5. Narrative Descriptions *(EFN: 725_Narrative.docx)*

Ash Valley Ranch Native Grassland Restoration

a. Detailed Project Description

Project Purpose including Goals/Results, Scope of Work, Location, Purpose

The goals/results of project are to use SNC funds to restore a portion of 5,400 acres of native grassland to improve habitat and hydrologic function in our CEQA/NEPA cleared project area. The implementation of the project work on public and private lands will support the long-term ecological values and economic viability of Ash Valley Ranch and the health of its watershed. 1,100 acres have been completed to date. Other partners are being sought to provide the remaining funds and SNC participation is seen as critical in that effort.

The scope of work includes the biomass utilization/removal of invasive western juniper *(Juniperus occidentalis),* construction of a fence so that adaptive range management grazing prescriptions can be implemented to enhance and sustain restoration efforts, and the continued monitoring of vegetation and hydrology.

Project location is the southern uplands of Ash Valley, Lassen County, California

The Project's purpose is the restoration of ecological function to the landscape that will result in overall improvements to the environmental, economic, and social wellbeing of the area.

Project Summary

The proposed project is located on the Ash Valley Ranch, a cattle operation in Adin, CA and includes both private land and public land managed by Bureau of Land Management (BLM) – Alturas Field Office Lassen County California (*See* Figure 1). The Ash Valley Ranch and adjacent BLM grazing lands are a prime example of juniper invasion, forest overstocking, and accompanying environmental degradation. The project goal is to complete the restoration on 5,500 acres of degraded native grassland/rangeland to its historic ecological site condition. Restoration of ecological function to the landscape will benefit ranching and result in overall improvements to the environmental, economic, and social wellbeing of the area.

Proposed western juniper removal treatments are needed because juniper invasion has negatively impacted native plant communities that managed livestock and native wildlife utilize. Furthermore, juniper invasion has degraded hydrologic functions in watersheds where it is widespread. Fire suppression and early rangeland management practices have resulted in the rapid expansion of western juniper over the past 150 years. In Ash Valley juniper is encroaching on montane wet meadows and the sagebrush-steppe ecosystems is on the verge of type conversion. Juniper invasion ultimately results in a climax plant community dominated by juniper where virtually all other forbs and forage

disappear and springs and seeps dry up, culminating in severe economic losses for livestock producers.

Overly dense juniper and eastside pine stands in the project area have also created fuel loads that increase the risk for high-intensity wildfire around private property, as identified in the Lassen County Community Wildfire Protection Plan (Lassen County Fire Safe Council, Inc., 2012). The California Department of Forestry and Fire Protection identified locations within the project area where the abundance of fuels and environmental conditions (topography, vegetation, and climate) are ripe for catastrophic fire. Catastrophic fires, generally referred to as stand-replacement fires, are problematic for watersheds as they cause severe erosion due to loss of vegetation, sediment loading in rivers and streams, reduced retention of water in the upper watershed, poor air quality, loss of forage and rangeland, loss of timber, and loss of wildlife habitat.

The proposed project has three components: the biomass utilization/removal of western juniper, implementation of an adaptive grazing management and fencing plan, and, the continuation of vegetative and hydrological monitoring that has been conducted in the project area for the past three years. The three components and their associated outcomes are described below.

Juniper removal prescriptions will use rubber tire and track mounted shears to cut the juniper. Rubber tire skidders are also used, but unlike traditional forestry operations, operators are directed not to make skid trails, but instead, skid the material over the entire landscape. This results in moderate impact over any remnants of the native plant community and very minor soil disturbance. The skidders haul the sheared material to a huge chipper that is modified to process juniper, a challenge for most chipping equipment.

Following removal, most of the material will be chipped and hauled to an electrical power producing facility to be used as fuel. After the mechanical treatments are completed hand crews will remove juniper that was not able to be cut mechanically. Approximately one wildlife brush pile per 1-5 acres may be constructed to help mitigate wildlife cover removal.

