



CALIFORNIA  
NATIVE PLANT SOCIETY

April 11, 2012

**DOCKET**

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Dear David:

CNPS appreciates the opportunity to provide the following recommendations regarding the Plan-wide Biological Goals and Objectives (BGOs) being developed hierarchically at the landscape, natural community, and species levels for the DRECP. We see the foundation for meaningful conservation measures within the language of the draft BGO memo, and intend for our recommendations to help build on the current draft. We will be providing additional recommendations before the next DRECP Stakeholder meeting on April 25/26 in Ontario, as we continue to review and consider individual plant species-level BGOs.

Thank you for your leadership during this important process.

Sincerely,

Greg Suba

### **Summary of recommendations**

CNPS makes the following recommendations regarding the development of DRECP BGOs:

1. Incorporate new vegetation map information as soon as possible to improve the accuracy and defensibility of BGOs, reserve design development, least-impact lands assessments, and species habitat models,
2. Conserve all currently documented rare plant occurrences within the Plan area, and most or all of the predicted habitat area modeled for covered plant species to maximize the chance of achieving Plan Goals over time, and while facing significant uncertainties created by;
  - current plant distribution and life history data gaps, and by
  - the Plan's reliance on current biological basemap vegetation data, and
  - unverified suitable habitat models,
3. In order to keep the Plan development process moving forward while refining maps, models, and conservation objective quantities and locations, we recommend the DRECP consultants be directed to follow two concurrent efforts:
  - i. continue work on the current process by focusing on using current map and species model information to develop BGOs for widely-distributed species and flexible BGO targets while,
  - ii. refine species habitat models, and BGO target quantities for natural communities and species that occur in areas where new and refreshed map information is available (west

and central Mojave), and develop language describing how the reassessment of other elements will be accomplished.

4. Include BGO language for each of the eight Natural Communities-level categories (Dune, Forest, Wetland, etc.) to conserve unique and rare vegetation types associated with each Community category,
5. Include lists of the known unique or rare vegetation types associated with each Natural Community category.
6. Standardize references to natural communities, vegetation types, and habitats within the BGO document in order to clarify the meaning and intent of the goals and objectives in which these terms appear. Avoid using these terms interchangeably and in ways that can cloud interpretation of specific goals and objectives.
7. CNPS recommendations for Species-level BGOs are still in progress, and we plan to submit them just before or at our April Stakeholder meeting in Ontario.

#### **Vegetation mapping, vegetation types, and BGOs**

We understand the DRECP consultants are translating vegetation types to conform to the National Vegetation Classification Standards (NVCS 2003) classification hierarchy. We strongly support the use of NVCS classification and nomenclature to ensure management agencies, conservation groups, and developers are using the same language when planning for conservation and development.

We feel that vegetation types represent excellent conservation planning units since vegetation types;

- provide specific habitat requirements for desert wildlife, including Plan covered species,
- can be unique or rare plant assemblages in need of protection and conservation, and
- taken together within the Plan area constitute a mosaic of biodiversity that is able to confer resilience to desert wildlife in direct proportion to the degree of richness conserved through the Plan.

As vegetation types represent the most effective conservation planning unit, the NVCS's vegetation Alliance and Association categories represent the most effective vegetation mapping units to use in conservation planning and reserve design.

The new DRECP vegetation map data will provide Alliance and Association-level resolution. Metadata association with Alliance and Association-level map polygons reflect on-the-ground conditions at a sub-regional to site-specific scale. We strongly recommend using Alliance and Association-level vegetation information (with their associated attribute data) where available in the Plan area as the basic reserve-design planning unit. We also stress that mapped vegetation Alliance and Association polygons are the only tools available to determine accurately how many acres of unique or rare vegetation types occur in the Plan area. Being able to locate and quantify occurrences of

these natural community components using accuracy-assessed maps is essential to developing effective Goals and Objectives at all three BGO levels.

