

Sierra Nevada Conservancy - Final Report

**Sierra Nevada Conservancy Grant Program
Safe Drinking Water, Water Quality and Supply, Flood Control
River and Coastal Protection Act of 2008 (Proposition 84)**

Grantee Name: CALIFORNIA RANGELAND TRUST (Rangeland Trust)

Project title: CALIFORNIA RANGELAND TRUST SIERRA NEVADA
RANGELAND ASSESSMENT PROJECT

SNC Reference Number: SNC 070173

Submittal Date: February 27, 2009

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Phone #: 916-444-2096

Check one: 6-Month Progress Report Final Report

A. Final Report Summary:

In March 2008, the Rangeland Trust received grant approval from the Sierra Nevada Conservancy (Conservancy) for the Sierra Nevada Rangeland Assessment Project. The purpose of the Project was to enable the Rangeland Trust to hire a certified rangeland manager to conduct an assessment of the resources on twelve to sixteen working cattle ranches including watersheds, streams, rivers, wildlife habitat, rangeland, cultural, historical, as well as addressing the economic and community issues. The assessments would be used to prioritize these ranches for the purposes of applying for grant funding for the acquisition of conservation easements.

The Rangeland Trust identified a total of eighteen ranches with willing landowners who had active conservation easement applications with the Rangeland Trust and were waiting for funding. The ranches are located within five of the six sub-regions of the Sierra Nevada Conservancy: North Central Sierra, North Sierra, South Central Sierra and South Sierra and range in size from 80 acres to 10,000 acres for a total of approximately 36,000 acres.

The Rangeland Trust hired Ceci Dale-Cesmat, a certified rangeland manager, to conduct field visits, interview landowners and assess the conservation values and goals that are important to the Conservancy.

Based on the rangeland and easement goals that fit into the Conservancy's landscape objectives, the Rangeland Trust and Ms. Dale-Cesmat developed a baseline condition assessment checklist that includes rangeland health assessments referencing ecological site descriptions, proper stream functioning conditions assessments, wildlife habitat

assessments using species occurrences lists, analysis of soil condition and types, watershed condition and function within the ranch, noxious weed inventory, identification of recreational and tourism activities, and identification of cultural and historic resources. The individual ranch assessment reports also include location and topographic maps, aerial photos, color photos, and data documentation.

The attached “Resource Assessment Evaluation Summary and Score Results” provides a summary of the eighteen ranch assessments and the detailed rankings for each of the issues addressed. With fifteen questions addressed and a possible high score of three for each question, a total score of forty-five was possible. The “Conservation Easement Application Resource Assessment Worksheet” and the list of “Assessment Guidelines” that follows details the guidelines of the numeric rankings for each of the fifteen items on the assessment worksheet. Additional evaluation worksheets that were used include the “Rangeland Health Indicator Evaluation Matrix” and the “Standard Checklist for Riparian-Wetland Area”.

The completed rangeland assessment reports scored the ranches taking into account their environmental values and economic benefits to the Sierra Nevada region, thus allowing the Rangeland Trust to select the most strategic working cattle ranches to apply for grant funding for the acquisition of conservation easements.

B. Deliverables or Outcomes completed during this Reporting Period or Milestones Achieved:

The Rangeland Trust originally proposed to examine and prioritize twelve to sixteen ranches within the Sierra Nevada Conservancy region. The development of the assessment model, field assessment visits, completion of the prioritization reports and assessment model analysis, and the preparation of the Conservancy final report and project close-out were scheduled to be completed by February 28, 2009. We were able to complete a total of eighteen ranch assessments within the original Project Schedule and within the original Project Budget.

As a result of the assessment reports and associated rankings, the Rangeland Trust submitted four grant request applications to the Conservancy in September 2008 including SOG2 grant applications to be used for pre-project due diligence funding for two of the four highest ranked ranches and competitive grant applications to be used for partial conservation easement funding for the other two of the four highest ranked ranches. An additional two SOG1 grant applications are being submitted in February 2009.