By removing or reducing stands of juniper, the following objectives will be achieved:

- Restoration and enhancement of native grassland and shrub communities that cattle and wildlife are dependent on
- Restoration and enhancement of montane wet meadow habitat and associated hydrologic function
- Restored range productivity
- Improved ranching viability and preservation of agricultural landscapes
- Improved water quality and quantity of streams and springs
- Reduction of potential soil erosion
- Improved wildlife habitat conditions for pronghorn antelope, mule deer, raptors,

and many other sagebrush obligate species

- Improved habitat conditions and habitat connectivity for sage grouse
- Improved forest health
- Reduced risk of high-intensity, stand-replacing wildfire

Adaptive grazing prescriptions will be developed that will enhance post-treatment restoration. This will include the development of pastures through the implementation of fencing and grazing plans that will allow for the rotation of livestock throughout the Ranch and rest for areas that have recently received juniper treatments. NEPA Compliance for fencing on BLM lands has been completed by the Alturas Field Office (*See:* EFN 725_NEPA.pdf)

By implementing the fencing and grazing management plan the following objective will be achieved:

- Enhancement and the sustainment of native grassland restoration

CSSRI has already begun collecting data to assess soil moisture, ground water availability, and vegetative response following western juniper removal. Two monitoring sites have been established in proposed control and treatment plots within the project area to collect soil moisture and groundwater availability data. Three livestock and wildlife exclosure cages have been set up at each soil moisture location to monitor vegetative productivity and three line transects have been established at each site to monitor changes in vegetation. This pre-implementation monitoring project has already resulted in two years of pre-treatment monitoring data which will allow us to quantify the effects of juniper removal on soil moisture and groundwater availability. A detailed description of the monitoring protocol can be found in section 6.e. Long-Term Management and Sustainability.

By continuing vegetative and hydrological monitoring the following objectives will be achieved:

- Quantification of the effects of juniper removal on plant community richness, diversity, and productivity
- Quantification of the effects of juniper removal on soil moisture and ground water availability

Environmental Setting and Impacts

The project is located on the Ash Valley Ranch, a cattle ranching operation in Lassen County near Adin, California that encompasses both private land and public land administered by the BLM. The project is located between Ash Valley to the north, the Madeline Plains to the east, Hwy 139 to the west and Grasshopper Valley to the south.

The Ash Valley Ranch project area encompasses five different watersheds: Knox Flat; Holbrook; Slate Creek; Periphery Madeline Plains; and Madeline Plains. The majority of

the project area is within the Holbrook and Knox Flat watersheds which are part of the Pit River hydrologic unit flowing west toward the Central Valley Region of California. The major perennial drainage within the Holbrook and Knox Flat watersheds is Ash Creek. Several ephemeral tributaries to Ash Creek are present within the project area including tributaries flowing from Spooner Reservoir, and Spooner Trough. The project area ranges in elevation from 5,400 to 5,900 ft. The mean annual precipitation is approximately 15-18 inches and the mean annual temperature is about 48 degrees F.

Soils within Ash Valley are very deep, well drained soils that formed in alluvium weathered from metamorphic and igneous rock sources. The USDA NRCS Soil Survey has delineated 32 soil types occurring on the project area. Some silty clay soils are present in wetter valley areas in the Madeline Plains and Ash Valley. In other areas the soil texture is predominantly loam, from sandy to very stony, that supports a variety of ecological sites, twelve in all, the majority of which are suitable for livestock management.

The ecological site is a product of all the environmental factors responsible for its development including soils, topography, climate and fire. An ecological site is recognized and described based on its ability to produce and support a particular plant community. Juniper invasion has occurred extensively on all ecological site types in Ash Valley, The predominance of juniper and overcrowded pine stands in the project area indicates that the landscape has departed significantly from its potential ecological site types, and therefore, is not currently in a properly functioning ecological condition.

Upland plant communities within the project area include Sagebrush Steppe, Western Juniper Woodland, Montane Chaparral and Aspen. Montane Wet Meadow vegetation is associated with the immediate margins of creek channels, with springs, and with wetter portions of floodplain terraces. All plant communities in the project are have been adversely impacted by juniper invasion.

Numerous species of wildlife use this zone for migration from summer to winter habitat and many species use it on a year round basis. Ash Valley Ranch and surrounding area provide habitat for mule deer, pronghorn antelope, mountain lion, coyote, badger, black-tailed hare and cottontail rabbit. Various reptiles including rattlesnake, garter snake, gopher snake, and the western fence lizard use this area. Raptors including the red tailed hawk, great horned owl, Swainson's hawk, rough-legged hawk, ferruginous hawk, prairie falcon, and golden eagle potentially use the area for foraging. Numerous waterfowl, including sandhill cranes, use riparian and wetland areas. Sagebrush steppe provides potential habitat for the sagebrush-obligate sage grouse (*Centrocercus urophasianus).* Wildlife habitat throughout the Ash Valley Ranch and adjacent BLM lands have been degraded by western juniper invasion.

