

## A. Detailed Project Description

### Project Goal

The USFS Central California Consortium is submitting an SNC proposal for their “Generation Green Stewardship Crews” project. The project will consist of two crews. One will be remove noxious weeds and invasive non-native plant species and the other will work on meadow restoration.

The goal is to keep Sierra National Forest (SNF) ecosystems and watersheds from being damaged by noxious and invasive non-native weed species. The SNF is dominated by a high proportion of native species, especially at middle and higher elevations. Several species of invasive non-native plant species are threatening to damage these public lands irreversibly if not controlled promptly. An aggressive early detection and rapid response program focused on manually eradicating small infestations before they spread beyond our capability to control them is a key component of a successful Integrated Weed Management Program.

Stable montane meadows serve a vital role as water storage, release, and filtration systems, as such it is essential that the hydrologic function of meadows be preserved, improved, or restored. The overall goal of this project is to is to completely restore and/or preserve the hydrologic function of four degraded meadow systems on the Sierra National Forest within the Upper and Lower Chiquito Creek watersheds such that water quality impacts from accelerated erosion is eliminated and water storage and residence time is maximized, increasing annual water availability to riparian-aquatic systems, wildlife, and livestock.

### **Project\_Scope/Location**

The first crew will be supervised by the SNF Forest Botanist. This crew will travel to various areas where small infestations of high-priority invasive non-native plants can still easily be controlled with manual methods. The primary weed species to be controlled would be yellow starthistle, Italian thistle, bull thistle, klamathweed, Scotch broom, Spanish broom, and French broom, along with others as needed. Primary areas of focus of yellow starthistle weed are around the communities of Tollhouse, Auberry, North Fork, Bass Lake, Oakhurst, Mariposa, and El Portal. Bull thistle is primarily a weed of mountain meadows, moist areas, and in some cases, clear cuts or other disturbed sites. The 2012 primary areas of infestation in coniferous forest are north of Jerseydale, and around Fish Camp, Bass Lake, Blue Canyon, and Balch Camp. The strategy for broom at this time is containment, the core infestations at Fish Camp, Blue Canyon, and Bass Lake will require future NEPA analysis and herbicide application for complete control.

The second crew will be supervised by the Bass Lake District Hydrologist and will work on the Upper Chiquito Creek Meadow Restoration Project; SNC proposal submitted by the Yosemite/Sequoia Resource Conservation and Development Council. This crew will restore and/or preserve the hydrologic function of four degraded meadow systems on the SNF within the Upper and Lower Chiquito Creek watersheds. Long Meadow (near lower Chiquito Creek campground), Cold Springs Meadow, Cold Springs West Meadow, and un-named meadow 506M91 have been identified as high priority sites for restoration. All of these meadows have compromised hydrologic function, with vertically and laterally unstable streams at the downstream end of each meadow. Stabilization of the headcuts will be accomplished by the construction of rock step-pools and re-vegetation of denuded channel banks by native sod and live-stake willow plantings.

Value Added - Diverse college students, interested in pursuing natural resource related fields, will be recruited for these crews. Through this project, forest health will be improved, while crew members will build leadership, gain valuable experience, environmental education, and be exposed to natural resource careers.

### **Project Summary and Deliverables**

#### Noxious Weed and Non-Native Invasive Plant Removal

Crews will manually remove small infestations of noxious weeds and when possible, prior to flowering (eliminates need for bagging). Most infestations are already GIS mapped and have been treated in past, but some cases the crews will be new findings, which require documentation. When it is necessary to hand-pull infestations that are in flower, thick (3 ml) plastic garbage bags are used to remove the plants from the site. The overall goal is to stop all seeds from forming in each infestation, when this is done for enough consecutive years we declare a weed infestation eradicated.

#### Meadow Restoration

The Project will entail the stabilization and/or restoration of four meadows on the Sierra National Forest, within the upper Chiquito Creek watershed. The desired condition (outcome) for the restoration projects include:

- Stabilization and preservation of 31 acres of montane meadow;
- 1 mile of improved and stabilized stream channel.
- Cessation of erosion and impacts to water quality from the meadows;
- Protection of 0.3 stream miles of mountain yellow legged frog habitat;
- 2 acre reduction in encroaching conifers within the project meadows;
- 0.5 acre reduction of invasive noxious weeds;
- Approximately 0.3 miles of tracks and system roads will be closed and/or restored to prevent impacts to adjacent meadows

### **Environmental Setting**

Noxious Weed and Non-Native Invasive Plant Removal Most of the weed infestations are along roadsides, trails, and recreational sites (disturbed areas) in the lower and mid-elevation conifer forest, sometimes they are at lower elevations in chaparral where the weeds are poised to spread upslope into the conifer forest.

#### Meadow Restoration

The meadow restoration project areas occur within the upper Chiquito Creek watershed, located in the north-central part of the Sierra National Forest, just south of Yosemite National Park (Figures 5 and 6).

