial to full shade;often with live oaks. Prefers slightly to moderately acidic soils	No, outside distributional range.

NAME & FAMILY	COUNTY	NATIONAL FORESTS	FED/ STATE	CN PS	LIFE FORM	BLOOMING PERIOD	ELEV. RANGE (feet)	HABITAT	POTENTIAL TO OCCUR WITHIN CASTLE PEAK OR LONG RIDGE ALLOTMENTS?
Hulsea brevifolia SHORT-LEAVED HULSEA Asteraceae	FRE, MAD, MPA, TUL, TUO	INY, SEQ, SIE, STA	-/-	1B	Per herb	Jun-Aug	5000-9000	Granitic or volcanic soils in openings and under canopy in mixed conifer and red fir forest	None found during field surveys.
Leptosiphon serrulatus **MADERA LEPTOSIPHON**	**FRE, KER, MAD, MAR, TUL**	**SEQ, SIE**	**-/-**	**1B**	**Ann. herb**	**May-Jun**	**1000-4100**	**Dry slopes in cismontane oak woodland and lower montae coniferous forest. Usually in DG, one instance on serpentine.**	**Suitable habitat present, no plants found during surveys. See text.**
Lewisia congdonii CONGDON'S LEWISIA Portulacaceae	FRE, MPA	SEQ, SIE, STA (YNP, SKNP)	-/SR	1B	Per herb	Apr-Jun	1900-7000	Rock faces, cracks, and ledges; scree and talus, spoil piles of Barite Mine. Metamorphics or granitics. Chaparral and conifer forest	No, outside distributional range.
Lewisia disepala YOSEMITE LEWISIA Portulacaceae	KRN, MAD, MPA, TUL	SEQ, SIE (YNP, SKNP)	-/-	1B	Per herb	Feb-Jun	4000-7500	Granitic sand and gravel in ponderosa pine, mixed conifer, and upper montane coniferous forest	Mostly occurs above elevation of allotments, no plants found during surveys. .
Lewisia kelloggii ssp. *kelloggii* KELLOG'S LEWISIA	ELD, MAR, MAD, NEV, PLA, PLU, SIE	ELD, PLU, SIE, TAH, YNP	-/-	*	Per. herb	May-Jun	6000-11000	Open, gravelly flats in mixed conifer and subalpine forest	No suitable habitat present
Lupinus citrinus var. *citrinus* ORANGE LUPINE Fabaceae	FRE, MAD	SIE	-/-	1B	Ann herb	Apr-Jun	1500-5500	Granitic sand and gravel on flats and pans of outcrops, and in coarse soil adjacent to outcrops.	Suitable habitat present, no plants found during surveys.
Lupinus gracilentus SLENDER LUPINE Fabaceae	MAR, INY, TUO	INY, YNP, STA, SIE	-/-	1B	Per. herb	Jul-Aug	8000-11,500	Subalpine coniferous forest	No, outside distributional range.
Lupinus lepidus var. culbertsonii HOCKETT MEADOWS LUPINE Fabaceae	TUL, FRE, KER, INY	INY, SEQ, K-C, SIE,	-/-	1B	Per. herb	Jul-Aug	8000-10,000	Meadows, sub-alpine coniferous forests on mesic rocky sites	No, outside distributional range.
Meesia triquetra THREE-RANKED HUMP MOSS	FRE, MAD, MAR	SEQ, SIE, STA (SKCNP)	-/-	2	Nonvas. plant (moss)	ID in Summer and Fall	4500-8000	Acidic montane meadows in conifer forest (fens).	No meadows present in project area.

NAME & FAMILY	COUNTY	NATIONAL FORESTS	FED/ STATE	CNPS	LIFE FORM	BLOOMING PERIOD	ELEV. RANGE (feet)	HABITAT	POTENTIAL TO OCCUR WITHIN CASTLE PEAK OR LONG RIDGE ALLOTMENTS?
Meesia uliginosa ONE-NERVED HUMP MOSS	SIS to TUL	SEQ, SIE, STA, TAH	-/-	2	nonvas (moss)	ID in Summer and Fall	7500-9000	Saturated meadows in upper mixed conifer forest.	No meadows present in project area.
Mielichhoferia elongata *Moss*	FRE, HUM, LAK, MAR, NEV, PLA, SCZ, SIS, TRI, TUL	KLA, S-T, MEN, PLU, SIE, TAH, SEQ, STA	-/-	2	nonvas c. plant (moss)		0-3550	Metamorphic, sedimentary, limestone, or serpentine soils with high copper content. Usually chapparral or foothill woodland	No, outside distributional range.
Mimulus filicaulis SLENDER-STEMMED MONKEYFLOWER Scrophulariaceae	MPA, TUO	(Suspected SIE), STA	-/-	1B	Ann herb	Apr-Aug	3900-5700	Vernally moist sites in foothill woodland, conifer forest	No, outside distributional range.
Mimulus gracilipes SLENDER-STALKED MONKEYFLOWER Scrophulariaceae	FRE, MPA, TUO	SEQ, SIE, STA (YNP)	--	1B	Ann herb	Apr-Jun	1500-4225	Open gravelly areas in chaparral, ponderosa pine forest (often in burns and disturbed areas)	Suitable habitat present, no plants found during surveys.
Mimulus pulchellus PANSY MONKEYFLOWER Scrophulariaceae	CAL, MPA, TUO	(SIE), STA	--	1B	Ann herb	May-Jul	1950-6500	Vernally wet areas in conifer forest (not yet found on the Sierra NF)	No, outside distributional range.
Peltigera hydrotheria VEINED WATER LICHEN	West slope of the Sierra Nevada, other states	SEQ, SIE, STA	--	--	aquatic lichen	ID in Summer and Fall	4,000-8,000	Cold, clear, unpolluted streams in conifer forests.	No, below lower elevational limit.
Petrophyton caespitosum ssp. acuminatum MARBLE ROCKMAT	FRE, TUL, INY	INY, SIE, SEQ	-/-	1B	Per. subshrub	Aug-Sept	3900-7550	Lower to upper coniferous forests on carbonate or granitic, rocky substrates	No, outside distributional range.
Sidalcea keckii KECK'S CHECKERBLOOM Malvaceae	FRE, TUL	SIE, SEQ	E/-	1B	Ann herb	Apr-May	400-1500	Serpentine soils; clay soils.	No, outside distributional range.
Streptanthus fenestratus TEHIPITE VALLEY JEWEL-FLOWER Brassicaceae	FRE	SEQ, SIE (SKNP)	1/1	1B	Ann herb	May-Jul	4000-7000	Lower montane conifer forest, Upper montane conifer forest.	No, outside distributional range.