C. Challenges or Opportunities Encountered:

The Rangeland Trust has been successful in conducting eighteen ranch site visits and assessment reports on schedule. However, assessments were not completed on all of the

ranches initially identified in our application. Subsequent to submission of our application, a few of the landowners expressed a change in circumstances and a reluctance to complete a conservation easement project at this time. Since the goal of the assessment was to prioritize projects for funding, we elected not to conduct an assessment on the projects where the landowners were hesitant to complete a conservation easement on their ranch. We substituted new projects with the result that eighteen rather than the original proposed 12-16 projects were completed.

D. Unanticipated Successes Achieved:

We were pleased that most of the ranch applicants ranked very high in most assessment areas demonstrating that we have many valuable candidates for conservation easements throughout the Sierra Nevada Conservancy region. Additionally, we have found the data gathered as part of the assessment to be a great tool in preparing grant applications for conservation easement funding.

E. Compare Actual Costs to Budgeted Costs:

PROJECT BUDGET CATEGORIES	Budgeted SNC Dollars	Actual Dollars
Assessments	\$41,000.00	\$43,980.00
Preparation of report: Writing & Compiling	2,225.00	1,682.85
Preparation of report: Copy Charges	250.00	0
Grant management	1,250.00	1,565.90
Administrative expenses	6,708.00	5,067.25
Sub-total	\$51,433.00	52,296.00
Less In Kind Services donated by Rangeland Trust	1,933.00	0
Mariposa/Merced Counties Report Credit *		- \$3,000.00
GRAND TOTAL	\$49,500.00	\$49,296.00

* **Explanation:** The original list of ranches included a ranch in Mariposa/Merced Counties. However, after the assessment was completed and the Conservancy had paid the cost, we found that the ranch was just over the county boundary and was located entirely in Merced County, outside of the Conservancy’s boundary. Therefore, the Rangeland Trust is giving a credit to the Conservancy for this report.

F. Were there any other relevant materials produced under the terms of this Agreement that are not a part of the budgeted deliverables? If so, please attach copies.

Attached are the assessment forms and ranking criteria used.

G. Next Steps:

The California Rangeland Trust Sierra Nevada Rangeland Assessment Project is the first stage in a long-term goal to conserve working ranches in the Sierra Nevada. As a result of the Rangeland Assessment Project, we now know which ranches are the most important and strategic to conserve with a conservation easement. The Rangeland Trust will now begin the process of acquiring a conservation easement over the selected ranches.

The first step is to contact the landowners and enter into a written agreement with the landowner setting forth the business terms for the Rangeland Trust to acquire the conservation easement. The landowner is asked to obtain a qualified appraisal of the conservation easement from an appraiser to determine the fair market value of the conservation easement. The Rangeland Trust works with the landowner and the selected appraiser to make certain the appraisal meets the requirements of the particular funding entity. Once the fair market value is determined, the Rangeland Trust will apply for acquisition funding from the Sierra Nevada Conservancy as well as the Wildlife Conservation Board, the Department of Conservation, the Department of Water Resources and any other appropriate state and federal agency. The Rangeland Trust leverages public money with private resources whenever possible.

The Rangeland Trust will conduct its due diligence of the ranch and review title during the period the funding agencies are completing their appraisal review. The terms of the conservation easement are negotiated with the landowner, using either the standard form of the Rangeland Trust or the standard agreement of a particular funding entity if applicable. Once the acquisition is approved at any public meeting required by the funding agency, such as the Sierra Nevada Conservancy or the Wildlife Conservation Board, the Rangeland Trust enters into a grant agreement with the funders and the request for funds is made. Closing on the acquisition of the conservation easement is completed through an escrow with a title insurance company.

Following recordation of the conservation easement, the Rangeland Trust sets up its monitoring program for its annual compliance monitoring of the conservation easement. The monitoring will begin in the year following the closing.