The proposed project will restore native plant communities and hydrologic function to at least 677 acres of rangeland heavily impacted by western juniper invasion in northeastern CA (our SNC project CEQA clearance covers 1,152 acres and if bids come in lower we will treat more acres). The primary social and economic impact of the

proposed project is the benefit to ranching viability in northeastern California. With respect to public and private environmental benefits, the project will restore properly functioning, productive, rangeland plant communities. Restoration of native grassland and sagebrush steppe communities and hydrologic function is vital to the continuation of ranching in the region. Livestock are dependent on the water resources and forage that will be restored through project implementation. In addition the project will provide enhancement of social benefits associated with sightseeing, viewing and hunting game, and reduction of wildfire hazard in rural communities. Post-treatment restoration will be enhanced through the implementation of adaptive grazing prescriptions on the BLM grazing allotments.

The proposed project is consistent with the Lassen County General Plan, Lassen County Wildfire Protection Plan, the BLM Alturas Field Office Resource Management Plan and the joint US Forest Service/Bureau of Land Management Sage Steppe Ecosystem Restoration Strategy Final Environmental Impact Statement. Environmental, economic, and social benefits are expected to accrue following implementation of the proposed project.

The proposed project would not result in significant adverse short-term or long-term effects on the natural or human environment. The project is designed to avoid or minimize potential short-term effects on soil, hydrology, vegetation, wildlife, range, air quality, visual, and cultural resources. Implementation of the proposed project would indirectly result in long-term beneficial effects on ecosystem health, soils, hydrology, and wildlife habitat. The potential effects of the proposed projects on individual natural resources are explained in EFN: 725_CEQA_NEPA_SupportDocs.pdf.

b. Workplan and Schedule

Months (Assumes April 2013 Start-up)	1	2	3	4	5	6	7	8	9	10	12	13	14	15	16	17	18	19	20
Workplan Table																			
Project layout																			
Prepare bid solicitations																			
Setup photo monitoring points (pre-treatment)																			
Contractor selection																			
Restoration treatments																			
Fence Construction																			
Hydrological Monitoring																			
Vegetation Monitoring																			
Post project photo monitoring																			
Month 6 progress report																			
Month 12 progress report																			
Prepare completed installation GIS files																			
Final progress report and closeout																			

Contactor solicitation will commence upon grant execution. One contract will be awarded to an LTO for the biomass removal/restoration treatments and another will be awarded to a fencing contractor. It is our goal to have the fencing work completed within the first 3 months. The juniper restoration treatments will commence with juniper shearing shortly after project award. The material will then remain on the ground for

about six months in order for it to dry sufficiently to make a biomass product. After drying the material will be skidded to a landing, chipped and hauled to a wood biomass electrical generating facility where it will be used in the production of clean/green renewable energy. The specifications for the above work are contained in the BLM issued EA contained in: *EFN: 725_CEQA_NEPA_SupportDocs.pdf*

The monitoring work will commence in April of the first year and will be conducted as described herein during the months of April, July and October of each project year by our contracted PhD Ecologist.

c. Restrictions, Technical/Environmental Documents and Agreements

No extraordinary restrictions have been placed on this project. A Conservation and Stewardship Plan has been developed for the Ash Valley Ranch which includes several studies analyzing potential environmental and cultural impacts of implementing the proposed project. Environmental studies include a synopsis of no potential project impacts on federal and state listed wildlife and plant species, U.S. Forest Service and California wildlife species of special concern, or plant species on the California Native Plant Society Inventory of Rare and Endangered Plants of California. The Genesis Society has conducted two Class III Archaeological Surveys that cover the project area.

California Environmental Quality Act (CEQA):
The project is exempt from CEQA per Article 19: Categorical Exclusions, Section 15304: Minor Alterations to the Land

Proposed actions will be conducted under CEQA exemptions approved by the Pit Resource Conservation District under Section 15304 of the Guidelines, which exempts minor alterations in the condition of land, water and/or vegetation which do not involve removal of healthy, mature, scenic trees except for forestry or agricultural purpose (*See EFN: 725_CEQA.pdf*).

Project contractors will be Licensed Timber Operators who are regulated by, and operate under, the rules and regulations of the *California Forest Practice Act*.

