

Appendix D Ranked Lists of Vegetation Communities (Macrogroups) by Ecoregion

A systematic method was employed to identify and rank vegetation communities (macrogroups) for consideration as priority conservation targets in the State Wildlife Action Plan 2015 Update. Within each terrestrial conservation unit, conservation targets were selected, first based on analysis of three criteria: endemism (Table D-1), total biodiversity, and vulnerability (rarity), and then considered in context of need, based on pressures. Each vegetation community (macrogroup) was evaluated based on these criteria and ranked according to its score. Spreadsheets with lists of macrogroups, sorted by rank were provided to each team working in each conservation unit to identify the priority targets, for which conservations strategies would be developed.

In most cases one or more of the top ranked macrogroups were selected as the targets. In some cases (Modoc Plateau, Mojave Desert, Mono, Northwest Basin and Range, and Sonoran Desert), in addition to consideration of the ranking, the team applied an additional consideration of "pressure." If there were known pressures to a lower ranked macrogroup, and those pressures could be reduced through development and implementation of a focused conservation strategy, then that macrogroup could be selected as a target. Similarly, if there were known existing conservation efforts already in place that were focused on the macrogroup, it is possible this macrogroup was skipped in favor of one that had greater need. Tables D-2 through D-20 show the combined target rank for each macrogroup by ecoregion and which macrogroups were selected as priorities (shown in bold).

Table D-21 provides a list of all macrogroups in California, with the U.S. National Vegetation Classification macrogroup name and common name used in California, ecological description, and relationship to California Wildlife Habitat Relationship (CWHR) classification. In addition, the provinces where each community occurs and the provinces where the community has been identified as a priority target are identified.

Ranking Method

- The target rank is the sum of biodiversity, vulnerability, and endemism ranks. The smaller number is a "better" rank (i.e., the target contains more biodiversity, vulnerability, and endemism).
- Biodiversity, vulnerability and endemism were ranked from 1 - 5 in quantiles, representing the top 1/5 (rank 1), the second fifth (rank 2), and the bottom 1/5 (rank 5).
- Biodiversity ranks and endemism ranks were derived from CWHR queries that listed the total number of native species (i.e., biodiversity) and the number of endemic species by CWHR type, which was then cross-walked to the macrogroups. Vulnerability ranks were derived from calculating the inverse of the area each macrogroup occupies within each ecoregion times total biodiversity. This identified those macrogroups supporting the most species but least available in the ecoregion.

Table D-1 Endemism Rule	
Proportion of North American range or population within California	Score
Mammals	
<i>Percentage of Entire Range within California (EN).</i> This criterion measures what proportion of the entire geographic range of a taxon occurs within California. Taxa mostly or entirely restricted to California are considered of greater concern in California than are taxa with only a small proportion of their range in the state. The teams relied on range maps in Hall (1981) to approximate a taxon’s geographic range unless better alternatives were available.	
100% (endemic)	10
80% - 100%	7.5
50% - 80%	5
20% - 50%	2.5
< 20%	0
Birds	
<i>Percentage of Entire Range within California (EN).</i> This criterion measures what proportion of a taxon’s North American range or population occurs within California. Taxa with a high proportion of their range or population within California are considered of greater concern than taxa with only a small proportion of their range or population in the state.	
100% (endemic)	10
>80% but <100% (near-endemic)	7.5
>50%-80%	5
>20%-50%	2.5
<20%	0
Amphibians and Reptiles	
<i>Percentage of a species’ entire range that occurs in California (EN).</i> Endemism determines the extent to which conservation actions in California are likely to impact the taxon’s persistence range wide. From another perspective, this is a way of measuring California’s responsibility to conserve individual species. Taxa whose range is completely, or nearly completely, contained within California’s borders are in need of greater conservation consideration from our state than taxa whose range only extends peripherally into California. We recognize that this presumes appropriate conservation measures are also being implemented in other areas of North America (including Mexico and Canada), and that such conservation may be more completely, or less completely, implemented in California. We again made this measure discrete in recognition of the inherent uncertainty in our knowledge of range limits.	
100% (endemic)	10
>66-99%	7
33-66	3
<33%	0

North Coast and Klamath Province

Table D-2 Northern California Coast Ecoregion		
USNVC Macrogroup	Common Name	Target Rank ¹
Vancouverian Flooded and Swamp Forest*	North Coastal and Montane Riparian Forest and Woodland	3
California Forest and Woodland	California Foothill and Valley Forests and Woodlands	3
Californian–Vancouverian Montane and Foothill Forest	North Coastal Mixed Evergreen and Montane Conifer Forests	3
Warm Southwest Riparian Forest	American Southwest Riparian Forest and Woodland	6
Vancouverian Rainforest*	Pacific Northwest Conifer Forests	7
Western North American Freshwater Aquatic Vegetation	Freshwater Aquatic Vegetation	8
Western North American Freshwater Marsh*	Freshwater Marsh	8
Western North America Wet Meadow and Low Shrub Carr	Wet Mountain Meadow	9
Vancouverian Lowland Grassland and Shrubland	North Coast Deciduous Scrub and Terrace Prairie	9
Western North American Temperate Grassland and Meadow	Western Upland Grasslands	10
North American Pacific Coastal Salt Marsh	Salt Marsh	13
California Annual and Perennial Grassland	California Grassland and Flowerfields	13
California Coastal Scrub	Coastal Sage Scrub	13
Vancouverian Coastal Dune and Bluff*	Coastal Dune and Bluff Scrub	13
California Chaparral	Chaparral	14
Introduced North American Mediterranean woodland and forest	Non-Native Forest and Woodlands	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Table D-3 Northern California Coast Ranges Ecoregion		
USNVC Macrogroup	Common Name	Target Rank ¹
California Forest and Woodland	California Foothill and Valley Forests and Woodlands	3
Warm Southwest Riparian Forest	American Southwest Riparian Forest and Woodland	4
Western North American Temperate Grassland and Meadow	Western Upland Grasslands	4
California Annual and Perennial Grassland	California Grassland and Flowerfields	4
California Cliff, Scree, and Other Rock Vegetation	California Foothill and Coastal Rock Outcrop Vegetation	7
Temperate Pacific Intertidal Shore	Brackish (Estuarine) Submerged Aquatic Vegetation	7
Western North American Freshwater Aquatic Vegetation	Freshwater Aquatic Vegetation	7
Western North American Freshwater Marsh	Freshwater Marsh	7
Vancouverian Flooded and Swamp Forest*	North Coastal and Montane Riparian Forest and Woodland	8
Vancouverian Rainforest	Pacific Northwest Conifer Forests	8
Californian–Vancouverian Montane and Foothill Forest	North Coastal Mixed Evergreen and Montane Conifer Forests	8
California Chaparral	Chaparral	9
California Coastal Scrub	Coastal Sage Scrub	10

