



Position Statement: Rare Natural Communities Initiative

The Conservation Value of California's Vegetation

The protection and understanding of natural plant assemblages is one of the key objectives of the California Native Plant Society (CNPS). Whether we call these assemblages "natural communities", "plant communities", "habitats", or "vegetation types", the purpose of the CNPS Vegetation Program is to define their biotic patterns, raise awareness of their functional importance, and conserve their biodiversity. We use classifications, definitions, and spatial representations (e.g., maps) as tools to identify and protect the components of these natural units across the landscape.

CNPS and other organizations have long recognized the need to protect both rare and common vegetation types as units of biodiversity. Vegetation communities are the biological matrix within which all associated species, from invertebrates to mammals, reside. Yet unlike the multitude of individual species, vegetation communities can be more easily and accurately sampled and mapped using available protocols, and the outcomes extrapolated to multiple species. This makes vegetation communities one of the best indicators of health, functional integrity, and biodiversity of terrestrial habitats throughout California, from our mountains and deserts to the valley and coastlines. With rigorous sampling and mapping efforts, it is possible to monitor change and ecological health over time, thereby creating a series of 'snap-shots' of ecological health and change at a broader scale than we could hope to master using a single-species approach. Those communities identified as rare, threatened, or in decline, and those identified as pristine can be inventoried and safeguarded. Degraded areas can be ranked for restoration priority.

Vegetation provides a range of ecosystem services, including maintaining water and nutrient cycles, storing atmospheric carbon dioxide, and providing habitat to numerous common and rare plant and animal species. Complete conversion or even degradation of vegetation alters these functions, resulting in a shift in species composition. For these reasons, scientists and conservationists have used vegetation as a measure of ecosystem health, integrity and functionality for many years. The Natural Heritage network of NatureServe, originally established by The Nature Conservancy has, for 30 years, used natural communities as a kind of "coarse filter" in combination with rare plant and rare animal species to assess the ecological health and the conservation value of regions around the world. Both State and Federal agencies have formalized Natural Community Conservation Planning (NCCP) and Habitat Conservation Planning (HCP) as integral regional conservation efforts. These processes are grounded in inventory and mapping of vegetation/habitat to protect a suite of natural communities in which rare species occur.

Rare Vegetation

Of key importance to CNPS are those vegetation communities that are, in and of themselves, rare. California is full of examples of rare and endangered vegetation; in fact, approximately 60 percent of our state's described vegetation (at the alliance level) is considered rare (ranked as S3 or below; Sawyer et al. 2009¹, Evens 2011²). Some of these, such as old growth Coast Redwood stands, Giant Sequoia groves, Monterey Cypress stands, or Torrey Pine groves, are well-known and revered by many as important natural assets in the state. Others are less known but of equal importance; for example, most of the state's 11 species of cypress (*Callitropsis*) form stands of vegetation and are naturally rare. More than 20 of the state's 60 manzanita (*Arctostaphylos*) species are only known from limited areas, yet appear abundant enough locally to form their own vegetation stands. Some vegetation communities are inherently rare; they may be endemic to California, be isolated as a result of long-term shifts in climate, or be restricted to an unusual combination of climate and substrate. However, other once-common vegetation communities have been reduced by human activities. Examples include riparian woodlands

and savannas of valley oak (*Quercus lobata*), high quality stands of native north coastal terrace prairie, and the once extensive and intact coastal sage scrub of south coastal California.

The different categories of rare vegetation surpass the natural forms of rarity of individual species, simply because multiple permutations are the norm when more than one species represents a single vegetation stand, and a stand of vegetation can be defined by morphology (structure) as well as by species. Thus, rare species, common species that are only rarely in a particular stage of development (e.g., old growth forest or old growth chaparral), and even rare and unusual assemblages of otherwise common species (as occur at bio-geographic mixing zones) may all be rare vegetation communities. An added layer of complexity in this concept of rare vegetation communities is our changing climate. Some communities that are restricted in range and currently considered sensitive may soon become truly rare and be threatened with extirpation. Examples may be relict species such as *Sequoiadendron giganteum*, which may be unable to respond to climate change rapidly enough, or communities occupying high elevation alpine zones that may simply have no other place to go. Climate change underscores the need for diligent observation and continued reassessment of what is considered a rare vegetation type.

Challenges and Objectives

For nearly 20 years, CNPS has had a mission to inventory and protect vegetation throughout the state. During this time, we have developed a state's standard accepted protocol and classification system for sampling and describing vegetation, and we have been very successful in advancing our understanding of California vegetation. However, some of our greatest challenges to be addressed are the conservation and protection of rare plant communities. Part of the challenge is that, unlike species, we have few legal ways to support protection for plant communities. No equivalents to the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA) exist for the protection of endangered plant communities. In California, we have specific measures that offer limited recognition for the protection for rare natural communities. We can justify protection of rare vegetation in the state through the California Environmental Quality Act (CEQA) and within coastal areas of Environmentally Sensitive Habitat Areas through the California Coastal Act. Yet for both acts, we need strong definitions, inventories, and/or maps to clearly support their existence and their rarity.