NAME & FAMILY	COUNTY	NATIONAL FORESTS	FED/ STATE	CN PS	LIFE FORM	BLOOMING PERIOD	ELEV. RANGE (feet)	HABITAT	POTENTIAL TO OCCUR WITHIN CASTLE PEAK OR LONG RIDGE ALLOTMENTS?
Trifolium bolanderi BOLANDER'S CLOVER Fabaceae	FRE, MAD, MPA	SIE (YNP)	--	1B	Per herb	Jun-Aug	6500-7500	Montane meadows in mixed conifer forest	No, no meadows present in project area.
Viola pinetorum ssp. *grisea* GREY-LEAVED VIOLET Violaceae	KRN, SBD, TUL	INY, S-B, SEQ, SIE	--	1B	Per herb	Apr-Jul	4875-11050	Dry peaks and slopes in subalpine conifer forest and upper montane conifer forest	No, outside distributional range.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
81420-2008-TA-1672-1

SEP 05 2008

Mr. David Martin
District Ranger
Bass Lake Ranger District
Sierra National Forest
57003 Road 225
North Fork, California 93646

Subject: Lone Ridge and Castle Peak Grazing Allotments, Bass Lake Ranger District, Sierra National Forest

Dear Mr. Martin:

This is in response to your letter that was received August 6, 2008, requesting that the U.S. Fish and Wildlife Service (Service) review the proposed Lone Ridge and Castle Peak Grazing Allotments, Bass Lake Ranger District, Sierra National Forest. The Bass Lake Ranger District is proposing to authorize continued livestock grazing on National Forest System lands within Lone Ridge and Castle Peak Grazing Allotments for a total of 13,350 acres. At issue are the potential effects to the threatened California red-legged frog (*Rana aurora draytoni*). This letter is issued under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*)(Act).

In reviewing the effects of this project, the Service has relied upon: (1) the July 2008, *California Red-legged Frog Habitat Assessment for 2008 Bass Lake Ranger District Allotments*; (2) *the August 2008, Aquatic Species Biological Assessment and Evaluation Report for the Lone Ridge and Castle Peak Grazing Allotments*; and (3) other information available to the Service.

Although the proposed grazing allotments contain suitable habitat for the California red-legged frog, the Service concurs with your determination that the continued livestock grazing within the Lone Ridge and Castle Peak Grazing Allotments is not likely to adversely affect the California red-legged frog. We base our determination on the following:

1. the grazing allotments are outside the historic range of the California red-legged frog;
2. there are no known sightings of California red-legged frog within the grazing allotments;
3. the nearest known California red-legged frog population is approximately 75 miles away;
4. surveys of aquatic features within and near the grazing allotments have not resulted in the detection of any California red-legged frogs; and

TAKE PRIDE IN AMERICA

5. the majority of the primary use areas do not contain suitable California red-legged frog breeding habitat.

Unless new information reveals effects of the proposed action that may affect listed species in a manner or to an extent not considered; or the project is modified in a manner that causes an effect to the listed species that was not considered; or a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to the Act, is necessary.

Please address any questions or concerns regarding this response to Jeremiah Karuzas or Amy Fesnock, Branch Chief, at (916) 414-6600.

Sincerely,

Chris Nagano
Deputy Assistant Field Supervisor

cc:
Mr. Phil Strand, Fisheries Program Manager, Sierra National Forest, Clovis, California

United States
Department of
Agriculture

Bass Lake Ranger District

57003 Road 225
North Fork, CA 93643-9734
Phone: 559 877-2218
Fax: 559 877-3108

File Code: 2670
Date: August 8, 2008

Amy Fesnock
Branch Chief
Forest and Foothills Ecosystems
Endangered Species Division
Sacramento Office of the US Fish and Wildlife Service
2800 Cottage Way, Suite W 2605
Sacramento, CA 95825

Amy;

The attached biological assessment documents the affects on federally listed species from authorizing continued livestock grazing within the Long Ridge and Castle Peak Allotments on the Bass Lake Ranger District of the Sierra National Forest.

We are requesting written concurrence on a "May affect but not likely to adversely affect" for the California red-legged frog. The allotments and the biological assessment have been discussed with Jeremiah Karuzas, who requested that the document be forwarded. Please contact Phil Strand at 559-297-0706 (ext. 4883) for questions or comments on the assessment.

Thank you,

DAVID W. MARTIN
District Ranger
Bass Lake District
Sierra National Forest

Chowchilla Red Top
Resource Conservation District
Post Office Box 531
Chowchilla, CA 93610

October 20, 2012

Sierra Nevada Conservancy
11521 Blocker Dr. Ste 205
Auburn, CA 95603

RE: Support for Grant Application – Long Ridge Allotment Rangeland Improvements Project

To Whom It May Concern:

On behalf of the Chowchilla Red Top Resource Conservation District (RCD), I want to express full support for the Yosemite/Sequoia Resource Conservation and Developments Council's Long Ridge Allotment Rangeland Improvements Project. This project is designed to improve livestock distribution by providing off-site livestock water developments resulting in improved use and condition for upland forage, reducing localized impacts and improving riparian conditions. The success of this project directly assists in the preservation of ranches and agricultural lands.

It is the mission of Chowchilla Red Top RCD to provide education and technical guidance in sustainable resource conservation and management to our communities and landowners and managers both current and future. The Chowchilla Red Top RCD is in Madera County that is adjacent to this project and has the objective of assisting people in their efforts to utilize and manage natural resources as well as having the responsibility of providing leadership and guidance in regards to the use of natural resources within and around Madera County. Used effectively, the partnership between Chowchilla Red Top RCD and Yosemite/Sequoia RC & D will: Increase participation and understanding from landowners, citizen groups and other agencies; improve understanding of natural resource management issues; generate public support for viable recommendations; and reduce duplication of efforts for this project and projects in the future.

The Chowchilla Red Top Resource Conservation District is excited to partner with the Yosemite/Sequoia Conservation and Development Council and intends on enhancing the project outcome in anyway feasible. This partnership and project will help us improve the land, while providing valuable outcomes to the long-time local Ranchers of the Sierra Nevada. If you should have any questions, please contact me at 559-642-3263 or info @cfwatershed.org.