Table D-3 Northern California Coast Ranges Ecoregion		
USNVC Macrogroup	Common Name	Target Rank¹
Western North American Montane-Subalpine Wet Shrubland and Wet Meadow	Mountain Riparian Scrub and Wet Meadow	11
Western North America Wet Meadow and Low Shrub Carr	Wet Mountain Meadow	11
Cool Interior Chaparral	Montane Chaparral	13
Western Cordilleran Montane Shrubland and Grassland	Montane Upland Deciduous Scrub	13
Western North America Dwarf Sage Shrubland and Steppe	Great Basin Dwarf Sagebrush Scrub	15
Inter-Mountain Dry Shrubland and Grassland	Great Basin Upland Scrub	15
Rocky Mountain Subalpine and High Montane Conifer Forest	Subalpine Aspen Forests and Pine Woodlands	15
Vancouverian Subalpine Forest*	Pacific Northwest Subalpine Forest	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Table D-4 Northern California Interior Coast Ranges Ecoregion		
USNVC Macrogroup	Common Name	Target Rank¹
California Forest and Woodland*	California Foothill and Valley Forests and Woodlands	4
Western North American Temperate Grassland and Meadow	Western Upland Grasslands	5
Western North American Freshwater Marsh	Freshwater Marsh	6
California Annual and Perennial Grassland	California Grassland and Flowerfields	6
Warm Southwest Riparian Forest	American Southwest Riparian Forest and Woodland	6
Vancouverian Flooded and Swamp Forest	North Coastal and Montane Riparian Forest and Woodland	9
Western North America Wet Meadow and Low Shrub Carr	Wet Mountain Meadow	10
Californian-Vancouverian Montane and Foothill Forest	North Coastal Mixed Evergreen and Montane Conifer Forests	12
California Coastal Scrub	Coastal Sage Scrub	13
Western Cordilleran Montane Shrubland and Grassland	Montane Upland Deciduous Scrub	15
California Chaparral	Chaparral	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Table D-5 Klamath Ecoregion		
USNVC Macrogroup	Common Name	Target Rank¹
Vancouverian Rainforest	Pacific Northwest Conifer Forests	3
Western North American Temperate Grassland and Meadow*	Western Upland Grasslands	3
Western North American Montane/Boreal Peatland*	Fen (Wet Meadow)	3
Warm Southwest Riparian Forest	American Southwest Riparian Forest and Woodland	4
Vancouverian Flooded and Swamp Forest	North Coastal and Montane Riparian Forest and Woodland	4
Western North American Montane-Subalpine Wet Shrubland and Wet Meadow*	Mountain Riparian Scrub and Wet Meadow	5
Western North America Wet Meadow and Low Shrub Carr*	Wet Mountain Meadow	5
Californian–Vancouverian Montane and Foothill Forest	North Coastal Mixed Evergreen and Montane Conifer Forests	6
Western North American Freshwater Aquatic Vegetation	Freshwater Aquatic Vegetation	7
Western North American Freshwater Marsh	Freshwater Marsh	7
California Annual and Perennial Grassland	California Grassland and Flowerfields	8
Rocky Mountain Subalpine and High Montane Conifer Forest*	Subalpine Aspen Forests and Pine Woodlands	10
California Cliff, Scree, and Other Rock Vegetation	California Foothill and Coastal Rock Outcrop Vegetation	10
Inter-Mountain Dry Shrubland and Grassland	Great Basin Upland Scrub	10
Vancouverian Subalpine Forest	Pacific Northwest Subalpine Forest	11
California Coastal Scrub	Coastal Sage Scrub	11
Vancouverian Alpine Scrub, Forb Meadow, and Grassland*	Alpine Vegetation	13
Cool Interior Chaparral	Montane Chaparral	13
Western Cordilleran Montane Shrubland and Grassland*	Montane Upland Deciduous Scrub	13
North American Pacific Coastal Salt Marsh	Salt Marsh	14
Western North America Dwarf Sage Shrubland and Steppe	Great Basin Dwarf Sagebrush Scrub	15
Western North America Tall Sage Shrubland and Steppe	Big Sagebrush Scrub	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Cascades and Modoc Plateau Province

Table D-6 Southern Cascades Ecoregion		
USNVC Macrogroup	Common Name	Target Rank ¹
Western North American Montane/Boreal Peatland	Fen (Wet Meadow)	3
Western North American Temperate Grassland and Meadow*	Western Upland Grasslands	3
California Forest and Woodland	California Foothill and Valley Forests and Woodlands	3
Western North American Montane-Subalpine Wet Shrubland and Wet Meadow	Mountain Riparian Scrub and Wet Meadow	5
Western North America Wet Meadow and Low Shrub Carr	Wet Mountain Meadow	5
Vancouverian Flooded and Swamp Forest	North Coastal and Montane Riparian Forest and Woodland	5
Californian-Vancouverian Montane and Foothill Forest*	North Coastal Mixed Evergreen and Montane Conifer Forests	6
Western North American Freshwater Aquatic Vegetation	Freshwater Aquatic Vegetation	7
Western North American Freshwater Marsh	Freshwater Marsh	7
Warm Southwest Riparian Forest	American Southwest Riparian Forest and Woodland	7
Vancouverian Lowland Grassland and Shrubland	North Coast Deciduous Scrub and Terrace Prairie	9
California Coastal Scrub	Coastal Sage Scrub	10
Vancouverian Subalpine Forest	Pacific Northwest Subalpine Forest	10
Cool Semi-Desert Wash and Disturbance Scrub	High Desert Wash and "Rangeland" Scrub	12
Western North America Tall Sage Shrubland and Steppe	Big Sagebrush Scrub	12
California Chaparral	Chaparral	12
Vancouverian Alpine Scrub, Forb Meadow, and Grassland	Alpine Vegetation	13
Rocky Mountain Subalpine and High Montane Conifer Forest	Subalpine Aspen Forests and Pine Woodlands	13
Intermountain Singleleaf Pinyon-Western Juniper Woodland		13
Cool Interior Chaparral	Montane Chaparral	14
Western Cordilleran Montane Shrubland and Grassland	Montane Upland Deciduous Scrub	14
Western North America Dwarf Sage Shrubland and Steppe	Great Basin Dwarf Sagebrush Scrub	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Table D-7 Modoc Plateau Ecoregion		
USNVC Macrogroup	Common Name	Target Rank ¹
California Forest and Woodland	California Foothill and Valley Forests and Woodlands	3
Western North America Vernal Pool	Vernal Pools	4
Californian-Vancouverian Montane and Foothill Forest	North Coastal Mixed Evergreen and Montane Conifer Forests	5
Warm Southwest Riparian Forest	American Southwest Riparian Forest and Woodland	5
Western North American Montane-Subalpine Wet Shrubland and Wet Meadow	Mountain Riparian Scrub and Wet Meadow	5
Western North American Temperate Grassland and Meadow	Western Upland Grasslands	5

