

Table Bluff Ecological Reserve Coastal Prairie Restoration Project

Work Plan

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Project Summary

Restoration at the Table Bluff Ecological Reserve (Reserve) is designed to benefit Federally and State Endangered western lily (*Lilium occidentale*), native coastal prairie, and culturally significant plants on the Reserve. Table Bluff supports one of the four most viable populations of western lily, and the only population on protected land in Humboldt County. In the period between the acquisition of the Reserve in 1986 and 2013, a combination of thinning encroaching Sitka spruce and other woody vegetation, preventing predation, and seasonal winter cattle and goat grazing successfully increased the reproductive population from less than 100 to more than 1000 flowering plants. However, without substantial management for western lily on the Reserve in the last 10 years, the flowering population has fallen back to one tenth of the 2013 population peak. Implementing Sitka spruce thinning to open the canopy as well as reinstating goat grazing and manual brush and invasive plant removal is necessary to revive the reproductive population.

Western lily is associated with early successional prairie, scrub, and wetland habitat near the coast, and this Endangered plant's decline may be largely attributed widespread loss of these habitats. Native coastal prairie and other early successional habitats are rich hotspots for biodiversity that face dual pressures of extreme disturbance associated with tilling and development on one hand, and the removal of disturbance regimes from the landscape on the other. Western lily and its early successional habitat once occurred in coastal lowlands and terraces around Humboldt Bay that have been largely developed or tilled for agriculture. Prior to agriculture and development associated with colonization, coastal prairies were rich with game, starchy edible geophytes (often called "Indian potatoes"), wild grains, and other useful and culturally important species. While grasslands that have been degraded by tilling and overgrazing no longer support western lily and other sensitive native herbaceous species such as

geophytes, areas that have been undisturbed have been subject to encroachment by conifers and other woody vegetation that shade out early successional herbaceous vegetation.

Restoring coastal prairie to benefit Federally and State Endangered western lily and the overall ecological and cultural value of the Reserve will be a multi-step process that has been broken down into the following Tasks 1-4.

Task 1. Project Management

Mattole Restoration Council, Project Grantee and a local 501c(3) non-profit, will be responsible for the project management task. A major component of project management will be managing contracts with forest managers, the Wiyot Tribe Native Plant Nursery, an ethnobotanical researcher, Wiyot Tribe interpretive services, interpretive sign artwork and building, a work crew, fencing installation, and ADA trail construction. Another major component of project management will be coordinating restoration activities with the Wiyot Tribe Nursery, including ensuring that the project has a sufficient number of planting starts, native seeds, and other materials, providing training as needed, overseeing ground preparation and planting, and assisting with public outreach.

Deliverables:

Quarterly Progress Reports, Invoices, Subcontracts, Final Report.

Timeline:

Throughout Grant.

Task 2. Forest Thinning

One of the primary actions to be taken in Year 1 will be to thin encroaching Sitka spruce and other woody vegetation from the western lily population area. Previous studies have shown benefits of opening the canopy and reducing shading onsite, and this step will largely follow previous management recommendations from U.S. Fish and Wildlife Service. Overshading of western lily will be reduced by thinning Sitka spruce to less than 25% canopy cover in the western lily population area. Non-native trees, invasive species, and brush will also be removed. Forest management services will be contracted to perform a tree inventory, mark trees for removal, carefully remove trees via cable to avoid soil disturbance in sensitive areas, and grind out stumps of aggressive non-native trees if needed. Removed trees are to be given away to the Wiyot as firewood, used as large wood in restoration, mulched and stored onsite for use in restoration, or allocated for some other beneficial use. Seasonal goat grazing will be used to maintain open habitat for western lily.

Deliverables:

Pre- and Post-thinning Tree Inventory Table, Vegetation Monitoring and Western Lily Monitoring Results with Photo Points.

Timeline:

Thinning will occur after the end of the migratory bird nesting season in August 2023 and will conclude in December 2023. Results of the tree inventory and monitoring will be provided in a final monitoring report at the end of the grant period.

Task 3. Pilot Project

An experimental pilot project will test the effectiveness of prescribed burning, seasonal goat grazing, and mulching on the growth of variety of native coastal prairie and culturally significant plant species to use in restoration. Testing methods of restoring native coastal prairie vegetation and culturally important plant populations sourced and cultivated by the Wiyot Tribal Nursery will help establish the best way to implement broader restoration. Partnering with the Wiyot Tribe of Table Bluff and hiring their new Native Plant Nursery Program for cultivation and restoration of culturally significant plant populations of interest to the Tribe is an important step toward incorporating cultural survival and Traditional Ecological Knowledge into restoration and management of Table Bluff. The pilot project will require collecting and growing out native seeds and other propagules in a greenhouse, manually removing brush for a fence line and fire break, implementing a prescribed burn during the fall-winter dormancy period, installing a fence, moving goats into the fenced experimental grazing area, and planting and monitoring garden plots. Soil sampling will be used to determine if any areas appear to be potentially suitable as western lily habitat. This task will provide scientific data to inform future coastal prairie restoration efforts at Table Bluff and along the North Coast. Please see Restoration Monitoring Plan for experimental design and other monitoring details.

Deliverables:

Vegetation and Experimental Native Garden Plot Monitoring Results to be included in a Final Restoration Monitoring Report, Draft Scientific Article.

Timeline:

Final Restoration Monitoring Report to be prepared by September 2026, and a Draft Scientific Article shall be prepared to be submitted for publication in Spring of 2027.

Task 4. Science-Based Restoration and Management Planning

The remaining approximately 100 acres of degraded pasture on the Reserve will be restored to a mosaic of coastal prairie with culturally significant plant species using the most successful native species and restoration methods. Expanding native coastal prairie into previously degraded non-native pasture is key to the long-term survival and resilience of this threatened vegetation community. Using restoration methods that have been experimentally tested onsite will give this project its best chance of success. Information gathered from monitoring the western lily response to vegetation management, the results of the pilot project, and other changes to the Reserve as the result of restoration and increased public access will be used to develop an updated Table Bluff ER Management Plan. Long-term management planning will prescribe maintenance and other management to maintain the ecological and cultural value of the Reserve for decades to come.

Deliverables:

Updated Table Bluff ER Management Plan, Documentation of Coastal Prairie Restoration in Final Report.

Timeline:

Updated Table Bluff ER Management Plan and Final Report to be provided at end of grant period.

Task 5. Public Access and Interpretation

An public access trail with environmental and cultural interpretation through restored coastal prairie will provide enjoyment and education to visitors without compromising important or sensitive habitat. The short nature trail will aim to provide inspiring views, an opportunity to see and learn about ecological restoration of coastal prairie, and learn about the deep cultural history of the site. Interpretation will be a collaborative effort that will be contracted to be led by the Wiyot Tribe's expert cultural interpreters with bilingual interpretations in *Soulatluk*, the Wiyot language. Educational signage will be unobtrusive so as not to obstruct scenic views, and should be a continuation of the natural aesthetic used in surrounding public access areas. The educational nature trail and seating will be made accessible to mobility-impaired members of the public where feasible.

Deliverables:

Trail construction and interpretive aspect to be open to the public.

Timeline:

Opening to the public March 1, 2027.