Thank you for taking the time to review our support letter. We hope that the Sierra Nevada Conservancy will give this project its full consideration.

Sincerely,

Norman Kuhr
President
Chowchilla Red Top RCD

Coarsegold Resource Conservation District
P. O. Box 1288
North Fork, California 93643
Telephone (559) 877-2973

Directors: Nancy Beavers, John Kilburn, Aaron Kern
Douglas Bowman, Bob Buckles

October 20, 2012

Sierra Nevada Conservancy
11521 Blocker Dr. Ste 205
Auburn, CA 95603

RE: Support for Grant Application – Long Ridge Allotment Rangeland Improvements Project

To Whom It May Concern:

On behalf of the Coarsegold Resource Conservation District (CRCD), I want to express full support for the Yosemite/Sequoia Resource Conservation and Developments Council's (Y/SRC&D) Long Ridge Allotment Rangeland Improvements Project. This project is designed to improve livestock distribution by providing off-site livestock water developments resulting in improved use and condition for upland forage, reducing localized impacts and improving riparian conditions. The success of this project directly assists in the preservation of ranches and agricultural lands.

The mission of the CRCD is to promote, protect, and improve the diverse natural resources of Eastern Madera County. The meadow Restoration and Forage Improvement Project falls well within our mission. The CRCD is currently working on a project that will complete the planning and National Environmental Policy Act (NEPA) California Environmental Quality Act (CEQA) analysis necessary to successfully repair several high priority meadows within the 80.000 acre Willow Creek watershed, which contains 290 acres of meadow, 10 miles of stream and 42 high priority meadows within the Sierra National Forest. This will promote watershed health by improving water quality, quantity, and aquatic habitat of the Willow Creek Watershed. The CRCD project is close to the Y/S RC & D project and is also with the Sierra National Forest, so this would be a tremendous partnership.

The Coarsegold Resource Conservation District is excited to partner with the Yosemite/Sequoia Conservation and Development Council and intends on enhancing the project outcome in anyway feasible. This partnership and project will help us improve the land, while providing valuable outcomes to the long-time local Ranchers of the Sierra Nevada. If you should have any questions, please contact me at longbeards@netptc.net.

Thank you for taking the time to review our support letter. We hope that the Sierra Nevada Conservancy will give this project its full consideration.

Sincerely,

Doug Bowman
President
Coarsegold RCD

Central Sierra Watershed Committee
Jeannie Habben, Facilitator/Coordinator
Post Office Box 1061, Coarsegold, CA 93614
559-642-3263

October 20, 2012

Sierra Nevada Conservancy
11521 Blocker Dr. Ste 205
Auburn, CA 95603

RE: Support for Grant Application – Long Ridge Allotment Rangeland Improvements Project

To Whom It May Concern:

On behalf of the Central Sierra Watershed Committee (CSWC), I want to express full support for the Yosemite/Sequoia Resource Conservation and Developments Council's Long Ridge Allotment Rangeland Improvements Project. This project is designed to improve livestock distribution by providing off-site livestock water developments resulting in improved use and condition for upland forage, reducing localized impacts and improving riparian conditions. The success of this project directly assists in the preservation of ranches and agricultural lands.

The major goal of CSWC is to create partnerships using a collaborative approach to find solutions for improving our watersheds and to educate those in the watersheds we serve in all areas of natural resources. Our mission is to promote the quality, quantity, and aesthetic values of our water resources through the conservation and restoration of our watersheds. Because of this, CSWC is prepared to coordinate and communicate with Y/S RC&D to assist with the success of this project.

The Central Sierra Watershed Committee is excited to partner with the Yosemite/Sequoia Conservation and Development Council and intends on enhancing the project outcome in anyway feasible. This partnership and project will help us improve the land, while providing valuable outcomes to the long-time local Ranchers of the Sierra Nevada. If you should have any questions, please contact me at 559-642-3263 or info@cfwatershed.org.

Thank you for taking the time to review our support letter. We hope that the Sierra Nevada Conservancy will give this project its full consideration.

Sincerely,

Facilitator/Coordinator
Central Sierra Watershed Committee

****

Covering the foothills of Mariposa, Madera, and Fresno Counties

Foundation for Resource Conservation
a 501(c)3 organization
P.O. Box 1109, North Fork, CA 93643 • 559-877-4620

October, 15 2012

Sierra Nevada Conservancy

11521 Blocker Dr. Ste 205

Auburn, CA 95603

RE: Support for Grant Application – Long Ridge Allotment Rangeland Improvements Project

To Whom It May Concern:

On behalf of the Foundation for Resource Conservation Inc. (FRC), I want to express full support for the Yosemite/Sequoia Resource Conservation and Developments Council's Long Ridge Allotment Rangeland Improvements Project. This project is designed to improve livestock distribution by providing off-site livestock water developments resulting in improved use and condition for upland forage, reducing localized impacts and improving riparian conditions. The success of this project directly assists in the preservation of ranches and agricultural lands.

FRC was formed to help with education, and research ways to improve our environment. We have been a part of the community outreach by helping with the field trips, and local meetings. I have participated in classes about communications with ranchers, and horsemen. All parties agree that it is time for a better way of doing things. This project is one of the most important to implement. By giving the livestock an easier place to get water, and food they will stay more on the sides of the meadows. The meadow waterways can then been stabilized with help from a pool of our volunteers. Everyone walks away a winner.

The Foundation for Resource Conservation Inc. is excited to partner with the Yosemite/Sequoia Conservation and Development Council and intends on enhancing the project outcome in anyway feasible. This partnership and project will help us improve the land, while providing valuable outcomes to the local Ranchers of the Sierra Nevada. If you should have any questions, please contact me at (559-877-4620), or djmiller@netptc.net. Thank you for taking the time to review our support letter. We hope that the Sierra Nevada Conservancy will give this project its full consideration.

Sincerely,

Diann Miller

Secretary

NORTH FORK
COMMUNITY DEVELOPMENT COUNCIL, INC.
Post Office Box 1484 • North Fork, CA 93643
Tel: (559) 877-2244 • Fax: (559) 877-4267
email: info@northforkcdc.org

October 16, 2012

Sierra Nevada Conservancy

11521 Blocker Dr. Ste 205

Auburn, CA 95603

RE: Support for Grant Application – Long Ridge Allotment Rangeland Improvements Project

To Whom It May Concern:

On behalf of the North Fork Community Development Council (NFCDC), I want to express full support for the Yosemite/Sequoia Resource Conservation and Developments Council's Long Ridge Allotment Rangeland Improvements Project. This project is designed to improve livestock distribution by providing off-site livestock water developments resulting in improved use and condition for upland forage, reducing localized impacts and improving riparian conditions. The success of this project directly assists in the preservation of ranches and agricultural lands.