Table D-7 Modoc Plateau Ecoregion		
USNVC Macrogroup	Common Name	Target Rank ¹
Western North American Freshwater Aquatic Vegetation	Freshwater Aquatic Vegetation	7
Western North American Freshwater Marsh	Freshwater Marsh	7
Vancouverian Flooded and Swamp Forest	North Coastal and Montane Riparian Forest and Woodland	8
Western North America Wet Meadow and Low Shrub Carr	Wet Mountain Meadow	8
California Annual and Perennial Grassland	California Grassland and Flowerfields	9
Cool Semi-Desert Wash and Disturbance Scrub	High Desert Wash and "Rangeland" Scrub	12
Western North America Tall Sage Shrubland and Steppe*	Big Sagebrush Scrub	12
Rocky Mountain Subalpine and High Montane Conifer Forest	Subalpine Aspen Forests and Pine Woodlands	13
Vancouverian Subalpine Forest	Pacific Northwest Subalpine Forest	13
Inter-Mountain Dry Shrubland and Grassland*	Great Basin Upland Scrub	14
Cool Interior Chaparral	Montane Chaparral	14
Western Cordilleran Montane Shrubland and Grassland	Montane Upland Deciduous Scrub	14
Western North America Dwarf Sage Shrubland and Steppe*	Great Basin Dwarf Sagebrush Scrub	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Table D-8 Northwest Basin and Range Ecoregion		
USNVC Macrogroup	Common Name	Target Rank ¹
Warm Southwest Riparian Forest	American Southwest Riparian Forest and Woodland	3
Western Cordilleran Montane Shrubland and Grassland	Montane Upland Deciduous Scrub	4
Inter-Mountain Dry Shrubland and Grassland	Great Basin Upland Scrub	6
Western North America Wet Meadow and Low Shrub Carr	Wet Mountain Meadow	6
Western North American Temperate Grassland and Meadow	Western Upland Grasslands	6
Western North American Freshwater Marsh	Freshwater Marsh	7
Rocky Mountain Subalpine and High Montane Conifer Forest	Subalpine Aspen Forests and Pine Woodlands	9
Californian-Vancouverian Montane and Foothill Forest	North Coastal Mixed Evergreen and Montane Conifer Forests	11
Cool Semi-Desert Wash and Disturbance Scrub	High Desert Wash and "Rangeland" Scrub	11
Intermountain Basins Pinyon-Juniper Woodland*	Great Basin Pinyon-Juniper Woodland	11
North American Pacific Coastal Salt Marsh	Salt Marsh	11
Western North America Tall Sage Shrubland and Steppe	Big Sagebrush Scrub	12
Cool Interior Chaparral	Montane Chaparral	14
Western North America Dwarf Sage Shrubland and Steppe	Great Basin Dwarf Sagebrush Scrub	14
Great Basin Saltbush Scrub	Shadscale-Saltbush Scrub	15
Warm Semi-Desert/Mediterranean Alkali-Saline Wetland	Salt Marsh Meadows	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Bay Delta and Central Coast Province

Table D-9 Central California Coast Ecoregion		
USNVC Macrogroup	Common Name	Target Rank ¹
Western North America Vernal Pool*	Vernal Pools	4
California Annual and Perennial Grassland*	California Grassland and Flowerfields	4
California Forest and Woodland	California Foothill and Valley Forests and Woodlands	4
Western North American Freshwater Marsh	Freshwater Marsh	5
Warm Southwest Riparian Forest*	American Southwest Riparian Forest and Woodland	5
Western North American Temperate Grassland and Meadow	Western Upland Grasslands	7
California Chaparral	Chaparral	8
Vancouverian Cliff, Scree, and Other Rock Vegetation*	Northwest Coast Cliff and Outcrop	8
Western North America Wet Meadow and Low Shrub Carr	Wet Mountain Meadow	8
Californian–Vancouverian Montane and Foothill Forest	North Coastal Mixed Evergreen and Montane Conifer Forests	8
California Coastal Scrub*	Coastal Sage Scrub	11
Vancouverian Coastal Dune and Bluff*	Coastal Dune and Bluff Scrub	11
Vancouverian Lowland Grassland and Shrubland*	North Coast Deciduous Scrub and Terrace Prairie	11
Vancouverian Rainforest	Pacific Northwest Conifer Forests	12
North American Pacific Coastal Salt Marsh	Salt Marsh	13
Introduced North American Mediterranean Woodland and Forest	Non-Native Forest and Woodlands	15
Warm Semi-Desert/Mediterranean Alkali–Saline Wetland	Salt Marsh Meadows	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Table D-10 Central California Coast Ranges Ecoregion		
USNVC Macrogroup	Common Name	Target Rank ¹
California Forest and Woodland	California Foothill and Valley Forests and Woodlands	3
Western North America Vernal Pool*	Vernal Pools	4
California Annual and Perennial Grassland*	California Grassland and Flowerfields	4
Western North American Temperate Grassland and Meadow	Western Upland Grasslands	5
Warm Southwest Riparian Forest*	American Southwest Riparian Forest and Woodland	6
California Chaparral	Chaparral	7
Vancouverian Flooded and Swamp Forest	North Coastal and Montane Riparian Forest and Woodland	7
Warm Interior Chaparral	Desert Transition Chaparral	8
California Coastal Scrub*	Coastal Sage Scrub	8
Vancouverian Coastal Dune and Bluff	Coastal Dune and Bluff Scrub	8
California Cliff, Scree, and Other Rock Vegetation	California Foothill and Coastal Rock Outcrop Vegetation	9
Western Cordilleran Montane Shrubland and Grassland	Montane Upland Deciduous Scrub	11

Table D-10 Central California Coast Ranges Ecoregion		
USNVC Macrogroup	Common Name	Target Rank ¹
Warm Semi-Desert/Mediterranean Alkali-Saline Wetland	Salt Marsh Meadows	12
North American Warm-Desert Xero-Riparian	Desert Wash Woodland and Scrub	13
Great Basin Saltbush Scrub	Shadscale-Saltbush Scrub	14
Cool Semi-Desert Wash and Disturbance Scrub	High Desert Wash and "Rangeland" Scrub	15
Western North America Tall Sage Shrubland and Steppe	Big Sagebrush Scrub	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Central Valley and Sierra Nevada Province