We understand that DRECP vegetation types will be translated to the NVCS's vegetation Group level in areas where no new or revised DRECP mapping has been completed, and that Alliance (and in some places Association) level data will be available for newly mapped west Mojave, and revised central Mojave vegetation map areas. Compared with vegetation Alliances and Associations, the NVCS vegetation Group category is a more coarse designation that represents combinations of diagnostic plant species, composition, and growth forms that reflect ecological conditions occurring at a regional (Plan area-wide) scale at best. We believe that, if necessary, vegetation Groups could be used to develop natural community and species-level BGOs, but only in cases where the interactions of widely distributed, generalist species with other species and ecological processes operate at a regional scale, i.e., in habitats located throughout and across the Plan area. CNPS does not consider the very coarse NVCS vegetation MacroGroup and Division levels, whose diagnostic information defines relationships at subcontinental and continental scales respectively, to be useful in developing Natural Community or Species-level BGOs in the DRECP.

New mapping data can be used to discriminate between lower to higher value land units at a 5 ha (c. 12.4 acre - and in some cases 1 to 2.5 acre units) resolution. Finer map unit resolution, additional land quality indicator attributes available for map units, and a high degree of assessed accuracy of mapped information (80% or greater), will decrease the uncertainty involved in setting conservation target quantities and location which presently plagues Plan development.

**Data gaps and acute uncertainty require precaution and better data**

The ability to develop justifiable DRECP BGOs is hampered by significant population distribution and life history data gaps for covered species and natural communities within the Plan area. This condition is exacerbated by the fact that habitat models generated for covered species have not been groundtruthed. Furthermore, the landcover basemaps for the west Mojave (Landfire and Gap 2008) used to generate species habitat models in this area, are themselves products of modeled extrapolations that have not been verified by on-the-ground surveys.

Until future surveys and research can provide greater understanding of distributions and habitat requirements for plant species in the Plan area, the footprints of solar and wind projects permitted through the Plan should follow a path of least-impact within the Plan area. New and revised mapping information for the west and central Mojave will provide high-resolution data able to refine previous work to identify and map least-impact lands. CNPS recommends focusing a Phase I of development on lands in the west Mojave that have been identified through a revised least-impact analysis based on new mapping information.

To avoid undue delay of Plan development and approval, we understand it will be necessary to begin identifying amounts and locations of acreage targeted for conservation

and development. This can be done at a gross scale by using broad vegetation classifications until finer boundaries and acreage targets can be developed using new vegetation map data. Therefore we recommend prioritizing the development of BGOs for generalist species and Plan-wide ecological processes over the next several weeks while new west Mojave mapping information, and the revised central Mojave mapping information is finalized for use. To keep the DRECP process timeline moving forward effectively, we see value in the REAT technical team and consultants continuing the work on BGOs using Group-level vegetation types for broadly-distributed species whose relationships to vegetation types are based on vegetation structure and similarities in ecological parameters occurring on a subcontinental to regional scale, as in the following example for raptors, agricultural lands, and forested riparian areas.

Example: Objective RAPT 1.5 (p.30): "Protect \_acres of agriculture in the... West Mojave within three miles of forested riparian areas, or other stands of deciduous trees suitable for nesting white-tailed kite and Swainson's hawk."

CNPS strongly recommends assessing and setting BGO target acreage quantities and locations in west and central Mojave areas for specialist and narrowly distributed species, and for all natural communities based on the new Alliance and Association vegetation map data as soon as it becomes available.

### **Providing certainty, when uncertain, requires flexibility**

Conservation BGOs targets based on current best information are limited in their ability to provide certainty of conservation success because of the uncertainties described previously. Because baseline data deficiencies are coupled with an inflexible and aggressive Plan development timeline, the Plan must incorporate objectives that provide for flexibility along with certainty. This challenge could be met on one level by following a phased or sequential approach to Plan implementation as proposed by the conservation NGO stakeholders. At a more detailed level, BGOs based on current landcover basemaps and DRECP predicted habitat models could provide future flexibility in the Plan by developing vegetation conservation targets that include, but are not limited to, the following elements:

- developing BGOs that conserve 100% of known occurrences of covered plant species within the Plan area at the time of Plan approval;
- developing BGOs that conserve 90-100% of predicted habitat area (in acres) identified by DRECP consultant-generated species habitat models, where areas conserved based on consultant's models are expandable and proportional as follows;
  - during the term of the Plan, percentages of area conserved are reassessed when newly discovered locations of vegetation types and / or species covered in the Plan change the quantity and/or location of distribution area calculated at the time of Plan approval,
  - if during the term of the Plan, the area of species / vegetation type distribution

increases due to new discoveries, the percentage of area to be conserved remains the same as at Plan approval, and so the number of acres to be conserved will increase in proportion to the increase in calculated species distribution area,