The NFCDC is located next door to the Sierra National Forest and is directly interested in creating and supporting projects in the area that positively affect our natural resources while improving the local economy. The Long Ridge Allotment Rangeland Improvements Project does exactly that, improves and protects our natural resources while benefiting the local ranchers and entrepreneurs.

The NFCDC was incorporated in June of 1994 to serve as an umbrella organization to develop and improve North Fork California. The primary project of the NFCDC is to convert the former South Fork Sawmill into economically productive and environmental safe property.

The NFCDC is excited to partner with the Yosemite/Sequoia Conservation and Development Council and intends on enhancing the project outcome in anyway feasible. This partnership and project will help us improve the land, while providing valuable outcomes to the local Ranchers of the Sierra Nevada. If you should have any questions, please contact me at c.chaille@netptc.net.

Thank you for taking the time to review our support letter. We hope that the Sierra Nevada Conservancy will give this project its full consideration.

Sincerely,

Randy Chaille
Vice-President
North Fork Community Development Council

NORTH FORK RANCHERIA
OF MONO INDIANS OF CALIFORNIA

TRIBAL GOVERNMENT OFFICE
P.O. Box 929
North Fork, CA 93643-0929
(559) 877-2461
Fax (559) 877-2467
1-866-291-9909

October 10, 2012

Sierra Nevada Conservancy
11521 Blocker Dr. Ste 205
Auburn, CA 95603

RE: Support for Grant Application – Long Ridge Allotment Rangeland Improvements Project
To Whom It May Concern:

The North Fork Rancheria of Mono Indians of California, a federally recognized tribe, provides services to the tribal population through various local, state and federal agencies. One program that the tribe has developed is the Environmental Protection Department whose mission is to preserve and protect cultural resources and the environment for the tribe, community, and future generations through pollution prevention, restoration, community education and partnerships. We have reviewed the overall goals and objectives of Yosemite/Sequoia Resource Conservation and Developments Council's Long Ridge Allotment Rangeland Improvements Project.

YSRCDC is one of many tribal stakeholders that we work with for environmental issues in our community. This project is designed to improve livestock distribution by providing off-site livestock water developments resulting in improved use and condition for upland forage, reducing localized impacts and improving riparian conditions. Protection of known springs, as indicated in the scope of work, is worthwhile and parallels the tribe's mission to protect resources.

The North Fork Rancheria of Mono Indians of California is excited to partner with the Yosemite/Sequoia Conservation and Development Council and intends on providing any information regarding natural and cultural resources to this project. If you should have any questions, please contact our Interim Environmental Director, Christina McDonald, 559-877-2461 x.322 or cmcdonald@northforkrancheria-nsn.gov

We hope that the Sierra Nevada Conservancy will give this project its full consideration.

Sincerely,

Judy E. Fink
Tribal Chairperson
North Fork Rancheria of Mono Indians of California

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
425 N. Gateway, Suite K
Madera, CA 93637
Ph: (559) 674-2108 Ext 3 Fax: (559) 674-2109

October 15, 2012

Sierra Nevada Conservancy
11521 Blocker Dr. Ste 205
Auburn, CA 95603

RE: Support for Grant Application – Long Ridge Allotment Rangeland Improvements Project

To Whom It May Concern:

On behalf of the Natural Resources Conservation Service (NRCS), I want to express full support for the Yosemite/Sequoia Resource Conservation and Developments Council's Long Ridge Allotment Rangeland Improvements Project. This project is designed to improve livestock distribution by providing off-site livestock water developments resulting in improved use and condition for upland forage, reducing localized impacts and improving riparian conditions. The success of this project directly assists in the preservation of ranches and agricultural lands.

NRCS partners with agencies and works with landowners through conservation planning and assistance designed to benefit the soil, water, air, plants, and animals that result in productive lands and healthy ecosystems. We have been working together with the RC&D and this proposed project will aid in our mission of helping people help the land.

The NRCS is excited to partner with the Yosemite/Sequoia Conservation and Development Council and intends on enhancing the project. This partnership and project will help us improve the land, while providing valuable outcomes to the local Ranchers of the Sierra Nevada. If you should have any questions, please contact me (559) 674-2108x111

Thank you for taking the time to review our support letter. We hope that the Sierra Nevada Conservancy will give this project its full consideration.

Sincerely,

Jennifer L Johnson

District Conservationist, Madera Field Office

Cc: Curtis Tarver, Assistant State Conservationist for Field Operations, Fresno Area Office

The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.

An Equal Opportunity Provider and Employer

October 17, 2012

Sierra Nevada Conservancy
11521 Blocker Dr. Ste 205
Auburn, CA 95603

RE: Support for Grant Application – Long Ridge Allotment Rangeland Improvements Project
To Whom It May Concern:

On behalf of my family ranch, I want to express full support for the Yosemite/Sequoia Resource Conservation and Developments Council's Long Ridge Allotment Rangeland Improvements Project. This project is designed to improve livestock distribution within my allotment by providing off-site livestock water developments resulting in improved use and condition for upland forage, reducing localized impacts and improving riparian conditions as well as providing materials for much needed infrastructure to facilitate the management of my livestock. The success of this project directly assists in the preservation of ranches and agricultural lands.

My family and I are excited to partner with the Yosemite/Sequoia Conservation and Development Council and intends on enhancing the project outcome in anyway feasible. This partnership and project will help us improve the land, while providing valuable outcomes to the local Ranchers of the Sierra Nevada. If you should have any questions, please contact me at (559) 281-0857.

Thank you for taking the time to review our support letter. We hope that the Sierra Nevada Conservancy will give this project its full consideration.