Table D-11 Great Valley Ecoregion		
USNVC Macrogroup	Common Name	Target Rank ¹
Western North America Vernal Pool	Vernal Pools	4
California Annual and Perennial Grassland	California Grassland and Flowerfields	4
Warm Southwest Riparian Forest*	American Southwest Riparian Forest and Woodland	4
Vancouverian Lowland Grassland and Shrubland	North Coast Deciduous Scrub and Terrace Prairie	4
Vancouverian Flooded and Swamp Forest	North Coastal and Montane Riparian Forest and Woodland	4
Western North American Freshwater Aquatic Vegetation	Freshwater Aquatic Vegetation	6
Western North American Freshwater Marsh*	Freshwater Marsh	6
Western North American Temperate Grassland and Meadow	Western Upland Grasslands	8
California Forest and Woodland	California Foothill and Valley Forests and Woodlands	8
Western North America Wet Meadow and Low Shrub Carr	Wet Mountain Meadow	9
California Coastal Scrub	Coastal Sage Scrub	11
Vancouverian Coastal Dune and Bluff	Coastal Dune and Bluff Scrub	11
Mojavean-Sonoran Desert Scrub	Mojave and Sonoran Desert Scrub	13
North American Pacific Coastal Salt Marsh	Salt Marsh	13
Warm Semi-Desert/Mediterranean Alkali-Saline Wetland	Salt Marsh Meadows	14
Introduced North American Mediterranean Woodland and Forest	Non-Native Forest and Woodlands	15
North American Warm-Desert Xero-Riparian	Desert Wash Woodland and Scrub	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Table D-12 Sierra Nevada Foothills Ecoregion		
USNVC Macrogroup	Common Name	Target Rank ¹
California Forest and Woodland*	California Foothill and Valley Forests and Woodlands	4
Western North American Temperate Grassland and Meadow	Western Upland Grasslands	4
Western North America Vernal Pool	Vernal Pools	5
California Annual and Perennial Grassland	California Grassland and Flowerfields	5
Warm Southwest Riparian Forest	American Southwest Riparian Forest and Woodland	8
Vancouverian Flooded and Swamp Forest	North Coastal and Montane Riparian Forest and Woodland	8
Western North American Freshwater Marsh	Freshwater Marsh	8
Californian-Vancouverian Montane and Foothill Forest	North Coastal Mixed Evergreen and Montane Conifer Forests	9
Western North America Wet Meadow and Low Shrub Carr	Wet Mountain Meadow	9
Vancouverian Lowland Grassland and Shrubland	North Coast Deciduous Scrub and Terrace Prairie	10
Warm Interior Chaparral*	Desert Transition Chaparral	12
California Chaparral*	Chaparral	12
California Coastal Scrub	Coastal Sage Scrub	13
Cool Interior Chaparral*	Montane Chaparral	15
Western Cordilleran Montane Shrubland and Grassland	Montane Upland Deciduous Scrub	15
California Cliff, Scree, and Other Rock Vegetation*	California Foothill and Coastal Rock Outcrop Vegetation	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Table D-13 Sierra Nevada Ecoregion		
USNVC Macrogroup	Common Name	Target Rank ¹
Californian-Vancouverian Montane and Foothill Forest*	North Coastal Mixed Evergreen and Montane Conifer Forests	
California Forest and Woodland*	California Foothill and Valley Forests and Woodlands	3
Vancouverian Flooded and Swamp Forest	North Coastal and Montane Riparian Forest and Woodland	3
Western North American Montane/Boreal Peatland	Fen (Wet Meadow)	3
Western North American Temperate Grassland and Meadow*	Western Upland Grasslands	3
Western North American Montane-Subalpine Wet Shrubland and Wet Meadow	Mountain Riparian Scrub and Wet Meadow	4
Western North America Wet Meadow and Low Shrub Carr*	Wet Mountain Meadow	4
Western North American Freshwater Aquatic Vegetation	Freshwater Aquatic Vegetation	6
Western North American Freshwater Marsh	Freshwater Marsh	6
Vancouverian Lowland Grassland and Shrubland	North Coast Deciduous Scrub and Terrace Prairie	6
Warm Southwest Riparian Forest	American Southwest Riparian Forest and Woodland	6
Warm Interior Chaparral	Desert Transition Chaparral	8
Vancouverian Subalpine Forest*	Pacific Northwest Subalpine Forest	9
California Coastal Scrub	Coastal Sage Scrub	9
Cool Interior Chaparral*	Montane Chaparral	11
Western Cordilleran Montane Shrubland and Grassland	Montane Upland Deciduous Scrub	11

Table D-13 Sierra Nevada Ecoregion		
USNVC Macrogroup	Common Name	Target Rank¹
Intermountain Singleleaf Pinyon–Western Juniper Woodland		11
Great Basin Saltbush Scrub	Shadscale-Saltbush Scrub	12
Rocky Mountain Subalpine and High Montane Conifer Forest	Subalpine Aspen Forests and Pine Woodlands	12
Cool Semi-Desert Wash and Disturbance Scrub	High Desert Wash and "Rangeland" Scrub	12
Western North America Tall Sage Shrubland and Steppe	Big Sagebrush Scrub	12
Inter-Mountain Dry Shrubland and Grassland	Great Basin Upland Scrub	13
Rocky Mountain Alpine Scrub, Forb Meadow, and Grassland*	Alpine Vegetation	14
Vancouverian Alpine Scrub, Forb Meadow, and Grassland*	Alpine Vegetation	14
Western North America Dwarf Sage Shrubland and Steppe	Great Basin Dwarf Sagebrush Scrub	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

South Coast Ecoregion

Table D-14 Southern California Coast Ecoregion		
USNVC Macrogroup	Common Name	Target Rank¹
Warm Southwest Riparian Forest*	American Southwest Riparian Forest and Woodland	3
Western North American Freshwater Marsh*	Freshwater Marsh	3
California Forest and Woodland	California Foothill and Valley Forests and Woodlands	4
California Annual and Perennial Grassland*	California Grassland and Flowerfields	5
Western North America Vernal Pool	Vernal Pools	6
Vancouverian Flooded and Swamp Forest	North Coastal and Montane Riparian Forest and Woodland	6
California Coastal Scrub	Coastal Sage Scrub	7
Vancouverian Coastal Dune and Bluff	Coastal Dune and Bluff Scrub	7
Western North American Temperate Grassland and Meadow	Western Upland Grasslands	8
California Chaparral	Chaparral	9
Warm Interior Chaparral	Desert Transition Chaparral	9
Western North American Freshwater Aquatic Vegetation	Freshwater Aquatic Vegetation	10
Western North America Wet Meadow and Low Shrub Carr	Wet Mountain Meadow	10
California Cliff, Scree, and Other Rock Vegetation	California Foothill and Coastal Rock Outcrop Vegetation	11
Californian–Vancouverian Montane and Foothill Forest	North Coastal Mixed Evergreen and Montane Conifer Forests	11
Introduced North American Mediterranean Woodland and Forest	Non-Native Forest and Woodlands	15
North American Warm-Desert Xero-Riparian	Desert Wash Woodland and Scrub	15
North American Pacific Coastal Salt Marsh	Salt Marsh	15
Warm Semi-Desert/Mediterranean Alkali–Saline Wetland	Salt Marsh Meadows	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Table D-15 South Coast Mountains and Valleys Ecoregion		
USNVC Macrogroup	Common Name	Target Rank ¹
California Forest and Woodland	California Foothill and Valley Forests and Woodlands	3
Western North America Vernal Pool	Vernal Pools	3
California Annual and Perennial Grassland*	California Grassland and Flowerfields	3
Western North American Temperate Grassland and Meadow	Western Upland Grasslands	3
Warm Southwest Riparian Forest*	American Southwest Riparian Forest and Woodland	4
Vancouverian Lowland Grassland and Shrubland	North Coast Deciduous Scrub and Terrace Prairie	4
Vancouverian Flooded and Swamp Forest	Vancouverian Flooded and Swamp Forest	6
Western North American Freshwater Marsh	Freshwater Marsh	6
California Cliff, Scree, and Other Rock Vegetation	California Foothill and Coastal Rock Outcrop Vegetation	7
California Coastal Scrub	Coastal Sage Scrub	7
Vancouverian Coastal Dune and Bluff	Coastal Dune and Bluff Scrub	7
Californian-Vancouverian Montane and Foothill Forest	North Coastal Mixed Evergreen and Montane Conifer Forests	8
North American Warm-Desert Xero-Riparian	Desert Wash Woodland and Scrub	8
California Chaparral	Chaparral	8
Warm Interior Chaparral	Desert Transition Chaparral	8
Mojavean-Sonoran Desert Scrub	Mojave and Sonoran Desert Scrub	9
Western North American Montane-Subalpine Wet Shrubland and Wet Meadow	Mountain Riparian Scrub and Wet Meadow	10
Western North America Wet Meadow and Low Shrub Carr	Wet Mountain Meadow	10
Cool Interior Chaparral	Montane Chaparral	10
Western Cordilleran Montane Shrubland and Grassland	Montane Upland Deciduous Scrub	10
North American Pacific Coastal Salt Marsh	Salt Marsh	13
Warm Semi-Desert/Mediterranean Alkali-Saline Wetland	Salt Marsh Meadows	13
Great Basin Saltbush Scrub	Shadscale-Saltbush Scrub	13
Cool Semi-Desert Wash and Disturbance Scrub	High Desert Wash and "Rangeland" Scrub	14
Western North America Tall Sage Shrubland and Steppe	Big Sagebrush Scrub	14
Introduced North American Mediterranean Woodland and Forest	Non-Native Forest and Woodlands	15
Rocky Mountain Subalpine and High Montane Conifer Forest	Subalpine Aspen Forests and Pine Woodlands	15
Vancouverian Subalpine Forest	Pacific Northwest Subalpine Forest	15
Western North America Dwarf Sage Shrubland and Steppe	Great Basin Dwarf Sagebrush Scrub	15
Inter-Mountain Dry Shrubland and Grassland	Great Basin Upland Scrub	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Deserts Province