For example: According to BGOs for plant species X, 95% of 100 modeled habitat acres (95 acres) are to be conserved at the time of Plan approval. 10 years later, species X has been located in an additional 100 acres. Now 95% of 200 acres (190 acres) are to be conserved for species X. What we want to avoid is setting a 95-acre cap on species X conservation acres in 2013, and then by 2023 discover, and potentially destroy, 100 acres of newly discovered species X locations that remain unprotected in the Plan area. This situation would be made worse if species X were found not to occur in most or all of the original 100 modeled habitat acres.

- at any given time during the term of the Plan, the absolute number of acres conserved never decreases below the quantity set at the time of Plan approval, i.e., a minimum target acreage is set as the target percentage of known distribution area at the time of Plan approval,
  - percentages remain fixed and acreages expand proportionally to known area as described above unless / until acreage quantities are recognized as meeting or exceeding the extent necessary to protect and manage viable self-sustaining populations in the Plan area.
- developing species-specific BGOs that ensure the conservation of populations across the full extent of the species' range within the Plan area;
  - developing criteria to prioritize the protection of new discoveries of vegetation types and / or covered species locations made after Plan approval and during the term of the Plan;
  - incorporating explicit language in natural community / species BGOs that allows for reassessment and recalculation of conservation targets based on new data;

CNPS recommends that later drafts of the DRECP incorporate language in the NCCP monitoring and adaptive management plans that specify procedures for the reassessment and recalculation of conservation targets for natural community / species based on new data gathered during the term of the Plan. Eventually, Plan participants will need to identify mechanisms to ensure adequate funding to carry out the conservation actions and adaptive management measures identified in the Plan.

### **BGOs for rare or unique vegetation types**

CNPS recommends adding new language or modifying current language in Natural Community-level Goals and Objectives to include specific language to conserve representative examples of rare or unique vegetation types within the DRECP reserve system. There are rare or unique vegetation Alliances and Associations associated with

each BGO Community-level category. We further recommend including a list of rare or unique vegetation types known to occur in the Plan area.

The California Department of Fish & Game (DFG) has assigned Natural Heritage rarity ranks of S1-S5 for rare or unique vegetation types, defined in terms of NVCS vegetation Alliances, Associations, or Special stands, that occur in California.

We have attached an edited version of the draft BGO memo containing our suggested modified language regarding the conservation of rare vegetation types, and additional lists of rare vegetation Alliances organized under each of the following BGO Communities:

- Dune Community
- Forest Community
- Grassland Community
- Riparian Community
- Rocky, Barren, and Unvegetated Community
- Scrub Chaparral Community
- Wetland Community
- Woodland Community

Also attached is an Excel Spreadsheet containing a list of rare or unique (S1-S3 ranked) vegetation Alliances and Associations that occur in the Plan area. Each rare type is identified by common name and scientific name, and includes NVCS codes and names, and state and global Natural Heritage ranks (S/G ranks). This list is based on information available in the DFG natural communities list<sup>1</sup>, which addresses high ranking of vegetation types, and *A Manual of California Vegetation, 2nd Edition* (Sawyer et al. 2009).

### **Habitat, natural community, and vegetation type**

We recommend using standardized references to *natural communities*, *vegetation types*, and *habitats* within the BGO document, to clarify the meaning and intent of the goals and objectives in which these terms appear. Avoid using these terms interchangeably and in ways that can cloud interpretation of specific goals and objectives.

The current draft BGO memo uses the terms *habitat*, *natural community*, *natural habitat*, *vegetation type*, *vegetation community*, *plant community*, *rare association and alliances*, and *rare habitat*, at times interchangeably, throughout the document. CNPS recommends using the following convention for using the terms *natural community*, *vegetation type*, and *habitat*.

A *vegetation type* can be defined in many ways - all of which refer generally to a definable assemblage of plants. Using the NVCS, a vegetation type can be described at different hierarchical levels, i.e., Mojave-Sonoran Desert Scrub (MacroGroup), Mojavean

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<sup>1</sup> (online at [http://www.dfg.ca.gov/biogeodata/vegcamp/natural\\_comm\\_list.asp](http://www.dfg.ca.gov/biogeodata/vegcamp/natural_comm_list.asp))

upper desert scrub (Group), and *Yucca brevifolia* (Joshua tree) Alliance, are all NVCS vegetation types where Joshua trees represent a component of the assemblage.