Sincerely,

Gary Pamplin

Gary Pamplin

Picayune Rancheria
of the
CHUKCHANSI INDIANS
46575 Rd. 417 – Coarsegold, CA – (559) 683-6633 – FAX (559) 683-0599)

The Picayune Rancheria Tribal Conservation District

RE: Long Ridge Allotment Rangeland Improvements Project

Date: October 17, 2012

Attn: To whom it may concern:

It is the understanding of the Picayune Rancheria & Tribal Conservation District that the U.S. Forest Service, along with permittees (associated ranchers) and the Yosemite-Sequoia Resource Conservation & Development Council (YSRCRC) will join in a collaborative effort. The YSRCRC will act as the fiscal agent; the U.S. Forest Service along with permittees (associated ranchers) will implement the projects.

The Picayune Rancheria & Tribal Conservation supports the proposed out comes; the overall improved livestock management, 0.02 miles of restored riparian habitat integrity and improved water quality and improved riparian habitat through implementation of water developments, fencing and livestock handling facilities which would specifically result in better livestock distribution across the allotment, limit localized impacts to riparian areas and result in improved forage, vegetation and soil conditions on 600 acres. In addition, this proposal would facilitate and improve livestock handling during gathering and round-up to ensure that stock are securely and safely handled, in an efficient manner that would minimize operating costs to the permittees and help to ensure viability of their ranching operations and compliance with terms and conditions of their Term Grazing Permits.

Thank you,

Nancy Ayala
Picayune Rancheria Chairperson

Jennifer Stanley
Picayune Rancheria Secretary

Michel Wynn
Tribal Conservation Member

Mary Motola
Tribal Conservation Member

October 19, 2012

Sierra Nevada Conservancy
11521 Blocker Dr. Suite 205
Auburn, CA 95603

RE: Support for Grant Application – Long Ridge Allotment Rangeland Improvements Project

To Whom It May Concern:

On behalf of the San Joaquin Valley Leadership Forum, I want to express full support for the Yosemite/Sequoia Resource Conservation and Development Council's Long Ridge Allotment Rangeland Improvements Project. This project is designed to improve livestock distribution by providing off-site livestock water developments resulting in improved use and condition for upland forage, reducing localized impacts and improving riparian conditions. The success of this project directly assists in the preservation of ranches and agricultural lands.

Our organization is affiliated with the Council – and has supported many of its resource management programs and projects over the last 10 years. Our area of interest within the eight counties region of the San Joaquin Valley – from the headwaters within the Sierra Nevada to the delta include education, sustainable economic development and stewardship of our natural environment – including working landscapes.

The San Joaquin Valley Leadership Forum is pleased to partner with the Yosemite/Sequoia Conservation and Development Council and intends on enhancing the project outcome in anyway feasible. This partnership and project will help us improve the land, while providing valuable outcomes to the long-time local Ranchers of the Sierra Nevada. If you should have any questions, please contact me at: 559.970.6320 – or via email at: stevehaze007@gmail.com .

Thank you for taking the time to review our support letter. We hope that the Sierra Nevada Conservancy will give this project its full consideration.

Sincerely,

_____
Steve Haze
Program Director

SJVLF – PO Box 42 Auberry, CA 93602
Tel: 559.970.6320 – Fax: 559.855.8849
www.sjvwlf.org

RESOURCE
CONSERVATION DISTRICTS

SIERRA RESOURCE CONSERVATION DISTRICT

October 18, 2012

Sierra Nevada Conservancy
11521 Blocker Dr. Ste 205
Auburn, CA 95603

RE: Support for Grant Application – Long Ridge Allotment Rangeland Improvements Project
To Whom It May Concern:

On behalf of the Sierra Resource Conservation District (SRCD), I want to express full support for the Yosemite/Sequoia Resource Conservation and Developments Council's Long Ridge Allotment Rangeland Improvements Project. This project is designed to improve livestock distribution by providing off-site livestock water developments resulting in improved use and condition for upland forage, reducing localized impacts and improving riparian conditions. The success of this project directly assists in the preservation of ranches and agricultural lands.

The Sierra Resource Conservation District is excited to partner with the Yosemite/Sequoia Conservation and Development Council and intends on enhancing the project outcome in anyway feasible. This partnership and project will help us improve the land, while providing valuable outcomes to the local Ranchers of the Sierra Nevada. If you should have any questions, please contact me at 559-855-3901 or e-mail sandrits@netptc.net.

Thank you for taking the time to review our support letter. We hope that the Sierra Nevada Conservancy will give this project its full consideration.

Sincerely,

Teryle Sandridge
Director/President Sierra RCD

October 17, 2012

Sierra Nevada Conservancy
11521 Blocker Dr. Ste 205
Auburn, CA 95603

RE: Support for Grant Application – Long Ridge Allotment Range land Improvements Project
To Whom It May Concern:

On behalf of the Sierra Vista National Scenic Byway Association, I want to express full support for the Yosemite/Sequoia Resource Conservation and Developments Council's Long Ridge Allotment Range land Improvements Project. This project is designed to improve livestock distribution by providing off-site livestock water developments resulting in improved use and condition for upland forage, reducing localized impacts and improving riparian conditions. The success of this project directly assists in the preservation of ranches and agricultural lands.

The Sierra Vista National Scenic Byway Association is dedicated to the use and enhancement of the recreational and tourism opportunities in the National Forest. We strongly support all efforts to maintain the natural beauty and longevity of our forests and included environs. Specifically, we are well aware of the need to protect and sustain the fragile forest meadows. We strongly support these efforts.

The Sierra Vista National Scenic Byway Association is excited to partner with the Yosemite/Sequoia Conservation and Development Council and will support the project in anyway feasible. This partnership and project will help us improve the land, while providing valuable outcomes to the local Ranchers of the Sierra Nevada. If you should have any questions, please contact me by e-mail at or phone 559-877-3952.

Thank you for taking the time to review our support letter. We hope that the Sierra Nevada Conservancy will give this project its full consideration.

Sincerely,

Jack McGowan
President: Sierra Vista National Scenic Byway Association

USDA United States Department of Agriculture | Forest Service | Bass Lake Ranger District

57003 Road 225
North Fork, CA 93643
(559) 877-2218
(559) 877-3108 FAX
(800) 735-2929 CA Relay Service

File Code: 1580
Date: October 17, 2012

Sierra Nevada Conservancy
11521 Blocker Dr. Ste 205
Auburn, CA 95603

Re: Long Ridge Allotment Rangeland Improvements Project.