Table D-16 Mono Ecoregion		
USNVC Macrogroup	Common Name	Target Rank ¹
Warm Southwest Riparian Forest	American Southwest Riparian Forest and Woodland	3
Western Cordilleran Montane Shrubland and Grassland	Montane Upland Deciduous Scrub	3
Western North American Montane-Subalpine Wet Shrubland and Wet Meadow	Mountain Riparian Scrub and Wet Meadow	4
Western North America Wet Meadow and Low Shrub Carr	Wet Mountain Meadow	4
Western North American Temperate Grassland and Meadow	Western Upland Grasslands	4
Vancouverian Flooded and Swamp Forest	North Coastal and Montane Riparian Forest and Woodland	5
Californian-Vancouverian Montane and Foothill Forest	North Coastal Mixed Evergreen and Montane Conifer Forests	6
Rocky Mountain Subalpine and High Montane Conifer Forest	Subalpine Aspen Forests and Pine Woodlands	8
Inter-Mountain Dry Shrubland and Grassland	Great Basin Upland Scrub	8
North American Warm Semi-Desert Cliff, Scree, and Other Rock Vegetation	Sparsely Vegetated Desert Dune	9
Western North American Freshwater Marsh	Freshwater Marsh	9
Vancouverian Subalpine Forest	Pacific Northwest Subalpine Forest	10
North American Warm-Desert Xero-Riparian	Desert Wash Woodland and Scrub	10
Western North America Tall Sage Shrubland and Steppe*	Big Sagebrush Scrub	11
Cool Semi-Desert Wash and Disturbance Scrub	High Desert Wash and "Rangeland" Scrub	11
Mojavean-Sonoran Desert Scrub	Mojave and Sonoran Desert Scrub	12
Intermountain Basins Pinyon-Juniper Woodland*	Great Basin Pinyon-Juniper Woodland	12
Great Basin Saltbush Scrub	Shadscale-Saltbush Scrub	13
Warm Semi-Desert/Mediterranean Alkali-Saline Wetland	Salt Marsh Meadows	13
Cool Interior Chaparral	Montane Chaparral	13
North American Pacific Coastal Salt Marsh	Salt Marsh	14
Temperate Pacific Intertidal Shore	Brackish (Estuarine) Submerged Aquatic Vegetation	14
Vancouverian Alpine Scrub, Forb Meadow, and Grassland	Alpine Vegetation	15
Western North America Dwarf Sage Shrubland and Steppe	Great Basin Dwarf Sagebrush Scrub	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Table D-17 Mojave Desert Ecoregion		
USNVC Macrogroup	Common Name	Target Rank¹
California Annual and Perennial Grassland	California Grassland and Flowerfields	3
North American Warm Semi-Desert Cliff, Scree, and Other Rock Vegetation	Sparsely Vegetated Desert Dune	5
Western North American Freshwater Marsh	Freshwater Marsh	5
Warm Southwest Riparian Forest	American Southwest Riparian Forest and Woodland	5
California Forest and Woodland	California Foothill and Valley Forests and Woodlands	6
Cool Semi-Desert Wash and Disturbance Scrub	High Desert Wash and "Rangeland" Scrub	7
California Coastal Scrub	Coastal Sage Scrub	8
Inter-Mountain Dry Shrubland and Grassland	Great Basin Upland Scrub	8
Mojavean–Sonoran Desert Scrub	Mojave and Sonoran Desert Scrub	10
North American Warm-Desert Xero-Riparian	Desert Wash Woodland and Scrub	10
Warm Interior Chaparral	Desert Transition Chaparral	11
Great Basin Saltbush Scrub*	Shadscale-Saltbush Scrub	14
North American Pacific Coastal Salt Marsh	Salt Marsh	14
Warm Semi-Desert/Mediterranean Alkali–Saline Wetland	Salt Marsh Meadows	14
Western North America Tall Sage Shrubland and Steppe	Big Sagebrush Scrub	14
Western North America Dwarf Sage Shrubland and Steppe	Great Basin Dwarf Sagebrush Scrub	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Table D-18 Sonoran Desert Ecoregion		
USNVC Macrogroup	Common Name	Target Rank¹
California Annual and Perennial Grassland	California Grassland and Flowerfields	5
Warm Southwest Riparian Forest	American Southwest Riparian Forest and Woodland	6
Great Basin Saltbush Scrub	Shadscale-Saltbush Scrub	7
North American Warm Semi-Desert Cliff, Scree, and Other Rock Vegetation	Sparsely Vegetated Desert Dune	8
Western North American Freshwater Marsh	Freshwater Marsh	8
Mojavean–Sonoran Desert Scrub*	Mojave and Sonoran Desert Scrub	10
North American Warm-Desert Xero-Riparian	Desert Wash Woodland and Scrub	10
Warm Semi-Desert/Mediterranean Alkali–Saline Wetland	Salt Marsh Meadows	12
North American Pacific Coastal Salt Marsh	Salt Marsh	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Table D-19 Colorado Desert Ecoregion		
USNVC Macrogroup	Common Name	Target Rank¹
California Annual and Perennial Grassland	California Grassland and Flowerfields	4
North American Warm Semi-Desert Cliff, Scree, and Other Rock Vegetation*	Sparsely Vegetated Desert Dune	5
Western North American Freshwater Marsh	Freshwater Marsh	6
Warm Southwest Riparian Forest	American Southwest Riparian Forest and Woodland	6
Mojavean–Sonoran Desert Scrub	Mojave and Sonoran Desert Scrub	8
Great Basin Saltbush Scrub	Shadscale-Saltbush Scrub	8
Warm Interior Chaparral	Desert Transition Chaparral	10
North American Warm-Desert Xero-Riparian*	Desert Wash Woodland and Scrub	11
California Coastal Scrub	Coastal Sage Scrub	11
Warm Semi-Desert/Mediterranean Alkali–Saline Wetland	Salt Marsh Meadows	11
North American Pacific Coastal Salt Marsh	Salt Marsh	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

