Planning High-Priority Invasive Plant Management in Mixed Conifer Forests in the Sierra Nevada

Narrative Description

a) Detailed Project Description

Project Summary: This planning project protects Sierra Nevada watersheds and mixed conifer forests by preparing high-priority invasive plant removal projects for implementation. With regional partners we will complete site assessments, environmental compliance, and management plans for key "rapid response" sites in Plumas and Tuolumne counties. Collaborators will use the new CalWeedMapper tool to determine other top sites across the region and how they can be served by a similar planning approach.

Environmental Setting: One site is at 4700 feet in the Plumas National Forest, where dyer's woad established in the mixed conifer zone after a 2007 fire. A second site is at 2800 feet near Groveland where Spanish broom has established on Caltrans right-of-way and Bureau of Land Management property. Land-use will not change.

Invasive plants can seriously alter mixed conifer forests and meadow habitats in the Sierra Nevada. Some plants alter undergrowth communities that support wildlife, some contribute to wildfire fuels, and others are strong fire-followers that can inhibit reforestation after wildfire. Controlling invasive plant populations before they spread is a cost-effective way to protect watershed and forest health. Some invasive plant species are just now moving into the region, and responding promptly is critical for avoiding large-scale impacts.

This project engages regional stakeholders from Plumas County to Fresno County, working through each county's collaborative Weed Management Area (WMA) group. WMAs engage virtually all stakeholders involved in land management in each county, including the US Forest Service, National Parks, UC Cooperative Extension, county agricultural departments, Caltrans, local Resource Conservation Districts, (RCDs), as well as Sierra Pacific Industries and private industry. These partners work together to stopping the spread of new invasive plants that are moving into the Sierra Nevada. Recently established high-priority populations have been identified but cannot be controlled without additional planning, primarily environmental compliance. These are cost-effective "early detection/rapid response" opportunities focused on small populations of known weeds with high potential for spread.

- Dyers woad (*Isatis tinctoria*) is a forb that has infested most of the northern part of the state and is now threatening to move south into the Sierra Nevada. It can expand to form dense monocultures, impacting native plant communities and forest regeneration. A lone 3.5-acre infestation was found at 4700-feet elevation in the Cooks Creek drainage in the Plumas National Forest following a 2007 fire

in mixed conifer forest, most likely introduced by firefighting equipment. Annual hand-pulling efforts have limited the plant's spread from this population so far, but full eradication will require application of herbicide. This cannot happen until project-specific NEPA/CEQA compliance work is completed. This infestation in the Plumas National Forest is one of a handful of populations in the Sierra Nevada, and should be removed before it spreads.

- Spanish broom (*Spartium junceum*) is a large woody shrub that has significantly invaded much of the northern Sierra, potentially contributing to ladder fuels for wildfire in mixed conifer forest. Broom populations in the southern Sierra are much less widespread to date. The southern "leading edge" in Tuolumne County is a key containment zone. The population established near Groveland may serve as a source population for further spread unless removed. Again, project-specific NEPA/CEQA documentation for small-scale herbicide application must be completed..

Along with working to complete planning for these two high-priority locations, project partners will collaborate to identify, prioritize and scope additional important invasive plant management opportunities in the region. These include species such as stinkwort (*Dittrichia graveolens*), an annual spreading eastward to higher elevations in the Eldorado National Forest, and hoary cress (*Cardaria draba*) a perennial found in a handful of locations in the southern Sierra that poses a potential threat in wet Sierra meadows.

Cal-IPC's new CalWeedMapper tool provides maps of each invasive plant species' spread and suitable range, and will facilitate regional prioritization. For each key population that is identified, the team will assess the planning barriers that impede treatment. A goal will be to identify particular planning activities that can be streamlined in order to facilitate rapid response to such new infestations across the region. Another goal will be to organize surveys to check "citizen science" reports in various locations to determine if the plant is actually there, and if so what management is needed.

b) Workplan and Schedule Narrative

Cal-IPC will coordinate site assessments, management plans, and environmental compliance for the two identified sites with the US Forest Service, UC Cooperative Extension, county agricultural departments and other regional partners. Using CalWeedMapper, partners will also identify other sites in the region that can be addressed using a similar approach.

Task/Deliverable	Timeline
Complete site assessment for Plumas and Tuolumne sites	2012 Q3
Form project team for environmental compliance work	2012 Q3
Begin environmental compliance work	2012 Q4
Progress Report #1	Dec. 31, 2012

Use CalWeedMapper to identify/scope additional priority sites	2012 Q1
Complete management plans	2013 Q1
Complete environmental compliance work	2013 Q2
Use CalWeedMapper to direct field verification of occurrence reports	2012 Q2
Project Completion, Final Report	June 30, 2013

c. Restrictions, Technical/Environmental Documents and Agreements Narrative

Restrictions/Agreements: There are no known restrictions expected to adversely impact project completion. The Plumas County site is entirely on public property. The Tuolumne County site is almost entirely on public property, and; the county agricultural department can access private property for noxious weed control.