Another part of our challenge is that previous state government programs, enacted to inventory and map rare communities, have lost their funding and are currently not staffed. No state agency or organization systematically inventories, maps, and analyzes their rarity, and their conservation continues to be seriously threatened. To fulfill this great need, CNPS proposes a multi-step process to inventory, substantiate, map, and track rare communities throughout the state. The main objectives of this process will be to assist local and regional efforts throughout the state, local CNPS chapter efforts, and other local partner organizations.

Objectives to Attain through Existing Funding, New Grant Requests, and Matching Funds:

- Utilize existing methods to identify, sample, and map rare communities
- Identify new processes to document and protect rare communities
- Identify funding for future work in key regions and habitats of the state (e.g., Central Coast and maritime chaparral vegetation, riparian and wetland vegetation)
- Train/assist local CNPS and other partners on using our existing and new processes
- Analyze existing and new data to better describe rare vegetation
- Update rarity ranks of rare, threatened, and endangered vegetation
- Provide useful descriptions and maps of rare vegetation in conjunction with other agencies
- Develop conservation measures and strategies

We expect to attain these goals by taking specific action on several fronts. First, we recently established an advisory panel to establish key methods for identifying candidate rare communities for

assessment and for training for local partners. This panel is also advising us on our current protocols for defensible data collection, acceptable forms of data and rarity ranks for these purposes, and efficient ways to transfer that knowledge into state clearinghouses for rare communities, and into the hands of local efforts to address identification and conservation of particular rare communities.

We expect to rely upon the broad network of local CNPS chapters and affiliates in various regions of the state, and we expect to develop new collaborations to strengthen our efforts. This network will target examples of rare communities for inventory and monitoring, and CNPS staff will provide assistance to assemble existing information on the rare communities prior to further inventory. Using the existing CNPS staff, we will train interested cooperators (including CNPS volunteers) on methods of data collection for identification and classification of rare communities, as well as for mapping and ranking them using standard techniques. CNPS staff will use existing proven standards for sampling, classifying, and mapping plant communities in training the local groups to collect reliable data that is acceptable to state and federal agencies entrusted with the inventory of vegetation and rare elements of biodiversity (e.g., Department of Fish & Games Natural Diversity Database and Vegetation programs).

Finally, actions to enable each local effort to confer our knowledge base and efficient means for conservation will be undertaken. We will take advantage of existing local and regional opportunities based upon effective strategies. The CNPS Conservation program will assist in identifying the best specific strategies on a case-by-case basis. Guidelines already written by the Conservation Program will be used and modified as appropriate (e.g., Wagner 2006³).

Benefits and Outcomes

A focused rare vegetation initiative includes the following benefits and outcomes:

- 1) An established, stream-lined processes to identify/rank rare vegetation (short-term outcome);
- 2) Credible documentation of high priority vegetation for conservation and management purposes (short-term outcome for specific habitats/regions of the state);
- 3) Better information to trustee agencies and land managers on the identity and status of vegetation resources;
- 4) Better information to planners and consultants on protocols for recognizing and protecting rare vegetation resources;
- 5) Improved modeling for rare species distributions, and improved monitoring of site qualities such as invasive species, climate change, changes of integrity and fragmentation in rare vegetation types (longer-term outcome); and
- 6) Effective tools and strategies for conservation of rare vegetation types, which are unique and important to California.

The anticipated outcome of this initiative is the more comprehensive conservation of rare species and natural landscapes under a measurable and well-defined umbrella of vegetation communities.

¹ Sawyer, J. O., T. Keeler-Wolf, and J.M. Evens. 2009. A manual of California Vegetation, 2nd edition. California Native Plant Society, Sacramento, California. 1,300 pp.

² Evens, J.M. 2011. Identification and Mapping of Rare Plant Communities – State of Knowledge and Adoption of Standardized Techniques. Sacramento, California, January 17-19, 2009. Strategies and Solutions, the 2009 CNPS Conservation Conference. Sponsored by California Native Plant Society. Pp. 49-55. ISBN: 13: 978-0-0943460-50-5. Willoughby, J.; Orr, B.; Schierenbeck, K; Jensen, N. (editors).

³ Wagner, K. G. 2006. Protecting rare plant communities using the California Environmental Quality Act (CEQA). *Fremontia* 34: 11–15.

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