H. Resources Leveraged:

The results of the assessment played a role in securing financial support from the Sierra Business Council for two high ranking conservation easement projects.

I. Capacity-Building Results and Collaboration and Cooperation with Stakeholders:

Collaboration with others on data collection included the following: NRCS for soils data; DFG state and local biologists for habitat information; local irrigation districts; local Conservancy representatives; and local land trusts working with the Conservancy.

The results of this rangeland assessment greatly improved the Rangeland Trust's capability to match conservation easement applicants with potential funding sources.

The Rangeland Trust is in continuing discussions with the Sierra Business Council, the Northern Sierra Partnership, the Trust for Public Land, the Nature Conservancy, Feather River Land Trust and the Pacific Forest Trust on how we can collaborate on the future conservation easement projects that were included in this Rangeland Assessment Project.

J. Description of Project Accomplishments:

1. How did the Project succeed in accomplishing its intent?

The Rangeland Assessment Project successfully assessed the natural, cultural, historical, and economical resources of eighteen ranches within the Conservancy region resulting in the prioritization of these ranches for the purpose of applying for grant funding for the acquisition of conservation easements.

2. Describe any follow-on or indirect benefits resulting from the Project.

As a result of this project, the Rangeland Trust learned the benefits of assessing the varied conservation values inherent in our pending conservation easement projects. The rangeland assessment and ranking of candidate ranches provide the Rangeland Trust with an equitable manner in which to prioritize our pending projects. The reports also provide a wide range of information to assist us with determining appropriate funding sources as well as aiding in the preparation of grant applications.

3. Describe any significant experiences, unanticipated results or noteworthy events that create a "wow" factor.

The real "wow" factor that emerged from the rangeland assessment project was the documentation of all the wonderful attributes of our candidate ranches as well as the sincere devotion of the ranch owners to preserving their working landscapes and all the attributes they contain. The process also engaged the landowners in the process of achieving a mutual goal of conserving the ranch.

4. Describe any Lessons Learned.

As much as conducting this project provided many benefits, the Rangeland Trust learned that conducting the Rangeland Assessments on eighteen cattle ranches has raised the expectations of the ranch owners. Unfortunately, the Rangeland Trust can only assist them with reaching their conservation easement goal as quickly as funding sources are available.

5. How do you intend to share the results of your work on this project?

Since the Rangeland Assessment Reports are confidential, the results are being used by the Rangeland Trust to prioritize the projects for funding. However, we are sharing with prospective funding agencies, such as the Conservancy, that the applicant ranch had been assessed through this process and where they ranked overall.

K. SNC-approved Performance Measures:

No formal "Performance Measures" were identified in our Grant Agreement with the Conservancy; however, the following are the outcomes of this project:

As a direct result of the rangeland assessment rankings and the resource values that were identified as part of the Project, the Rangeland Trust has submitted four grant applications for either due diligence funding or partial conservation easement funding to the Conservancy. These four ranches ranked high amongst the top five ranked properties. The Rangeland Trust has plans to submit an additional two applications for partial conservation easement funding to the Conservancy in February 2009. Additionally, the Rangeland Trust submitted a conservation easement application for partial funding to the Bureau of Reclamation as a direct result of the findings compiled in the Rangeland Assessment Reports.

Attachments

**“Resource Assessment Evaluation Summary
And Score Results as of January 2009”**

**“Conservation Easement Application Resource Assessment
Worksheet”**

“Assessment Guidelines”

“Rangeland Health Indicator Evaluation Matrix”

“Standard Checklist for Riparian-Wetland Area”