A *natural community* is the sum of organisms living together and linked together by their effects on one another and their responses to the environment they share. A natural community includes biotic and abiotic constituents (species, ecological processes, etc.) including one or more *vegetation types*.

A *habitat* is a general term referring to the locality, site and particular type of local environment occupied by an organism or community. Habitats are the places natural communities and vegetation types occur.

Clarity and consistency in how the Plan employs terms that refer to and discriminate between the place (habitat), the sum of all things that live, operate, and interact in the place (community), and the quality of what lives, operates, etc. in the place (natural community) will prevent confusion among those trying to quantify areas labeled with these terms today, and by those interpreting and implementing the Plan in the future.

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S1-S3 Mojave Alliances & Associations arranged by DRECP BGO general Community category								
Lifeform	DRECP BGO Category	Alliance ScientificName	CommonName	Title	Macrogroup	MGcode	Global	State
herb	<b>Dune</b>	Dicoria canescens-Abronia villosa	Desert dunes	Alliance	North American Warm Semi-Desert Cliff, Scree & Rock Vegetation	MG117.	G3	S2
herb	<b>Dune</b>	Swallenia alexandrae	Patches of Eureka Valley dune grass	Special Stands	North American Warm Semi-Desert Cliff, Scree & Rock Vegetation	MG117.	G1	S1
herb	<b>Dune</b>	Panicum urvilleanum	Desert panic grass patches	Alliance	North American Warm Semi-Desert Cliff, Scree & Rock Vegetation	MG117.	G3	S1
shrub	<b>Dune</b>	Petalonyx thurberi	Thurber's sandpaper plant patches	Provisional Alliance	North American Warm Semi-Desert Cliff, Scree & Rock Vegetation	MG117.	GNR	S2?
tree	<b>Forest Community</b>	Pinus longaeva	Bristlecone pine woodland	Alliance	Rocky Mountain Subalpine and High Montane Conifer Forest	MG020.	G4	S2
tree	<b>Forest Community</b>	Pinus flexilis	Limber pine woodland	Alliance	Rocky Mountain Subalpine and High Montane Conifer Forest	MG020.	G5	S3
tree	<b>Forest Community</b>	Abies concolor	White fir forest	Alliance	Californian-Vancouverian Montane and Foothill Forest	MG023.	G5	S4 (some associations are rare)
herb	<b>Grassland</b>	Lasthenia californica-Plantago erecta-Vulpia microstachys	California goldfields-Dwarf plantain-Six-weeks fescue flower fields	Alliance	California Annual & Perennial Grassland	MG045.	G4	S4 (some associations are rare)
herb	<b>Grassland</b>	Eschscholzia (californica)	California poppy fields	Alliance	California Annual & Perennial Grassland	MG045.	G4	S4 (some associations are rare)
herb	<b>Grassland</b>	Nassella cernua	Nodding needle grass grassland	Provisional Alliance	California Annual & Perennial Grassland	MG045.	G4	S3?
herb	<b>Grassland</b>	Nassella pulchra	Purple needle grass grassland	Alliance	California Annual & Perennial Grassland	MG045.	G4	S3?
herb	<b>Grassland</b>	Poa secunda	Curly blue grass grassland	Alliance	Western North American Temperate Grassland and Meadow	MG048.	G4	S3?