National Environmental Policy Act (NEPA):
The BLM Alturas Field Office has conducted the necessary National Environmental Policy Act (NEPA) compliance for treatments proposed within this plan on BLM lands (*See: EFN 725_NEPA.pdf*) and cooperative agreements have been developed to allow LCFSC/CSSRI to implement restoration treatments on BLM and private lands within the treatment area (*See: EFN 725_Tenure.pdf*).

d. Organizational Capacity

LCFSC has no salaried employees. All other work is furnished by independent contractors, including a Managing Director who manages all our projects. The LCFSC also contract for Registered Professional Forester Services, Biological and Botanical

services (including monitoring) and Cultural Resource/Archaeological services. All contracted staff work closely together to successfully implement LCFSC projects.

The LCFSC has implemented a wide variety of projects and it is not unusual for the LCFSC to annually manage over $1 million in project funding. The LCFSC has conducted restoration treatments on over 18,000 acres in Lassen, Modoc & Shasta Counties over the last 10 years. The LCFSC has completed and are successfully managing several SNC funded projects. In 2010, a 3.5 million dollar NRCS Conservation Innovative Grant was successfully implemented jointly by the LCFSC and the Pit Resource Conservation District under their CSSRI partnership resulting in the restoration of over 4,000 acres of sagebrush steppe. The CSSRI Partnership just completed a 2.8 million dollar NRCS Cooperative Conservation Partnership Initiative (CCPI) resulting in the restoration of an additional 4,000 acres of sagebrush steppe, eastside pine, and riparian habitat. The LCFSC has completed all projects on time and within budget. In summary, LCFSC has the expertise and capacity to complete the Ash Valley Ranch Native Grassland Restoration project.

e. Cooperation and Community Support

The Lassen County Board of Supervisors, US Forest Service, US Bureau of Land Management, US Fish and Wildlife Service and the Natural Resource Conservation Service have all provided letters of support for this project. The project meets many of the community goals outlined within the Upper Pit River Watershed Management Strategy developed by the Pit River Watershed Alliance with contributed support from LCFSC.

f. Long-Term Management and Sustainability

In their current condition native grasslands within the project area are not sustainable and would continue to be degraded if western juniper is not removed from the area.

The long-term objective of the project is to return native grasslands in Ash Valley to pre-settlement conditions characterized by productive native grasslands and properly functioning watersheds. Restoration of full ecological function will occur over many years; however, native grasslands begin to recover quickly following juniper removal. For example, our CSSRI partnership has been implementing treatment prescriptions using conventional and modified forestry equipment and post treatment adaptive management on producer operations over the past nine years. The monitored results are showing a dramatic resurgence in perennial grasses and shrubs. In addition, recent studies by the University of Oregon Cooperative Extension have also shown that juniper removal treatments improve hydrologic function after one year by increasing soil moisture throughout the growing season, increasing spring flow, and increasing the duration of ground water availability. As plant communities continue on a trajectory toward restoration they become more resilient and need minimal management to continue to recover potential native vegetation. Minor maintenance of juniper removal will be needed every ten to fifteen years to sustain this condition.

The fencing plan is a long-term tool for enhancing ecosystem restoration and managing a sustainable livestock operation. Implementation of this plan will provide rest for pastures allowing native grasslands to respond to juniper removal and will prevent overuse over the long term.

The property is a working cattle ranch with a keen emphasis on wildlife. Adaptive range management will continue to be implemented to ensure our restoration treatments are sustained and that the meadow systems are maintained for cattle operations with the least amount of water and energy consumed as possible.

Protection and Maintenance

Ash Valley Ranch is committed to rangeland restoration and the Ash Valley Ranch Management Plan shares many objectives with the proposed project. Ash Valley Ranch is committed to carrying out the following activities to meet the long-term goals and objectives of the project and of Ash Valley Ranch:

- Annual road maintenance to reduce the potential for erosion to effect water quality;
- Annual inspections for noxious weeds; potential infestations will be treated immediately;
- Adaptive management/prescribed grazing practices will be implemented to ensure that forage quality is maintained or improved;
- The Ash Valley Ranch Management Plan will be reviewed every five years to review goals and objectives and determine whether protection and maintenance measures are working to meet the outlined goals and objectives.