RANCH PROJECT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
ACREAGE	560	330	7,000	673	743	771	10,000	3,200	6,124	2,959	550	317	140	348	80	582	580	800	
WATERSHED	North Fork Feather River	South Fork American River	Feather River	Middle Fork Feather River	Middle Fork Feather River	Middle Fork Feather River	Pit River	Kaweah River	Upper Tuolumne	Upper Tuolumne/Upper Stanislaus	Middle Kern River	Middle Feather River	Middle Feather River	Middle Feather River	Middle Feather River	Susan River	Merced River	Kern River	
SNC SUB-REGION	North Central Sierra	Central Sierra	North Central Sierra	North Central Sierra	North Central Sierra	North Central Sierra	North Sierra	South Central Sierra	South Central Sierra	South Central Sierra	South Sierra	North Central Sierra	North Central Sierra	North Central Sierra	North Central Sierra	North Sierra	South Central Sierra	South Sierra	
COUNTY	Plumas	El Dorado	Plumas	Sierra	Sierra	Sierra	Modoc/Lassen	Tulare	Tuolumne	Tuolumne	Kern	Sierra	Plumas	Sierra	Sierra	Lassen	Mariposa	Kern	
Resource Issues Addressed:																			
1. Is the conservation easement within an impaired watershed?	3	3	3	2	3	2	3	1	2	2	1	2	2	2	2	2	2	2	1
2. Does the ranch include a perennial stream?	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	3	3	3
3. Has a Proper Functioning Condition Assessment been completed on all streams, rivers, wetlands, lakes & springs on the ranch?	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3
4. Has a Rangeland Health Assessment been completed on the ranch?	3	2	3	3	3	3	2	3	3	2	2	3	3	3	3	3	2	2	2
5. Does the ranch include habitat for and management of threatened, endangered or at-risk species?	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2	1	3	3
6. Does the ranch management practices result in little soil erosion & sedimentation from agricultural lands?	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2
7. Does the ranch include noxious weeds identified by California Department of Food & Agriculture?	3	2	3	3	3	3	2	3	2	2	3	3	2	3	3	3	2	2	3
8. Does the property border other protected land?	2	3	3	3	3	3	3	2	3	3	3	3	2	3	3	2	3	3	3
Cultural/Historic Issues Addressed:																			
1. Does the ranch include significant cultural or historic resources?	3	3	3	3	2	2	2	2	3	3	3	2	3	2	1	2	3	2	2
2. Does the ranch include significant prehistoric features?	3	2	3	2	3	2	3	2	2	3	3	2	2	2	2	1	2	1	1
3. Is the landowner involved with local tribal or historic societies to promote educational opportunities on the land?	3	3	1	3	2	3	1	1	3	3	3	2	1	1	1	1	1	1	1
Economic/Community Issues Addressed:																			
1. Is the ranch at risk of conversion from agriculture due to urban encroachment?	2	3	3	3	2	3	2	3	2	2	3	2	2	2	3	3	3	3	3
2. Is the ranch in a location where other agencies or organizations might be interested in partnerships for easement acquisition or restoration?	2	3	3	3	3	3	2	2	2	2	2	3	3	3	3	3	2	2	2
3. Does the ranch include a diversity of farming operations that contribute to the economic stability of the local community?	3	3	2	2	1	2	2	3	1	1	1	1	2	1	2	2	2	2	1
4. Does the ranch include other economic enterprises i.e. agricultural tourism, hunting, bird watching that contribute to the local economy?	3	3	2	2	3	1	3	3	2	3	2	1	1	1	2	1	1	1	1
FINAL ASSESSMENT SCORE:	42	42	41	41	40	39	37	37	37	37	37	36	35	35	35	32	31	31	31

California Rangeland Trust
 1221 H Street
 Sacramento, CA 95814
 Phone: (916) 444-2096
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SNC Application Reference #070173

Conservation Easement Application
 Resource Assessment Worksheet

Date:	Ranch Number:
Watershed:	Applicant:
SNC Sub-region:	Address:
County:	Telephone:
Final Assessment Score:	Fax:

Resource Issues Addressed:

Issue	Response/ Results	Numeric Rating		
		1	2	3
1. Is the conservation easement within an impaired watershed?				
2. Does the ranch include a perennial stream?				
3. Has a Proper Functioning Condition Assessment been completed on all streams, rivers, wetlands, lakes and springs on the ranch?*				
4. Has a Rangeland Health Assessment been completed on the ranch?***				
5. Does the ranch include habitat for and management of threatened, endangered or at-risk species?				
6. Does the ranch management practices result in little soil erosion and sedimentation from agricultural lands?				
7. Does the ranch include noxious weeds identified by California Department of Food & Agriculture?				
8. Does the property border other protected land?				