herb	<b>Grassland</b>	Aristida purpurea	Purple three-awn meadows	Provisional Alliance	Western North American Temperate Grassland and Meadow	MG048.	G4	S3?
shrub	<b>Riparian</b>	Betula occidentalis	Water birch thicket	Alliance	Western Cordilleran montane-boreal riparian scrub & forest	MG034.	G4	S2
shrub	<b>Riparian</b>	Fallugia paradoxa	Apache plume wash scrub	Provisional Alliance	Southwestern North American Riparian, Flooded and Swamp Forest	MG036.	GNR	S2?
tree	<b>Riparian</b>	Salix gooddingii	Black willow thickets	Alliance	Warm Mediterranean & Desert Riparian, Flooded & Swamp Forest	MG036.	G4	S3
shrub	<b>Riparian</b>	Baccharis sergiloides	Broom baccharis thickets	Alliance	Southwestern North American Riparian, Flooded and Swamp Forest	MG036.	G4	S3
tree	<b>Riparian</b>	Washingtonia filifera	California fan palm oasis	Alliance	Warm Mediterranean & Desert Riparian, Flooded & Swamp Forest	MG036.	G3	S3
shrub	<b>Riparian</b>	Forestiera pubescens	Desert olive patches	Alliance	Southwestern North American Riparian, Flooded and Swamp Forest	MG036.	G3	S2
shrub	<b>Riparian</b>	Baccharis emoryi	Emory's baccharis thickets	Provisional Alliance	Southwestern North American Riparian, Flooded and Swamp Forest	MG036.	G3	S2?
tree	<b>Riparian</b>	Populus fremontii	Fremont cottonwood forest	Alliance	Warm Mediterranean & Desert Riparian, Flooded & Swamp Forest	MG036.	G4	S3
shrub	<b>Riparian</b>	Baccharis salicifolia	Mulefat thickets	Alliance	Southwestern North American Riparian, Flooded and Swamp Forest	MG036.	G5	S4 (some associations are rare)
tree	<b>Riparian</b>	Salix laevigata	Red willow thickets	Alliance	Warm Mediterranean & Desert Riparian, Flooded & Swamp Forest	MG036.	G3	S3
shrub	<b>Riparian</b>	Pluchea sericea	Arrow weed thickets	Alliance	North American Warm-Desert Xero-Riparian	MG092.	G3	S3
shrub	<b>Riparian</b>	Ericameria paniculata	Black-stem rabbitbrush scrub	Alliance	North American Warm-Desert Xero-Riparian	MG092.	G4	S3
tree	<b>Riparian</b>	Parkinsonia florida-Olneya tesota	Blue palo verde-Ironwood woodland	Alliance	North American Warm-Desert Xero-Riparian	MG092.	G4	S3
shrub	<b>Riparian</b>	Ephedra californica	California joint fir scrub	Alliance	North American Warm-Desert Xero-Riparian	MG092.	G3	S3
shrub	<b>Riparian</b>	Castela emoryi	Crucifixion thorn stands	Special Stands	North American Warm-Desert Xero-Riparian	MG092.	G2	S1
shrub	<b>Riparian</b>	Prunus fasciculata	Desert almond scrub	Alliance	North American Warm-Desert Xero-Riparian	MG092.	G4	S3
shrub	<b>Riparian</b>	Hyptis emoryi	Desert lavender scrub	Alliance	North American Warm-Desert Xero-Riparian	MG092.	G4	S3
tree	<b>Riparian</b>	Chilopsis linearis	Desert willow woodland	Alliance	North American Warm-Desert Xero-Riparian	MG092.	G4	S3
tree	<b>Riparian</b>	Prosopis glandulosa	Mesquite bosque, mesquite thicket	Alliance	North American Warm-Desert Xero-Riparian	MG092.	G5	S3
shrub	<b>Riparian</b>	Viguiera reticulata	Net-veined goldeneye scrub	Alliance	North American Warm-Desert Xero-Riparian	MG092.	G3	S3?