To whom it may concern,

As the District Ranger of the Bass Lake Ranger District (BLRD), I am pleased to support the application of the Yosemite/Sequoia Resource Conservation and Development Council (Y/S RC&DC) for the Long Ridge Allotment Rangeland Improvements Project. The BLRD has worked with the Y/S RC&DC on a variety of projects in the past and is excited to again partner on a project that has direct positive impacts for the ranchers on the Sierra National Forest while reducing localized impacts and improving riparian conditions.

If awarded, a new Memorandum of Agreement between the BLRD and Y/S RC&DC will be developed outlining specific roles and responsibilities of each party ultimately maximizing project effectiveness and efficiency. We have found this team effort to work very well in the past due to the specialists that we have on hand and the different stakeholder groups with whom the Council is affiliated. Projects like these are key to the Sierra National Forest. As restoration funds get harder to come by we are able to utilize funds from such projects to further leverage other like-projects on the forest, keeping conservation and recreation opportunities in mind at all times.

The BLRD fully supports this project and its associated outcomes and we hope that you too will give it serious consideration.

Sincerely,

DAVID W. MARTIN
District Ranger

Three Rivers Sequoia Ranch, LLC

P.O. Box 628

Exeter, CA 93221

October 17, 2012

Sierra Nevada Conservancy

11521 Blocker Dr. Ste 205

Auburn, CA 95603

RE: Support for Grant Application – Long Ridge Allotment Rangeland Improvements Project

To Whom It May Concern:

On behalf of the Three Rivers Sequoia Ranch, I want to express full support for the Yosemite/Sequoia Resource Conservation and Developments Council's Long Ridge Allotment Rangeland Improvements Project. This project is designed to improve livestock distribution within my allotment by providing off-site livestock water developments resulting in improved use and condition for upland forage, reducing localized impacts and improving riparian conditions as well as providing materials for much needed infrastructure to facilitate livestock management. The success of this project directly assists in the preservation of ranches and agricultural lands.

The Three Rivers Sequoia Ranch is excited to partner with the Yosemite/Sequoia Conservation and Development Council and intends on enhancing the project outcome in anyway feasible. This partnership and project will help us improve the land, while providing valuable outcomes to the local ranchers of the Sierra Nevada. If you should have any questions, please contact me at (559) 730-1626.

Thank you for taking the time to review our support letter. We hope that the Sierra Nevada Conservancy will give this project its full consideration.

Sincerely,

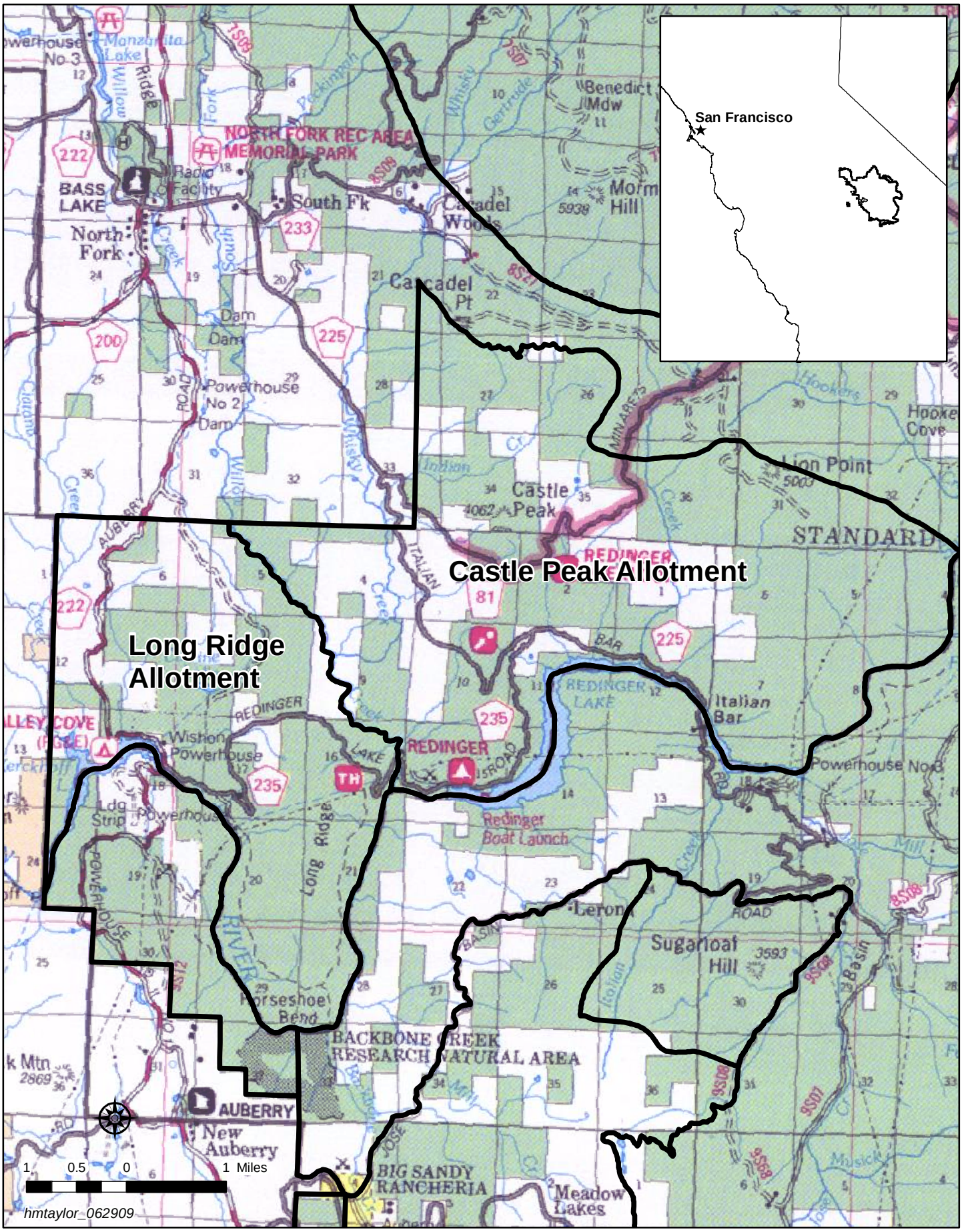
John Vincent Jr.

John Vincent, Jr.