Cultural/Historic Issues Addressed:

Issue	Response/ Results	Numeric Rating		
		1	2	3
1. Does the ranch include significant cultural or historic resources?				
2. Does the ranch include significant prehistoric features?				
3. Is the landowner involved with local tribal or historic societies to promote educational opportunities on the land?				

Economic/Community Issues Addressed:

Issue	Response/ Results	Numeric Rating		
		1	2	3
1. Is the ranch at risk of conversion from agriculture due to urban encroachment?				
2. Is the ranch in a location where other agencies or organizations might be interested in partnerships for easement acquisition or restoration? ***				
3. Does the ranch include a diversity of farming operations that contribute to the economic stability of the local community?				
4. Does the ranch include other economic enterprises i.e. agricultural tourism, hunting, bird watching that contribute to the local economy?				

* Attach completed Rangeland Health Assessment Worksheet

** Attach completed Proper Functioning Condition Assessment Worksheet

*** Attach a letter of support from the local DFG Biologist

The report for each ranch will include:

- The Assessment Worksheet
- Rangeland Health Assessment Worksheet
- Wildlife Habitat Assessment Worksheet
- Proper Functioning Condition Worksheet
- Support Letter from Department of Fish & Game Biologist
- Minimum of 6 color photos of the ranch
- Aerial photo showing ranch boundary
- Topographic map of the ranch
- Location Map of the ranch showing proximity to the SNC Area.

ASSESSMENT GUIDELINES:

ASSESSMENT GUIDELINES:

Numeric ranking will assess which ranches score highest for possible conservation easement funding. The following guidelines will be used to obtain a numeric ranking on each of the 15 items in the assessment worksheet.

Resource Issues:

1. Is the conservation easement within an impaired watershed?
 - 1 = No it is not within an impaired watershed
 - 2 = Yes it is within one impaired watershed
 - 3 = Yes it is within an impaired watershed with TMDL's established

2. Does the ranch include a perennial stream?
 - 1 = No, only ephemeral streams
 - 2 = Intermittent streams only
 - 3 = Perennial streams present

3. Has a Proper Functioning Condition Assessment been completed (on perennial streams)?
 - 1 = Non-functioning score on PFC worksheet
 - 2 = Functioning at risk on PFC worksheet
 - 3 = Proper Functioning Score on PFC worksheet

4. Has a Rangeland Health Assessment been completed?
 - 1 = Extreme departure from Ecological Site Description
 - 2 = Moderate departure from Ecological Site Description
 - 3 = Slight to no departure from Ecological Site Description

5. Does the ranch provide habitat for and management of a diversity of wildlife, including but not limited to threatened, endangered or species at risk?
 - 1 = The ranch includes habitat for one threatened, endangered or at risk species and/or includes one habitat type.
 - 2 = The ranch includes habitat for 2-3 threatened, endangered or at risk species and/or 2-3 habitat types.
 - 3 = The ranch includes habitat for 3+ threatened, endangered or at risk species and/or 3+ habitat types.

6. Does the ranch management practices result in little soil erosion and sedimentation from agricultural lands?
 - 1 = Active erosion occurring in two or more locations on the ranch
 - 2 = Moderate erosion occurring in less than two locations on the ranch
 - 3 = Little to no observable erosion occurring on the ranch

7. Does the ranch include noxious weed identified by California Department of Food & Ag.
 - 1 = Two or more noxious weeds present in numbers high enough to be shown as "Extremely High to High or Abundant" on question 16 of the Rangeland Indicators Worksheet.
 - 2 = Noxious weeds in the category "Moderate to Common" on question 16 of the Rangeland Indicators Worksheet.
 - 3 = Noxious weeds in the category "Slight to low or None" on question 16 of the Rangeland Indicators Worksheet.