Lifeform	DRECP BGO Category	Alliance ScientificName	CommonName	Title	Macrogroup	MGcode	Global	State
shrub	<b>Riparian</b>	Lepidospartum squamatum	Scale broom scrub	Alliance	North American Warm-Desert Xero-Riparian	MG092.	G3	S3 (some associations are rare - G1 S1.1)
tree	<b>Riparian</b>	Prosopis pubescens	Screwbean mesquite bosques	Alliance	North American Warm-Desert Xero-Riparian	MG092.	G3	S2
tree	<b>Riparian</b>	Psoralethamnus spinosus	Smoke tree woodland	Alliance	North American Warm-Desert Xero-Riparian	MG092.	G4	S3
shrub	<b>Rocky</b>	Ephedra funerea	Death Valley joint fir scrub	Provisional Alliance	North American Warm Semi-Desert Cliff, Scree & Rock Vegetation	MG117.	G3?	S2?
herb	<b>Rocky</b>	Geraea canescens-Chorizanthe rigida	Hairy desert-sunflower - devil's spineflower annual fields	Provisional Alliance	North American Warm Semi-Desert Cliff, Scree & Rock Vegetation	MG117.	GNR	S4? (some associations are rare)
shrub	<b>Rocky</b>	Peucephyllum schottii	Schott's pygmycedar scrub	Provisional Alliance	North American Warm Semi-Desert Cliff, Scree & Rock Vegetation	MG117.	GNR	S2?
sparse shrub	<b>Rocky</b>	Sparsely vegetated playa	Sparsely vegetated playa	Provisional Alliance	North American Warm Semi-Desert Cliff, Scree & Rock Vegetation	MG117.	GNR	S3
shrub	<b>SCCC</b>	Arctostaphylos glauca	Bigberry manzanita chaparral	Alliance	California Chaparral	MG043.	G4	S4 (some associations are rare)
shrub	<b>SCCC</b>	Quercus chrysolepis	Canyon live oak chaparral	Alliance	California Chaparral	MG043.	G3	S3
shrub	<b>SCCC</b>	Ericameria linearifolia	Narrowleaf goldenbush scrub	Provisional Alliance	California Coastal Scrub	MG044.	G3	S3?
shrub	<b>SCCC</b>	Eriogonum wrightii	Wright's buckwheat patches	Alliance	California Coastal Scrub	MG044.	G3	S3
shrub	<b>SCCC</b>	Ceanothus greggii	Cup leaf ceanothus chaparral	Alliance	Warm Interior Chaparral	MG051.	G4	S3
shrub	<b>SCCC</b>	Quercus turbinella	Sonoran live oak scrub	Alliance	Warm Interior Chaparral	MG051.	G4	S1
shrub	<b>SCCC</b>	Arctostaphylos patula	Green leaf manzanita chaparral	Alliance	Cold Interior Chaparral	MG052.	G5	S4 (some associations are rare)
shrub	<b>SCCC</b>	Atriplex polycarpa	Allscale scrub	Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	G5	S4 (some associations are rare - S2 S1, e.g., in the Central Valley)
shrub	<b>SCCC</b>	Tidestromia oblongifolia	Arizona honey sweet sparse scrub	Provisional Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	G3	S3
herb	<b>SCCC</b>	Pleuraphis rigida	Big galleta shrub-steppe	Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	G3	S2
shrub	<b>SCCC</b>	Amphipappus fremontii	Chaffbush carbonate scrub	Provisional Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	GNR	S2?
shrub	<b>SCCC</b>	Lycium cooperi	Cooper's boxthorn scrub	Provisional Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	GNR	S2?
shrub	<b>SCCC</b>	Larrea tridentata-Ambrosia dumosa	Creosote bush-white burr sage scrub	Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	G5	S5 (associations with Pleuraphis rigida and those with a diverse shrub layer are rare - G1 S1)