## **B. Workplan and Schedule**

Detailed Project Deliverables *2012-2013	Timeline
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SNC Grant Authorization	June
Crew Leader/Assistant' Start Date/ Orientation	June 4- 5
Supervisors introduce crew leaders to scope of work, integrated weed management, control methods and tools, field trips to first work sites.	June 6-8,
Crew Member Start Date/Orientation	June 11-12
Supervisor makes presentation to crew about invasive weeds, spends rest of day in field working on project overview and safety.	June 13
Crew works on project	June 14
Public Speaking Workshop	July 18
Crew continues field work, including re-checking some of sites	July 19
Practice presentations for Intern Awards Ceremony	August 1
Intern Awards Ceremony	August 2
Crew Members Last Day/Debriefing	August 3
Crew Leaders/Assistants work with Supervisors to finish documenting all work done during the summer	August 6-9
Crew Leaders/Assistants' Last Day	August 10
Report to SNC	December 31

\*Note: The crews will work this schedule as outlined above (Noxious Weed and Non-native Invasive Plant Removal Crew starts 2012-2016, Meadow restoration starts 2013-2015)

### C. Restrictions/Agreements

#### Weed crew

Project takes place on National Forest System Lands by the USFS. Written permission from the property owner will be requested if applicable.

#### Meadow Restoration

No property restrictions apply. Project will occur on National Forest System Lands by the USFS.

### Regulatory Requirements and Permits

#### Both crews

Categorical Exclusion under NEPA and a water quality waiver with the State of California, Regional Water Quality Control Board. Permitting by other State and Federal agencies not required.

#### **CEQA/ NEPA**

#### Weed crew

NEPA completed under Categorical Exclusion (36 CFR 220.6 (e) (7)). Disturbance footprint is less than five acres at any given site, no impacts to listed species, no heavy equipment will be used, thus projects qualify for a CEQA exemption under 15333, Small Habitat Restoration projects.

#### Meadow Restoration

NEPA has been completed under Categorical Exclusion (36 CFR 220.6 (e) (7)). The disturbance footprint is less than five acres, there are no impacts to listed species, and no heavy equipment will be used in the meadows, thus these projects qualify for a CEQA exemption under 15333, Small Habitat Restoration projects.

#### **D. Organizational Capacity**

##### Noxious Weed Crew

The Sierra National Forest's ability to get on-the-ground weed control work done is well-established, we have been accomplishing between 50 and 85 acres of manual weed control annually for the last 12 years, often with the help of Central California Consortium crews. The FS botanists are accustomed to working with the CCC Generation Green crews and have found the partnership to be highly mutually beneficial. The experience of watching young people learn about resource issues and gain a deep understanding about invasive weeds and the resources they threaten through hands-on work is most satisfying.

##### Meadow restoration

The U.S. Forest Service has the organizational and scientific expertise to implement and monitor the restoration activities. Project implementation will be managed by a journey level hydrologist with Rosgen Certification. The rest of the Forest Service team will be made up of experienced hydrologic technicians, journey level resource scientists, and professional equipment operators.

#### **E. Cooperation and Community Support**

##### Noxious Weed and Non-native Invasive Plant Removal Crew

The Sierra National Forest has worked as a founding member of the Sierra-San Joaquin Noxious Weed Alliance since 1998; a Weed Management Area for Mariposa, Madera, and Fresno counties. The group collaborates on weed prevention and control projects successfully. The Forest Service botanists and the CCC program also work with other disciplines within the Forest Service.

When working on private lands adjacent to Sierra NF lands, we will obtain written permission from the property owner prior to conducting weed removal work. In our experience, property owners are usually overjoyed to be offered help with their noxious weeds and are more than willing to sign a waiver.

##### Meadow Restoration

This project will be a collaborative effort between the Yosemite/Sequoia Resource Conservation & Development Council (YSRDC) and the U.S. Forest Service, Sierra National Forest. The YSRDC has extensive experience managing and administering grants and watershed programs and will act as fiscal agent and coordinate public outreach and education.

#### **F. Long Term Management and Sustainability**

### Noxious Weed Crew

All work conducted on/near the Sierra National Forest is documented (data forms, GIS database). Work is entered into the National Forest Service Activity Tracking System (FACTS) database, so over time we can confirm eradication and reduction of infestations. The FACTS database has a field for “funding source” where we give credit to grantors. We take pictures of former weed-infestations to show recovery. Over 5 years, we expect about 20 infestations of yellow starthistle (and others) could be entirely eradicated (many others could be reduced by 90%).

### Meadow Restoration

All work in the project meadows will be protected from livestock or human impacts by a fenced enclosure for a minimum of five years to allow for full vegetative recovery. The restoration sites will be inspected by a USFS journey level hydrologist biannually. If modifications and/or repairs to structures are needed, a prescription will be developed by June of that inspection year and maintenance carried out in August or September. The health and vigor of the native sod and willows used to stabilize the restoration sites will also be evaluated.

## **G. Performance Measures**

### Noxious Weed Removal

- A minimum of 20 infestations eradicated in 5 years
- At least 15 acres will be prevented from setting seeds at between 50 to 100 infested sites (most infestations 0.1 -0.3 acres in size). The result of over 5 years of this project would be 15 acres not spreading to become 25 acres or more
- The soil seed bank at all sites will respond by germinating and a higher proportion of native and less harmful non-natives will predominate, resulting in healthier ecosystems (documented)

### Meadow Restoration

#### Linear Stream Bank Protected

- Beasore Creek –880 ft of stream bank will be restored/stabilized downstream of the primary restoration structure. 1,400 linear ft will be protected upstream from continued erosion
- Long Meadow Creek – 4500 feet will be protected upstream from continued erosion
- Un-named Tributary to NF Willow Creek – 3,000 ft will be protected upstream from continued erosion
- Un-named tributary to Beasore Creek – 1280 ft will be protected upstream from continued erosion

#### Acres of Meadow Preserved

- Cold Springs Meadow – 12 acres
- Cold Springs Meadow West – 7 acres
- Long Meadow - 8 acres
- Meadow 506M91 - 4 acres