Ranch Manager

Three Rivers Sequoia Ranch, LLC

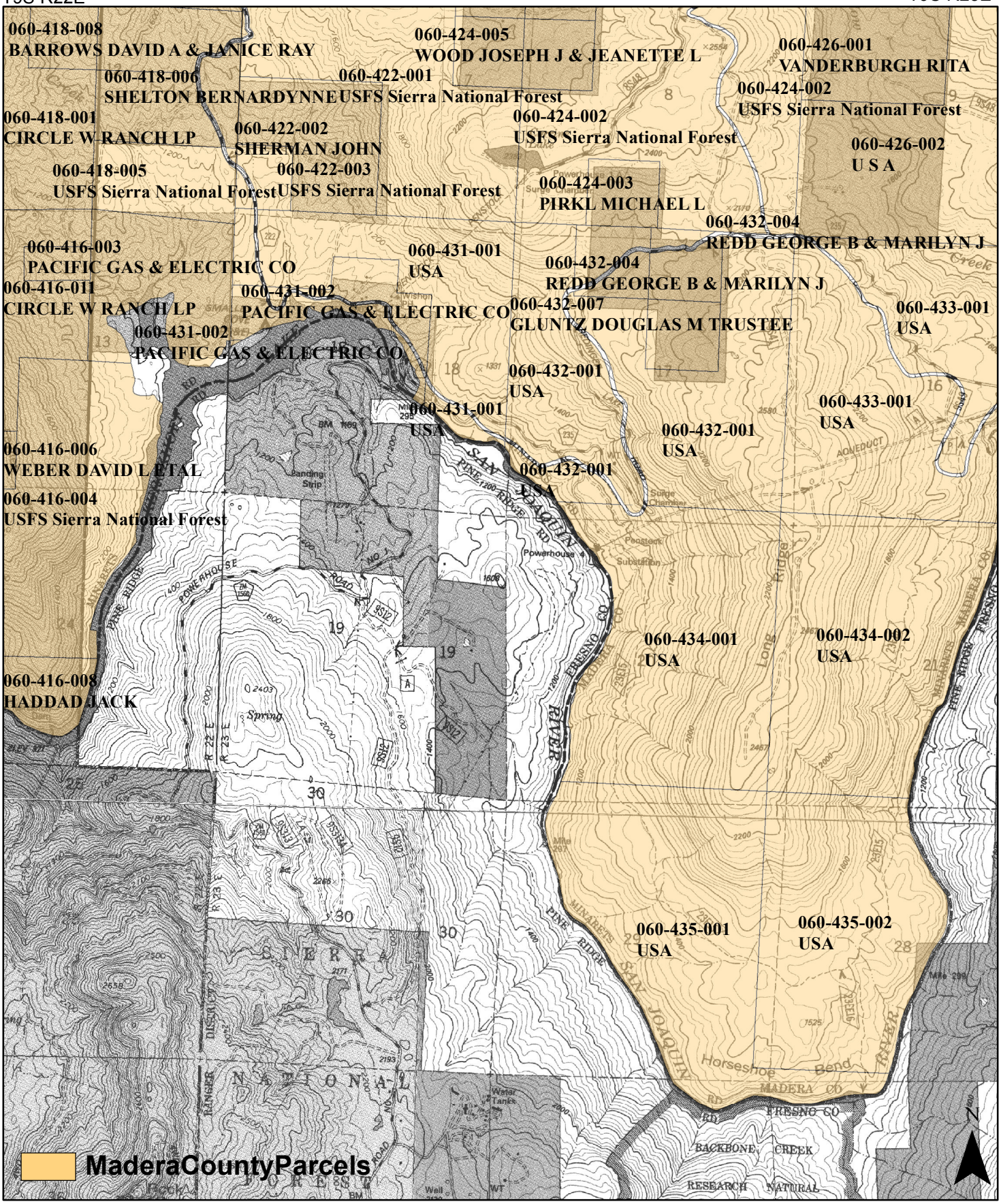
Long Ridge & Castle Peak Allotments
Sierra National Forest



Long Ridge Rangeland Improvements Project

T9S R22E

T9S R23E



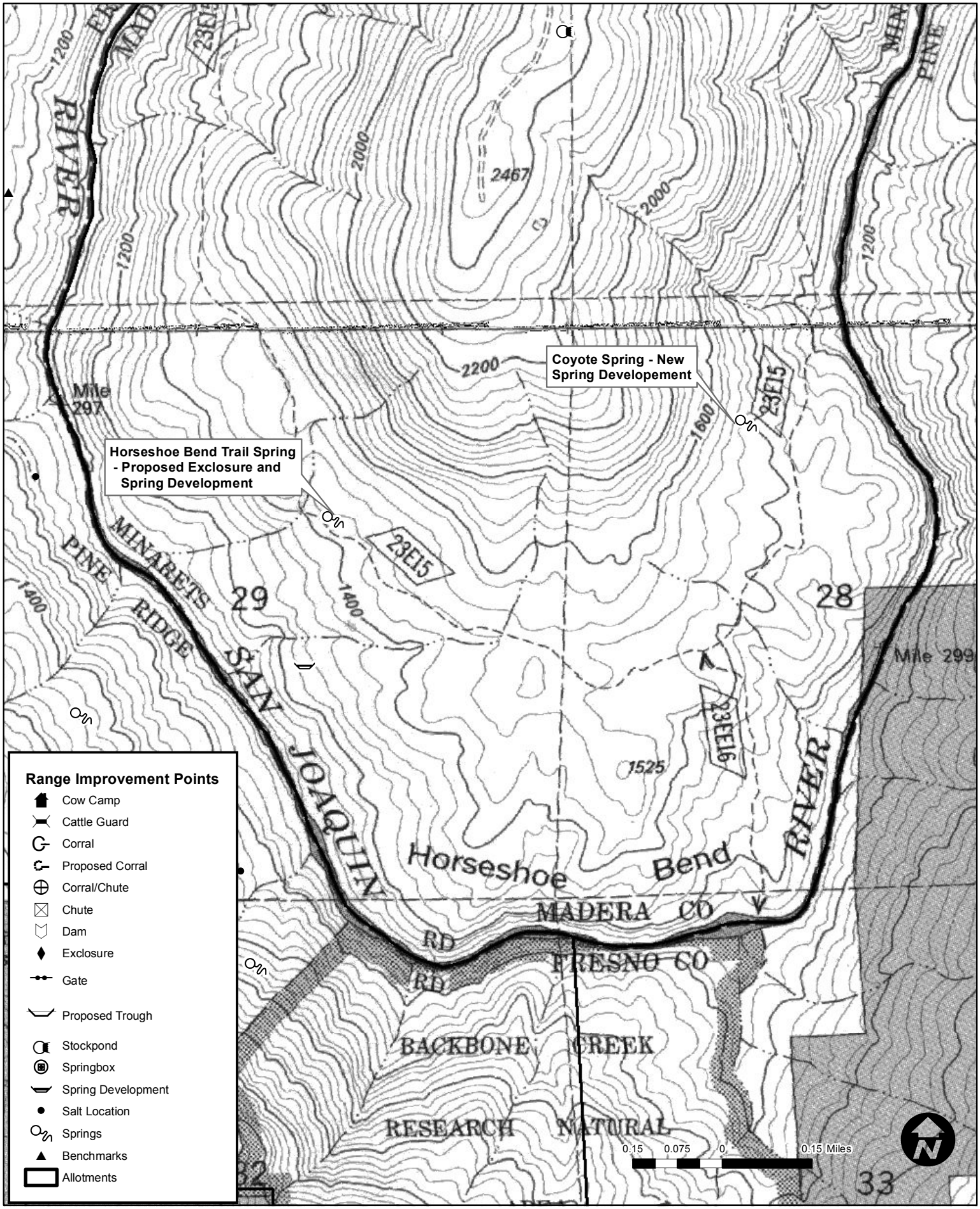
Quads: 3984 Millerton
3973 Auberry
3972 Cascadel Point
3981 North Fork