Table D-20 Southeastern Great Basin Ecoregion		
USNVC Macrogroup	Common Name	Target Rank¹
Warm Southwest Riparian Forest*	American Southwest Riparian Forest and Woodland	3
Western Cordilleran Montane Shrubland and Grassland	Montane Upland Deciduous Scrub	4
Inter-Mountain Dry Shrubland and Grassland*	Great Basin Upland Scrub	6
Western North America Wet Meadow and Low Shrub Carr	Wet Mountain Meadow	6
Western North American Temperate Grassland and Meadow	Western Upland Grasslands	6
Western North American Freshwater Marsh	Freshwater Marsh	7
Rocky Mountain Subalpine and High Montane Conifer Forest	Subalpine Aspen Forests and Pine Woodlands	9
Californian–Vancouverian Montane and Foothill Forest	North Coastal Mixed Evergreen and Montane Conifer Forests	11
Cool Semi-Desert Wash and Disturbance Scrub*	High Desert Wash and "Rangeland" Scrub	11
North American Pacific Coastal Salt Marsh	Salt Marsh	11
Western North America Tall Sage Shrubland and Steppe	Big Sagebrush Scrub	12
Cool Interior Chaparral	Montane Chaparral	14
Western North America Dwarf Sage Shrubland and Steppe	Great Basin Dwarf Sagebrush Scrub	14
Great Basin Saltbush Scrub	Shadscale-Saltbush Scrub	15
Warm Semi-Desert/Mediterranean Alkali–Saline Wetland	Salt Marsh Meadows	15

¹ Based on analysis of total biodiversity, vulnerability (rarity), and endemism

* Selected macrogroup for conservation strategy development in SWAP 2015

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Table D-21 Terrestrial Vegetation Communities					
USNVC Macrogroup	Common Name	Ecological Description	CWHR Classification	Geographic Occurrence (Province)	Geography Selected as Priority Conservation Target (Province)
California Forest and Woodland	California Foothill and Valley Forests and Woodlands	Includes all Mediterranean climate woodlands and forests in California from sea level to the point where snow and frost in combination with high winter precipitation enables cool temperate species of trees to dominate the overstory layer. This macrogroup ranges throughout the state west of the deserts and below the higher mountains where snow is the main form of precipitation. This includes the Central and South Coast Ranges, the Northern California Interior Coast Ranges, the Sierra Foothills, Central Valley, and lower elevations of the west slope of the Sierra, the Southern Cascades, the Southern Klamath Mountains, and the Transverse and Peninsular Ranges.	<ul style="list-style-type: none"> ▲ Blue Oak Woodland ▲ Blue-Oak-Foothill Pine ▲ Closed-Cone Pine-Cypress ▲ Coastal Oak Woodland ▲ Juniper ▲ Montane Hardwood ▲ Valley Oak Woodland 	<ul style="list-style-type: none"> ▲ North Coast and Klamath, ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Central Valley and Sierra Nevada
Californian-Vancouverian Montane and Foothill Forest	North Coastal Mixed Evergreen and Montane Conifer Forests	This broad macrogroup is representative of the cool-temperate forests which occur in the Pacific states from the Puget Sound area south into the higher mountains of southern California and adjacent Baja, Mexico. In California these range inland from the immediate coast and experience warm, relatively dry summers and cool rainy to cool snowy winters. All of these forests average cooler and wetter than the previous macrogroup (California Foothill and Valley Forests and Woodlands).	<ul style="list-style-type: none"> ▲ Douglas-Fir ▲ Eastside Pine ▲ Jeffrey Pine ▲ Klamath Mixed Conifer ▲ Montane Hardwood ▲ Montane Hardwood-Conifer ▲ Ponderosa Pine ▲ Sierran Mixed Conifer ▲ White Fir 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Central Valley and Sierra Nevada
Rocky Mountain Subalpine and High Montane Conifer Forest	Subalpine Aspen Forests and Pine Woodlands	This macrogroup represents the cold but less snowy subalpine to high montane forests of the Sierra, Cascades, Klamath, Transverse, and Peninsular Ranges of California. It is a wide ranging macrogroup, including similar forests and woodlands in the Rocky Mountains, and the high mountains of the Great Basin.	<ul style="list-style-type: none"> ▲ Aspen ▲ Lodgepole Pine ▲ Subalpine Conifer 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ North Coast and Klamath
Vancouverian Rainforest	Pacific Northwest Conifer Forests	This is the Pacific Northwest temperate rainforest, which includes the giant conifer forests ranging from central California coast, all the way up to southeast Alaska. Mild winters with massive amounts of rain (and some snow north of California) and a maritime climate, with cool summers with either fog (in California) or some summer rain (north of California) are typical.	<ul style="list-style-type: none"> ▲ Redwood 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Bay Delta and Central Coast 	<ul style="list-style-type: none"> ▲ North Coast and Klamath
Vancouverian Subalpine Forest	Pacific Northwest Subalpine Forest	Includes montane conifer forests and woodlands adapted to very high winter snowfall, from montane to subalpine altitudes. Snow loads are the greatest anywhere in North America, and persist well into the summer. Tree germination is also limited in some cases by the short period the ground is not covered by snow.	<ul style="list-style-type: none"> ▲ Red Fir ▲ Subalpine Conifer 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Central Valley and Sierra Nevada
Intermountain Basins Pinyon-Juniper Woodland	Great Basin Pinyon-Juniper Woodland	Includes all mixed and pure pinyon and juniper stands in trans-montane California. These are largely found in the Mojave Desert mountains, and in the mountains of the Modoc Plateau, and Great Basin. They also occur on the eastern slopes of the Sierra Nevada and the Peninsular Ranges and the northern slopes of the Transverse Ranges. Outliers occur west of the Sierra Crest in Kings Canyon, and in the mountains of Ventura and Santa Barbara Counties.	<ul style="list-style-type: none"> ▲ Juniper ▲ Pinyon-Juniper 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Cascades and Modoc Plateau ▲ Deserts
Vancouverian Flooded and Swamp Forest (formerly Western Cordilleran montane-Boreal Riparian Scrub and Forest)	North Coastal and Montane Riparian Forest and Woodland	This is a new synthesis of parts of the older concept treated under Western Cordilleran montane-boreal riparian scrub and forest. Revisions of the NVC have split the tree-dominated forest and woodlands of the cool temperate parts of the state from the riparian scrubs. These riparian forests occur along the major rivers and streams in the outer and middle North Coast Ranges, and along the foothill and lower montane reaches of rivers and streams in the Klamath, Cascades, Sierra Nevada, Modoc Plateau, Transverse, and Peninsular ranges. Unlike the Warm Southwest Riparian Forest Macrogroup, surrounding upland vegetation is mainly conifer dominated and not broadleaf evergreen or deciduous woodland/forest.	<ul style="list-style-type: none"> ▲ Montane Riparian 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Central Valley and Sierra Nevada 	<ul style="list-style-type: none"> ▲ North Coast and Klamath
Western North American Montane-Subalpine Wet Shrubland and Wet Meadow (formerly Western Cordilleran Montane-Boreal Wet Meadow)	Mountain Riparian Scrub and Wet Meadow	This macrogroup contains montane meadow grasses, graminoids, and forbs and shrublands associated with meadows, riparian terraces, and seeps in the higher mountains of the state from the Peninsular and Transverse Ranges through the Sierra-Cascade Ranges and including the higher mountains of the Modoc Plateau, the Klamath Mountains and the high Inner North Coast Ranges. The vegetation tends to make small stands sorting ecologically based on moisture availability and on tolerance of disturbance. This concept joins both low riparian shrublands and associated wet meadows based on their overlap in ecologies and floristic composition.	<ul style="list-style-type: none"> ▲ Montane Riparian ▲ Wet Meadow 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ North Coast and Klamath
Warm Southwest Riparian Forest (formerly Southwestern North American Riparian, Flooded and Swamp Forest)	American Southwest Riparian Forest and Woodland	The Great Valley, South Coast, and warm desert riparian forests and thickets are included in this macrogroup. The range of the main indicator trees and shrubs are the southwestern United States and northern Mexico. Most stands of this macrogroup occur below 4,000-foot elevation and are replaced by the cool-temperate version of riparian (Montane and North Coast Riparian Forest and Scrub) in the mountains and on the north coast	<ul style="list-style-type: none"> ▲ Palm Oasis ▲ Valley-Foothill Riparian 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts

Table D-21 Terrestrial Vegetation Communities					
USNVC Macrogroup	Common Name	Ecological Description	CWHR Classification	Geographic Occurrence (Province)	Geography Selected as Priority Conservation Target (Province)
California Chaparral	Chaparral	This includes all chaparral (evergreen sclerophyll-leaved shrublands) below the zone of regular snow accumulation in the mountains. The chaparral occurs throughout Mediterranean climate parts of California from the Klamath Mountains to the Mexican Border. It is represented by a wide variety of floristic alliances, but in general can be grouped in to coastal (maritime), xeric (dry, sunny slopes), mesic (cooler, shady slopes), and lower montane (somewhat frost sensitive) types. All of these groupings have different characteristic species and fire regimes.	<ul style="list-style-type: none"> ▲ Chamise-Redshanks ▲ Mixed Chaparral 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Central Valley and Sierra Nevada
California Coastal Scrub	Coastal Sage Scrub	This is the other main macrogroup of California shrublands. It differs from chaparral by being composed of drought-deciduous shrubs, which typically are smaller with less extensive root systems and shorter life spans. Many of the members of this macrogroup are also found in the warm deserts and show similar adaptations to hot-dry summer conditions.	<ul style="list-style-type: none"> ▲ Coastal Scrub 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Bay Delta and Central Coast
California Annual and Perennial Grassland	California Grassland and Flowerfields	This macrogroup includes all annual forb/grass vegetation native and non-native, as well as native perennial grasslands growing within the California Mediterranean climate. This does not include the cool-moist north coastal terrace prairies, the montane meadow/upland grasslands, and non-native perennial pasture grasses. Stands of this macrogroup include everything from wildflower fields in the San Joaquin Valley and adjacent South and Central Coast Ranges, poppy fields of the western Mojave Desert, needlegrass grasslands of the foothills, valleys and coast ranges, and the largely non-native annual grasslands and weed patches in the dry, warm summer regions of California.	<ul style="list-style-type: none"> ▲ Annual Grassland ▲ Perennial Grassland 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Bay Delta and Central Coast ▲ South Coast
Western North American Temperate Grassland and Meadow	Western Upland Grasslands	This macrogroup applies to vegetation dominated by grasses, which are typically not restricted to moisture conditions that are higher than the surrounding landscape (not seeps, riparian, or wet meadows). In general, these grasslands are also widespread outside of California in surrounding states with cool-temperate climatic conditions. This vegetation occurs in the hills and mountains of the north Coast Ranges, Klamath Mountains, lower montane Sierra Nevada, Modoc Plateau, Great Basin, and southward to the Transverse and Peninsular Ranges.	<ul style="list-style-type: none"> ▲ Annual Grassland ▲ Perennial Grassland 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Central Valley and Sierra Nevada ▲ Bay Delta and Central Coast 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Central Valley and Sierra Nevada
Western Cordilleran Montane Shrubland and Grassland	Montane Upland Deciduous Scrub	This macrogroup includes several widespread western alliances that occur in rocky settings at mid to higher elevations. Stands occur in Klamath, Cascade, Sierra, higher inner North Coast Ranges and the Transverse and Peninsular Ranges. Stands are often adjacent to montane chaparral (which is largely evergreen) but often shows greater affinity to more mesic sites such as rocky canyons, north-facing slopes, or areas of greater snow accumulation. Some vegetation types are successional to forest, others persist due to avalanche disturbance, or poor soils, which preclude productive tree growth.	<ul style="list-style-type: none"> ▲ Montane Chaparral 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ North Coast and Klamath
Vancouverian Lowland Grassland and Shrubland	North Coast Deciduous Scrub and Terrace Prairie	This macrogroup includes a combination of grasses and shrubs, which tend to intermix in stands along the immediate coastal strip from central California to north of the Oregon border. Cool foggy summers and rainy winters, coupled with salty winds tend to preclude forest development along the immediate coast, but inland these stands only persist through regular disturbance such as clearing, grazing/browsing. Stands also commonly occur adjacent to upland Coastal Dune and Bluff scrub. However, that macrogroup is characterized by more evergreen shrubs, which occur in well-drained exposed settings (exposed bluffs and dunes).	<ul style="list-style-type: none"> ▲ Coastal Scrub ▲ Perennial Grassland 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Bay Delta and Central Coast
Warm Interior Chaparral	Desert Transition Chaparral	These chaparral stands occur in the "rain-shadow" of the Mountains including the inland sides of the inner South Coast Ranges, the southern Sierra, Tehachapi, Transverse, and Peninsular Ranges. Compared to California chaparral the stands are less dense, contain a mix of other non-chaparral shrubs with desert affinities, and tend to have less frequent and less intense fires. Several of the characteristic species are also found in Arizona, New Mexico, and adjacent northern Mexico in similar "desert-margin" settings, and are thus, different floristically and ecologically from typical California Chaparral, although the two macrogroups may intermingle in some areas.	<ul style="list-style-type: none"> ▲ Chamise-Redshanks Chaparral ▲ Mixed Chaparral 	<ul style="list-style-type: none"> ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Central Valley and Sierra Nevada
Cool Interior Chaparral (formerly Western North American Cool/Montane Sclerophyllous Evergreen Scrub)	Montane Chaparral	This macrogroup is characterized by sclerophyllous leaved shrubs with wider geographic range than California. Many occur throughout the western mountains to the Rockies. These are cold-adapted and occupy successional relationships to various coniferous forests on productive sites, or persist in rocky or other poor soil sites.	<ul style="list-style-type: none"> ▲ Montane Chaparral 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Central Valley and Sierra Nevada
Vancouverian Coastal Dune and Bluff	Coastal Dune and Bluff Scrub	Stands of coastal dune and bluff vegetation are limited to salty, rocky or sandy settings immediately adjacent to the open coast. Adaptations to salt spray, wind and shifting sands, result in several lifeforms including succulent or hairy leaves, long underground roots and stolons (adaptation to shifting sands), and good colonization of relatively unstable and sterile substrates.	<ul style="list-style-type: none"> ▲ Coastal Scrub 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Bay Delta and Central Coast