Regulatory Requirements/Permits: CEQA compliance will be handled in two ways. For sites on Forest Service property, USFS staff will complete project-specific NEPA documentation (including CEQA requirements). Given the straightforward nature of the invasive plant treatments likely to be considered, we expect Negative Declarations and Findings of No Significant Impact. For sites not on federal land, we will plan management through county Agricultural Commissioners, who treat noxious weeds under a CEQA Class 8 exemption. Our sites will not require CDFG Section 1600 streambed alteration requirements, nor do we expect to impact listed species, avoiding the need to address Endangered Species Act requirements.

d. Organizational Capacity Narrative

Cal-IPC works with an extensive network of land management professionals across the state, providing strategic analysis and support. Key personnel for this project include Dr. Elizabeth Brusati, Cal-IPC Science Program Manager, who leads range-modeling efforts, and Dana Morawitz, Cal-IPC Mapping Program Manager, who leads CalWeedMapper development and regional planning. In recent years, Cal-IPC has built its capacity to provide strategic analysis in the Sierra through grants from the Resources Legacy Fund and the National Fish & Wildlife Foundation.

Partners for the project include representatives from the US Forest Service, UC Cooperative Extension, and county Agricultural Commissioners. The project is supported by the chairs of the Sierra-Plumas WMA, the El Dorado WMA, the Alpine WMA, the Central Sierra WMA (Tuolumne and Calaveras counties), and the Sierra-San Joaquin WMA (Madera, Mariposa, and Fresno counties). All will be active as partners in the project, representing a great amount of expertise and capacity.

e. Cooperation and Community Support Narrative

As described above, numerous organizations through WMAs in the region will be key partners, providing local expertise and community stakeholder support. WMA participants will be instrumental in evaluating and selecting priority invasive plant sites.

These partners have already participated in our work to generate a Sierra Nevada strategy for an initial set of forty species (www.cal-ipc.org/ip/mapping/sierra). Letters of support are included from:

- Keith Mahan, Plumas County Agricultural Commissioner, Chair of Plumas-Sierra WMA
- Wendy West, Extension Agent, University of California Cooperative Extension Chair of El Dorado WMA
- Scott Oneto, Extension Agent, University of California Cooperative Extension, Chair of Central Sierra WMA (Tuolumne and Calaveras counties)
- Joanna Clines, Forest Botanist, Sierra National Forest, Chair of Sierra-San Joaquin WMA (Madera, Mariposa and Fresno counties)

f. Long-Term Management and Sustainability Narrative

The proposed project is the latest step in an ongoing process to address high-priority invasive plant populations in the Sierra Nevada. The completion of the CalWeedMapper online tool provides a way to track these priorities as they evolve over time. This includes project treatment as well as new invasive plant finds.

By building a regional collaborative effort through the county WMA structure, we have the infrastructure in place to plan and monitor progress on invasive plant management efforts over the long-term. We are training regional participants in using the online tool to maintain records of treatments and observations. This helps ensure the continuity of project efforts despite personnel changes and budget fluctuations. Long-term conservation progress is the bottom-line goal of this project.

g. Performance Measures Narrative

This planning project lays groundwork for future site improvement. Performance measures will include the number of sites for which we complete planning, the number of acres that will be improved by eventual implementation, and the estimated number of acres protected by preventing spread of pioneer invasive plant populations. We will also report on the number of additional sites identified to be addressed by a similar planning approach in the future, and the number of occurrence reports identified for field verification.

Project Name: Planning High-Priority Invasive Plant Management in Mixed Conifer Forests in the Sierra Nevada
Applicant: California Invasive Plant Council

Direct Costs	**Year 1**	**Year 2**	**Total**
Salary and Benefits (Program Manager at $32.50/hr)			
- Site identification, selection, and assessment (240 hrs)	7,800		7,800
- Assessments and environmental compliance (400 hrs)	13,000		13,000
- Mapping and management plans (320 hrs)	10,400		10,400
Contractors			
- Environmental compliance (300 hours at $50/hr)	15,000		15,000
- Field mapping (100 hours at $40/hr)	4,000		4,000
Travel			
- 10 trips x (400 mi x $0.50/mi) + $100 lodging + $50 meals	3,500		3,500
Direct Costs Subtotal:	53,700		53,700
Indirect Costs			
Salary and Benefits (Program Manager at $32.50/hr)			
- Performance measure reporting (40 hrs)	1,300		1,300
Occupancy and communications	5,000		5,000
Supplies	500		500
Indirect Costs Subtotal:	6,800		6,800
Project Total:	60,500		60,500
Administrative Costs			
Accounting, insurance and legal at 15%	9,075		9,075
Administrative Costs Total:	9,075		9,075
SNC TOTAL GRANT REQUEST:	**69,575**		**69,575**
Other Project Contributions			
Partners, in-kind, 12 experts x 10 hrs each at $50/hr	6,000		6,000
Total Other Contributions:	6,000		6,000