8. Does the property border other protected land?
 - 1 = No protected land within 5 miles of the ranch
 - 2 = Protected land is within 1-4 miles of the ranch
 - 3 = Protected lands border the ranch

Cultural Resources:

9. Does the ranch include significant cultural or historic resources?
1 = None present
2 = Present but not recorded
3 = Present and recorded with the SHPO (State Historic Preservation Office) or other local historic society.
10. Does the ranch include significant prehistoric features?
1 = None present
2 = Present but only known by landowner
3 = Present and known and/or used by local tribal groups
11. Is the landowner involved with local tribal or historic societies to promote educational opportunities?
1 = Not involved
2 = Slight to moderate involvement
3 = High involvement with field trips by local/state or regional groups

Economic/Community Issues Addressed:

12. Is the ranch at risk of conversion from agriculture due to urban encroachment?
1 = No risk
2 = Moderate risk with development within 5 miles of the ranch
3 = High risk with development pressure adjacent to or within 1 mile of the ranch
13. Is the ranch in a location where other agencies or organizations might be interested in partnerships for easement acquisition or restoration?
1 = No interest
2 = Moderate interest from other groups, but no matching funds
3 = High interest with matching funds available or possible
14. Does the ranch include a diversity of farming operations that contribute to the economic stability of the local community?
1 = One agriculture operation on the ranch
2 = Two to three agriculture operations on the ranch
3 = Three or more agriculture operations on the ranch
15. Does the ranch include other economic enterprises that contribute to the local economy?
1 = No other economic enterprises other than agricultural production
2 = The ranch includes at least one additional enterprise on the ranch
3 = The ranch includes two or more additional enterprises on the ranch

Appendix 6. Rangeland Health Indicator Evaluation Matrix

State _____ Office _____ Ecological Site _____ Site ID _____

If indicator(s) revised: Observers _____ Date _____

Indicator	Departure from Ecological Site Description/Ecological Reference Area(s)				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
1. Rills (Default description)	Rill formation is severe and well defined throughout most of the area.	Rill formation is moderately active and well defined throughout most of the area.	Active rill formation is slight at infrequent intervals; mostly in exposed areas.	No recent formation of rills; old rills have blunted or muted features.	Current or past formation of rills as expected for the site.
1. Rills (Revised description)					
2. Water Flow Patterns (Default description)	Extensive and numerous; unstable with active erosion; usually connected.	More numerous than expected; deposition and cut areas common; occasionally connected.	Nearly matches what is expected for the site; erosion is minor with some instability and deposition.	Matches what is expected for the site; some evidence of minor erosion. Flow patterns are stable and short.	Matches what is expected for the site; minimal evidence of past or current soil deposition or erosion.
2. Water Flow Patterns (Revised description)					
3. Pedestals and/or Terracettes (Default description)	Abundant active pedestaling and numerous terracettes. Many rocks and plants are pedestaled; exposed plant roots are common.	Moderate active pedestaling; terracettes common. Some rocks and plants are pedestaled with occasional exposed roots.	Slight active pedestaling; most pedestals are in flow paths and interspaces and/or on exposed slopes. Occasional terracettes present.	Active pedestaling or terracette formation is rare; some evidence of past pedestal formation, especially in water flow patterns on exposed slopes.	Current or past evidence of pedestaled plants or rocks as expected. Terracettes absent or uncommon.
3. Pedestals and/or Terracettes (Revised description)					