shrub	<b>SCCC</b>	Senna armata	Desert senna	Provisional Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	GNR	S3?
shrub	<b>SCCC</b>	Parkinsonia microphylla	Foothill palo verde desert scrub	Provisional Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	G4	S1
shrub	<b>SCCC</b>	Ziziphus obtusifolia	Graythorn patches	Special Stands	Mojave-Sonoran Semi-Desert Scrub	MG088.	G2	S2?
shrub	<b>SCCC</b>	Menodora spinescens	Greenfire scrub	Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	G4	S3
shrub	<b>SCCC</b>	Tetracoccus hallii	Hall's shrubby-spurge patches	Provisional Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	G2	S1
shrub	<b>SCCC</b>	Eriogonum heermannii	Heermann's buckwheat patches	Provisional Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	G2	S2?
shrub	<b>SCCC</b>	Simmondsia chinensis	Jojoba scrub	Provisional Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	G4	S3?
tree	<b>SCCC</b>	Yucca brevifolia	Joshua tree woodland	Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	G4	S3
shrub	<b>SCCC</b>	Yucca schidigera	Mojave yucca scrub	Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	G4	S4 (some associations are rare - G2 S2.2)
shrub	<b>SCCC</b>	Viguiera parishii	Parish's goldeneye scrub	Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	G4	S4 (some associations are rare)
shrub	<b>SCCC</b>	Hecastocleis shockleyi	Prickleleaf scrub	Provisional Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	GNR	S2?
shrub	<b>SCCC</b>	Bebbia juncea	Sweetbush wash scrub	Provisional Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	GNR	S3?
shrub	<b>SCCC</b>	Cylindropuntia bigelovii	Teddy bear cholla patches	Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	G4	S3
shrub	<b>SCCC</b>	Mortonia utahensis	Utah mortonia carbonate scrub	Provisional Alliance	Mojave-Sonoran Semi-Desert Scrub	MG088.	GNR	S2?
shrub	<b>SCCC</b>	Encelia virginensis	Virgin River brittle brush scrub	Alliance	North American Warm-Desert Xero-Riparian	MG092.	G4	S3
shrub	<b>SCCC</b>	Atriplex canescens	Fourwing saltbush scrub	Alliance	Great Basin Saltbrush Scrub	MG093.	G5	S4 (some associations are rare - S2, e.g., in the central Coast Ranges)
shrub	<b>SCCC</b>	Grayia spinosa	Spiny hop sage scrub	Alliance	Great Basin Saltbrush Scrub	MG093.	G5	S3
shrub	<b>SCCC</b>	Gutierrezia sarothrae	Broom snake weed scrub	Provisional Alliance	Cool Semi-desert wash and disturbance scrub	MG095.	G3	S3
shrub	<b>SCCC</b>	Salvia dorrii	Desert purple sage scrub	Alliance	Cool Semi-desert wash and disturbance scrub	MG095.	G3	S2
shrub	<b>SCCC</b>	Ericameria parryi	Parry's rabbitbrush scrub	Alliance	Cool Semi-desert wash and disturbance scrub	MG095.	G4	S3
sparse shrub	<b>SCCC</b>	Sparsely vegetated desert wash	Sparsely vegetated desert wash	Provisional Alliance	Cool Semi-desert wash and disturbance scrub	MG095.	GNR	S3
shrub	<b>SCCC</b>	Ambrosia eriocentra	Woolly bursage wash scrub	Provisional Alliance	Cool Semi-desert wash and disturbance scrub	MG095.	GNR	S3?