T.Lowe 10.18.2012

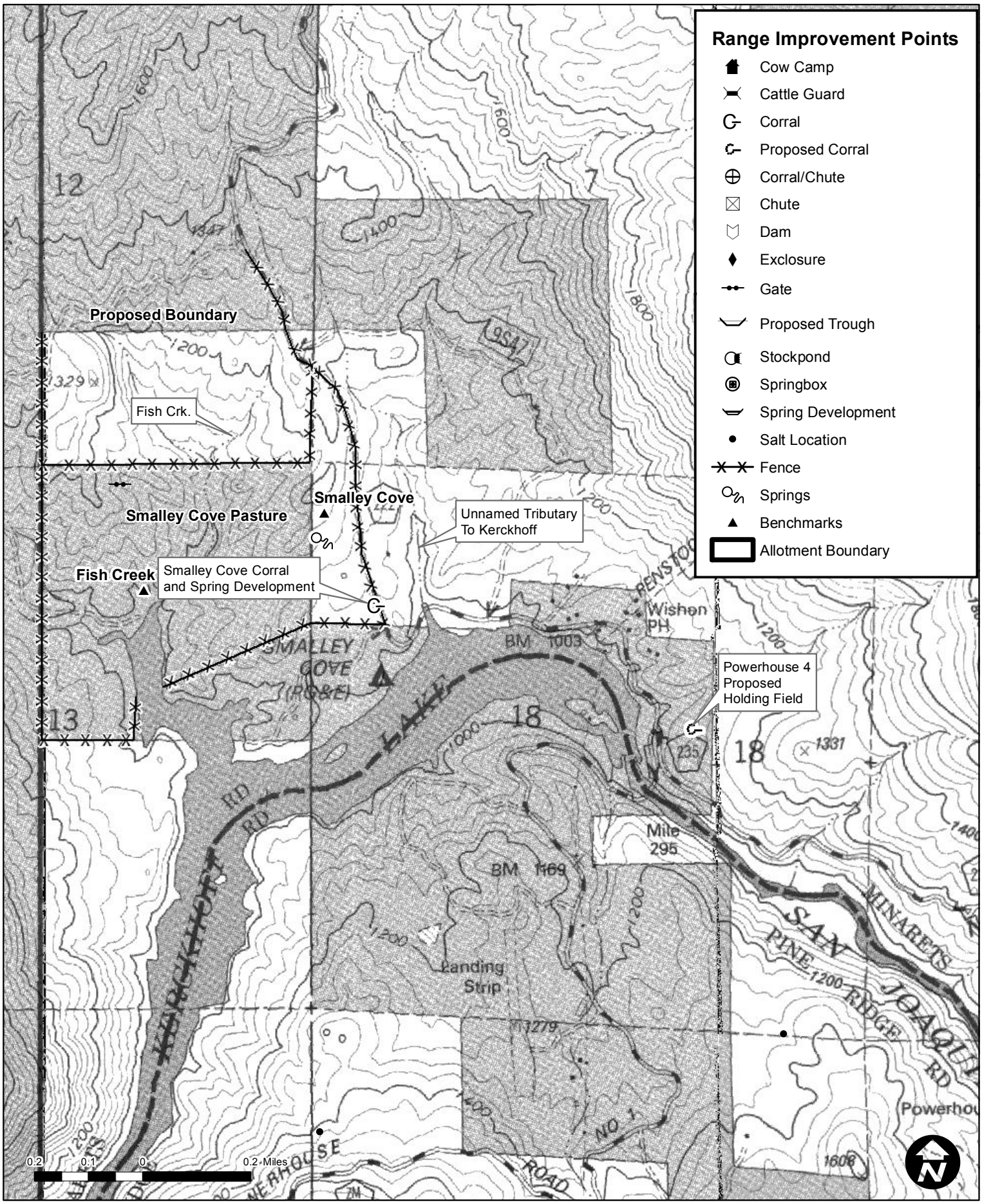
Miles

0 0.3 0.6 1.2

Horseshoe Bend - Long Ridge Allotment



Smalley Cove Pasture & Proposed Powerhouse 4 Corral



Close Up of Existing Condition of Smalley Cove Spring Development (old springbox).

Existing Condition of Smalley Cove Spring Development (shows riparian swale).

Example Photo of Galvanized Steel Trough Installed at Off-Site Livestock Water Development.

Existing condition of Horseshoe Bend Trail Spring.

Livestock Trampling Impacts at Horseshoe Bend Trail Spring.

Overview of Livestock Impacts and Riparian Condition at Horseshoe Bend Trail Spring.

Overview of Riparian Area Below Horseshoe Bend Trail Spring.

Existing Condition of Smalley Cove Corral.

Photo of typical Forest Service pipe corral construction for livestock handling, including livestock sorting pens and loading chute.

Land Tenure: N/A. All data gathering, field work and subsequent restoration would only occur on Federal property, for which the USDA Forest Service has tenure.

Leases or Agreements: N/A. The proposed activity is a planning project. No leases or formal agreements are required to initiate or implement the planning process.