Departure from Ecological Site Description/Ecological Reference Area(s)					
Indicator	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
4. Bare Ground (Default description)	Much higher than expected for the site. Bare areas are large and generally connected.	Moderate to much higher than expected for the site. Bare areas are large and occasionally connected.	Moderately higher than expected for the site. Bare areas are of moderate size and sporadically connected.	Slightly to moderately higher than expected for the site. Bare areas are small and rarely connected.	Amount and size of bare areas nearly to totally matches that expected for the site.
4. Bare Ground (Revised description)					
5. Gullies (Default description)	Common with indications of active erosion and downcutting; vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active.	Present with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts are active; downcutting is not apparent.	Moderate in number with indications of active erosion; vegetation is intermittent on slopes and/or bed. Occasional headcuts may be present.	Uncommon, vegetation is stabilizing the bed and slopes; no signs of active headcuts, nickpoints, or bed erosion.	Drainages are represented as natural stable channels; no signs of erosion with vegetation common.
5. Gullies (Revised description)					
6. Wind Scoured, Blowout and/or Depositional Areas (Default description)	Extensive	Common.	Occasionally present.	Infrequent and few	Matches what is expected for the site.
6. Wind Scoured, Blowout and/or Depositional Areas (Revised description)					

Departure from Ecological Site Description/Ecological Reference Area(s)					
Indicator	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
7. Litter Movement (wind or water)(Default description)	Extreme; concentrated around obstructions. Most size classes of litter have been displaced.	Moderate to extreme; loosely concentrated near obstructions. Moderate to small size classes of litter have been displaced.	Moderate movement of smaller size classes in scattered concentrations around obstructions and in depressions.	Slightly to moderately more than expected for the site with only small size classes of litter being displaced.	Matches that expected for the site with a fairly uniform distribution of litter.
7. Litter Movement (wind or water)(Revised description)					
8. Soil Surface Resistance to Erosion (Default description)	Extremely reduced throughout the site. Biological stabilization agents including organic matter and biological crusts virtually absent.	Significantly reduced in most plant canopy interspaces and moderately reduced beneath plant canopies. Stabilizing agents present only in isolated patches.	Significantly reduced in at least half of the plant canopy interspaces, or moderately reduced throughout the site.	Some reduction in soil surface stability in plant interspaces or slight reduction throughout the site. Stabilizing agents reduced below expected.	Matches that expected for the site. Surface soil is stabilized by organic matter decomposition products and/or a biological crust.
8. Soil Surface Resistance to Erosion (Revised description)					
9. Soil Surface Loss or Degradation (Default description)	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded, than that in subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation severe throughout site. Minimal differences in soil organic matter content and structure of surface and subsurface layers.	Moderate soil loss or degradation in plant interspaces with some degradation beneath plant canopies. Soil structure is degraded and soil organic matter content is significantly reduced.	Some soil loss has occurred and/or soil structure shows signs of degradation, especially in plant interspaces.	Soil surface horizon intact. Soil structure and organic matter content match that expected for site.
9. Soil Surface Loss (especially in plant interspaces (Revised description)					

Departure from Ecological Site Description/Ecological Reference Area(s)					
Indicator	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
10. Plant Community Composition & Distribution Relative to Infiltration & Runoff (Default description)	Infiltration is severely decreased due to adverse changes in plant community composition and/or distribution. Adverse plant cover changes have occurred.	Infiltration is greatly decreased due to adverse changes in plant community composition and/or distribution. Detrimental plant cover changes have occurred.	Infiltration is moderately reduced due to adverse changes in plant community composition and/or distribution. Plant cover changes negatively affect infiltration.	Infiltration is slightly to moderately affected by minor changes in plant community composition and/or distribution. Plant cover changes have only a minor effect on infiltration.	Infiltration and runoff are equal to that expected for the site. Plant cover (distribution and amount) adequate for site protection.
10. Plant Community Composition & Distribution Relative to Infiltration & Runoff (Revised description)					
11. Compaction Layer (below soil surface)(Default description)	Extensive; severely restricts water movement and root penetration.	Widespread; greatly restricts water movement and root penetration.	Moderately widespread, moderately restricts water movement and root penetration.	Rarely present or is thin and weakly restrictive to water movement and root penetration.	None to minimal, not restrictive to water movement and root penetration.
11. Compaction Layer (below soil surface) (Revised description)					
12. Functional/ Structural Groups (F/S Groups) (Default description See Functional/ Structural Groups Worksheet	Number of F/S groups greatly reduced, AND/OR Relative dominance of F/S groups has been dramatically altered. AND/OR Number of species within F/S groups dramatically reduced.	Number of F/S groups reduced AND/OR One dominant group and/or one or more sub-dominant group replaced by F/S groups not expected for the site AND/OR Number of species within F/S groups significantly reduced.	Number of F/S groups moderately reduced. AND/OR One or more sub-dominant F/S groups replaced by F/S groups not expected for the site. AND/OR Number of species within F/S groups moderately reduced.	Number of F/S groups slightly reduced. AND/OR Relative dominance of F/S groups has been modified from that expected for the site. AND/OR number of species within F/S slightly reduced.	F/S groups and number of species in each group closely match that expected for the site.
12. Functional/ Structural Groups (F/S Groups)(Revised description)					