Lifeform	DRECP BGO Category	Alliance ScientificName	CommonName	Title	Macrogroup	MGcode	Global	State
shrub	<b>SCCC</b>	Chrysothamnus viscidiflorus	Green rabbitbrush scrub	Provisional Alliance	Western North America Tall Sage Shrubland and Steppe	MG096.	GNR	S3?
shrub	<b>SCCC</b>	Artemisia nova	Black sagebrush scrub	Alliance	Western North America Dwarf Sage Shrubland and Steppe	MG097.	G4	S3
shrub	<b>SCCC</b>	Lycium andersonii	Anderson's boxthorn scrub	Alliance	Mojave-Sonoran Semi-Desert Scrub	MG098.	G4	S3
shrub	<b>SCCC</b>	Purshia tridentata	Bitter brush scrub	Alliance	Inter-Mountain Dry Shrubland and Grassland	MG098.	G4	S3
herb	<b>SCCC</b>	Achnatherum speciosum	Desert needlegrass grassland	Alliance	Inter-Mountain Dry Shrubland and Grassland	MG098.	G4	S2
herb	<b>SCCC</b>	Achnatherum hymenoides	Indian rice grass grassland	Alliance	Inter-Mountain Dry Shrubland and Grassland	MG098.	G4	S1
herb	<b>SCCC</b>	Pleuraphis jamesii	James' galleta shrub-steppe	Alliance	Inter-Mountain Dry Shrubland and Grassland	MG098.	G3	S2
shrub	<b>SCCC</b>	Nolina (bigelovii, parryi)	Nolina scrub	Alliance	Inter-Mountain Dry Shrubland and Grassland	MG098.	G3	S2
shrub	<b>SCCC</b>	Cercocarpus intricatus	Small leaf mountain mahogany scrub	Alliance	Inter-Mountain Dry Shrubland and Grassland	MG098.	G4	S3?
shrub	<b>SCCC</b>	Purshia stansburiana	Stansbury cliff rose scrub	Alliance	Inter-Mountain Dry Shrubland and Grassland	MG098.	G3	S3
shrub	<b>SCCC</b>	Krascheninnikovia lanata	Winterfat scrubland	Alliance	Inter-Mountain Dry Shrubland and Grassland	MG098.	G4	S2
herb	<b>Wetland</b>	Typha (angustifolia, domingensis, latifolia)	Cattail marshes	Alliance	Western North American Freshwater Marsh	MG073.	G5	S5 (some associations are rare)
herb	<b>Wetland</b>	Muhlenbergia rigens	Deer grass beds	Alliance	Western North America Wet Meadow and Low Shrub Carr	MG075.	G3	S2?
herb	<b>Wetland</b>	Bolboschoenus maritimus	Salt marsh bulrush marshes	Alliance	North American Pacific Coastal Salt Marsh	MG081.	G4	S3
herb	<b>Wetland</b>	Sesuvium verrucosum	Western sea-purslane marshes	Alliance	North American Pacific Coastal Salt Marsh	MG081.	G3?	S2
shrub	<b>Wetland</b>	Sarcobatus baileyi	Bailey's greasewood scrub	Provisional Alliance	Cool Semi-Desert Alkali-Saline Wetlands	MG082.	G5	S1?
herb	<b>Wetland</b>	Spartina gracilis	Alkali cordgrass marsh	Alliance	Warm Semi-Desert/Mediterranean Alkali-Saline Wetland	MG083.	GNR	S1
herb	<b>Wetland</b>	Sporobolus airoides	Alkali sacaton grassland	Alliance	Warm Semi-Desert/Mediterranean Alkali-Saline Wetland	MG083.	G4	S2
herb	<b>Wetland</b>	Schoenoplectus americanus	American bulrush marsh	Alliance	Warm Semi-Desert/Mediterranean Alkali-Saline Wetland	MG083.	G5	S3
shrub	<b>Wetland</b>	Suaeda moquinii	Bush seepweed scrub	Alliance	Warm Semi-Desert/Mediterranean Alkali-Saline Wetland	MG083.	G5	S3
herb	<b>Wetland</b>	Juncus cooperi	Cooper's rush marsh	Alliance	Warm Semi-Desert/Mediterranean Alkali-Saline Wetland	MG083.	G3	S3
shrub	<b>Wetland</b>	Allenrolfea occidentalis	Iodine bush scrub	Alliance	Warm Semi-Desert/Mediterranean Alkali-Saline Wetland	MG083.	G4	S3
herb	<b>Wetland</b>	Arthrocnemum subterminale	Parish's glasswort patches	Alliance	Warm Semi-Desert/Mediterranean Alkali-Saline Wetland	MG083.	G4	S2
shrub	<b>Wetland</b>	Atriplex spinifera	Spinescale scrub	Alliance	Warm Semi-Desert/Mediterranean Alkali-Saline Wetland	MG083.	G3	S3
herb	<b>Wetland</b>	Anemopsis californica	Yerba mansa meadows	Alliance	Warm Semi-Desert/Mediterranean Alkali-Saline Wetland	MG083.	G3	S2?
herb	<b>Wetland</b>	Ruppia (cirrhosa, maritima)	Ditch-grass or widgeon-grass mats	Alliance	Temperate Pacific Intertidal Shore	MG106.	G4?	S2
tree	<b>Woodland</b>	Quercus chrysolepis	Canyon live oak forest	Alliance	California Forest and Woodland	MG009.	G5	S5 (some associations are rare)
shrub	<b>Woodland</b>	Quercus palmeri	Palmer oak chaparral	Alliance	California Forest and Woodland	MG009.	G3	S2?
tree	<b>Woodland</b>	Pinus monophylla-(Juniperus osteosperma)	Singleleaf Pinyon (- Utah Juniper)	Alliance	Intermountain Singleleaf Pinyon-Western Juniper Woodland	MG026.	G5	S4 (some associations are rare)
tree	<b>Woodland</b>	Pinus monophylla	Singleleaf pinyon woodlands	Alliance	Intermountain Singleleaf Pinyon-Western Juniper Woodland	MG026.	G5	S4 (some associations are rare)
tree	<b>Woodland</b>	Pinus edulis	Two-needle pinyon stands	Special Stands	Intermountain Singleleaf Pinyon-Western Juniper Woodland	MG026.	G4	S2?
tree	<b>Woodland</b>	Juniperus osteosperma	Utah juniper woodland	Alliance	Intermountain Singleleaf Pinyon-Western Juniper Woodland	MG026.	G5	S3