g. Performance Measures

We will report quantities and/or values of the following performance measures:

i) Number of People Reached
The LCFSC will provide updates on our website, http://www.lassenfiresafecouncil.org/ regarding project implementation and successes. The project will also be featured in our quarterly newsletter and a field tour.

ii) Dollar Value of Resources Leveraged for the Sierra Nevada
The LCFSC has a successful track record leveraging funds and we will leverage additional resources beyond those included in our budget.

iii) Number and Type of Jobs Created
Project will preserve and create forest products sector jobs.

iv) Number of New, Improved or Preserved Economic Activities
Project will help preserve our forest products sector, renewable energy production activities and ranching, all of which are suffering in the region.

v) Acres of Native Grassland Restored
The number of acres of native grassland will be reported.

vi) Acres of Land With Reduced Wildfire Hazard
The number of acres on which wildfire hazard risk has been reduced will also be provided.

vii) Kilowatts of Renewable Energy Production Capacity Maintained or Created
The biomass developed from this project will create renewable energy kilowatts.

viii) Increase in available soil moisture and ground water availability as a result of our restoration treatments
We have 3 years of pre-project monitoring in our project area that will help us ascertain the benefits of our project treatments to the hydrological function of the watershed.

ix) Improvements to plant composition as a result of our restoration treatments
We have 3 years of pre-project monitoring in our project area that will help us ascertain the benefits of our project treatments to the overall plant composition of the treated area.

h. Budget Narrative

Our restoration treatment contractor/LTO will receive the delivered value at the plant for the biomass produced as partial compensation for their services. Based on recent bids/biomass prices the material alone will not provide sufficient compensation. Therefore contractors will be bidding on a subsidy which is expected to range in the range of $275 to $350 per acre.

Our fencing budget covers a fence that meets USDA/Natural Resources Conservation Service specifications and it is considered “wildlife friendly”. Deer and antelope can pass either over or under it with little or no challenges. We expect bids to come in between $2.75 and $3.00 a foot.

We also intend to continue and expand on the vegetation and hydrological monitoring we have conducted in the area over the last 3 years. We have budgeted funds for additional groundwater monitoring equipment to quantify rates of groundwater recharge. We will monitor ground water recharge using passive capillary lysimeters in established monitoring locations. No studies to date have measured rates of ground water

recharge. These data will provide critical data with respect to effects of juniper removal on water budgets.

Our PhD Ecologist, Dr. Eileen Ilano, will provide the monitoring and evaluation services. She will be paid a contract rate of $13,000 for the project.

Project and Contractor Management will be provided by the Lassen County Fire Safe Council, Inc. Managing Director for the SNC project. We have budgeted $25,000 for this work. SNC funds will pay for $15,000 of the management expenses and the balance, $10,000, will be funded by Lassen County Fire Safe Council, Inc.

$11,604 has been budgeted to cover the Lassen County Fire Safe Council, Inc. administrative expenses in connection with the project. SNC funds will pay for $$6,604 of these expenses and the balance, $5,000, will be funded by Lassen County Fire Safe Council, Inc.

Ash Valley Ranch has agreed to supply a $10,000 contribution in the form of dozer work for road maintenance and slash pile disposal. LCFSC will supply a $15,000 cash contribution to fund year 1 project management and administrative expenses. Calfire Intermountain Camp Conservation Crews are expected to provide at least a $30,000 in-kind contribution under our current cooperative agreement.

Our Cooperative Sagebrush Steppe Restoration Initiative partnership (CSSRI) has invested over $60,000 getting all the environmental compliance work competed for this phase of our project. The project area is positioned between two large tracts where landscape scale restoration activities have been competed over the past 10 years by CSSRI and the Bureau of Land Management. One tract covers 8,000 acres directly adjacent to the south and another covers over 4,000 acres to the north. When this phase of project is completed there will be a contiguous of the area of almost 18,000 restored acres.

Our overall project area is 5,500 acres of which 1,100 have been completed. We submitted an application (11/15/12) to NRCS for a National Conservation Innovative Grant which would treat another 1,000+ acres. We are also in the early stages of an application submittal to the California Department of Water Resources (DWR) through the Upper Pit Regional Watershed Management Plan working group. The DWR application would fund an additional 1,100-1,500 acres.

Previous contributors to the project have been NRCS, Sand County Foundation, Us Fish and Wildlife Service, California Deer Association, Calfire Intermountain Camp Conservation Crews, Lassen County Resource Advisory Committee and SNC.