	Departure from Ecological Site Description/Ecological Reference Area(s)				
Indicator	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
13. Plant Mortality/Decadence (Default Description)	Dead and/or decadent plants are common.	Dead plants and/or decadent plants are somewhat common.	Some dead and/or decadent plants are present.	Slight plant mortality and/or decadence.	Plant mortality and decadence matches that expected for the site.
13. Plant Mortality/Decadence (Revised description)					
14. Litter Amount (Default description)	Largely absent or dominant relative to site potential and weather.	Greatly reduced or increased relative to site potential and weather.	Moderately more or less relative to site potential and weather.	Slightly more or less relative to site potential and weather.	Amount is what is expected for the site potential and weather.
14. Litter Amount (Revised description)					
15. Annual Production (Default description)	Less than 20% of potential production.	20-40% of potential production.	40-60% of potential production.	60-80% of potential production.	Exceeds 80% of potential production.
15. Annual Production (Revised description)					
16. Invasive Plants (Default description)	Dominate the site.	Common throughout the site.	Scattered throughout the site.	Present primarily in disturbed areas.	Rarely present on the site.
16. Invasive Plants (Revised description)					
17. Reproductive Capability of Perennial Plants (native or seeded)(Default description)	Capability to produce seed or vegetative tillers is severely reduced relative to recent climatic conditions	Capability to produce seed or vegetative tillers is greatly reduced relative to recent climatic conditions	Capability to produce seed or vegetative tillers is somewhat limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is only slightly limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is not limited relative to recent climatic conditions
17. Reproductive Capability of Perennial Plants (native or seeded)(Revised description)					

Standard Checklist

Name of Riparian-Wetland Area: _____

Date: _____ Segment/Reach ID: _____

Miles: _____ Acres: _____

ID Team Observers: _____

Yes	No	N/A	HYDROLOGY
			1) Floodplain above bankfull is inundated in "relatively frequent" events
			2) Where beaver dams are present they are active and stable
			3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)
			4) Riparian-wetland area is widening or has achieved potential extent
			5) Upland watershed is not contributing to riparian-wetland degradation

Yes	No	N/A	VEGETATION
			6) There is diverse age-class distribution of riparian-wetland vegetation (recruitment for maintenance/recovery)
			7) There is diverse composition of riparian-wetland vegetation (for maintenance/recovery)
			8) Species present indicate maintenance of riparian-wetland soil moisture characteristics
			9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high-streamflow events
			10) Riparian-wetland plants exhibit high vigor
			11) Adequate riparian-wetland vegetative cover is present to protect banks and dissipate energy during high flows
			12) Plant communities are an adequate source of coarse and/or large woody material (for maintenance/recovery)

Yes	No	N/A	EROSION/DEPOSITION
			13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy
			14) Point bars are revegetating with riparian-wetland vegetation
			15) Lateral stream movement is associated with natural sinuosity
			16) System is vertically stable
			17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

(Revised 1998)