Table D-21 Terrestrial Vegetation Communities					
USNVC Macrogroup	Common Name	Ecological Description	CWHR Classification	Geographic Occurrence (Province)	Geography Selected as Priority Conservation Target (Province)
Western North American Montane/Boreal Peatland	Fen (Wet Meadow)	Fens (often mistakenly called "bogs") are hydrologically and chemically unique wetlands, which are typically nutrient-poor and support many endemic vascular and non-vascular plants. (mostly mosses) Fens are typically small in size in California, and in California have only been well described from the Sierra, Klamath, and Cascade ranges. They also occur along the cool north coast.	<ul style="list-style-type: none"> ▲ Fresh Emergent Wetland ▲ Wet Meadow 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Central Valley and Sierra 	<ul style="list-style-type: none"> ▲ North Coast and Klamath
Western North American Freshwater Marsh	Freshwater Marsh	Fresh water is present throughout all or most of the growing season, species are widespread and tend to be tall emergent forms at lower elevations, but when water depth is > 1 m most vegetation is either anchored or floating hydrophytes (water lilies, duckweed, pondweed, etc.)	<ul style="list-style-type: none"> ▲ Fresh Emergent Wetland 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast
Western North America Vernal Pool	Vernal Pools <i>(strategies from Central Coast Province California Grasslands and Flowerfields apply to this macrogroup)</i>	Vernal pools are widespread in 17 different regions in the state from the Mediterranean climate pools of south-coastal through the Great Valley up to the cool temperate Modoc Plateau and Sierra Valley areas of the Northeastern part of the state. Pools generally fill and dry several times per winter, but generally are completely dry in the summer months. Vegetation is seasonally varied and also varies yearly due to fluctuating and unpredictable water levels. Most pools are small, but can be many acres in size in some areas such as the Modoc Plateau.	<ul style="list-style-type: none"> ▲ Annual Grassland ▲ Fresh Emergent Wetland 	<ul style="list-style-type: none"> ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast 	<ul style="list-style-type: none"> ▲ Bay Delta and Central Coast
Western North America Wet Meadow and Low Shrub Carr	Wet Mountain Meadow	Wet meadows are typical of low lying sites in the mountains and in some lower elevation valleys and depressions. Saturated soil or standing water through the growing season are key characteristics. Long-persisting standing water tends to convert sites to Freshwater Marsh macrogroup. Many wet meadow vegetation types occur in the mountainous areas of the state where cool snowy winters and short growing seasons prevail. However, there is a warmer winter lower elevation analog, and also one with invasive exotic species. This macrogroup is widespread throughout the state wherever freshwater meadows and seeps occur.	<ul style="list-style-type: none"> ▲ Wet Meadow 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Central Valley and Sierra Nevada ▲ North Coast and Klamath
North American Pacific Coastal Salt Marsh	Salt Marsh	Salt marshes are generally tied to coastal tidally influenced wetlands in California. They have salinities similar to ocean water and do not develop the higher concentrations of salts characteristic of the Salt marsh meadow macrogroup. Many salt marsh species are widespread and species diversity is relatively low. Individual alliances within the macrogroup tend to sort out based on inundation frequencies and maximum water depths.	<ul style="list-style-type: none"> ▲ Saline Emergent Wetland 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Central Valley and Sierra Nevada ▲ Bay Delta and Central Coast ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Bay Delta and Central Coast
Warm Semi-Desert/Mediterranean Alkali-Saline Wetland	Salt Marsh Meadows <i>(strategies developed for Salt Marsh apply to this macrogroup)</i>	This macrogroup includes herbaceous and shrubby perennial vegetation associated with saline or alkaline wetlands in the desert or along the upper edges of coastal salt marshes. The overlap between salty desert basins and coastal "high" salt marsh becomes more pronounced as one proceeds southward. In coastal southern California precipitation is only 10 inches per year and solar insulation and evaporation concentrate surface salts to similar levels found on or at the edges of many desert playas. Seeps of fresh or brackish water in either setting account for denser herbaceous growth indicative of one group of alliances in this macrogroup, while the evaporative flat pannes and playas of the coast and the desert are the home of the phreatophytic shrubby indicators of the other group in this category.	<ul style="list-style-type: none"> ▲ Alkali Desert Scrub ▲ Saline Emergent Wetland 	<ul style="list-style-type: none"> ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Bay Delta and Central Coast
Mojavean-Sonoran Desert Scrub	Mojave and Sonoran Desert Scrub	This is an upland desert scrub found on hill slopes and alluvial fans throughout the arid Southwest where winter temperatures are not as cold as in the Great Basin Desert and summer temperatures are very hot. The Mojave has frost and occasional winter snows, the Sonoran rarely has any frost. The warmer Sonoran desert tends to have more summer rain, and more distinctive emergent arborescent species, such as saguaro, ocotillo, and the Mojave is cooler with fewer large cacti and large thorny trees, but has Joshua trees and other Yucca species.	<ul style="list-style-type: none"> ▲ Desert Scrub ▲ Desert Succulent Scrub ▲ Joshua Tree 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Deserts
North American Warm-Desert Xero-Riparian Macrogroup (formerly Madrean Warm Semi-Desert Wash Woodland/Scrub)	Desert Wash Woodland and Scrub	This macrogroup includes the warm desert washes of the Sonoran and Colorado Desert. These have trees and large shrubs associated with them while the cooler Mojave desert has fewer trees but several shrub species. Stands vary depending upon subsurface water availability, minimum winter temperature, and intensity and frequency of flooding.	<ul style="list-style-type: none"> ▲ Desert Scrub ▲ Desert Wash 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Deserts
Great Basin Saltbush Scrub Macrogroup (formerly Western North American Cool Semi-Desert Shrubland, Shrub-Steppe)	Shadscale-Saltbush Scrub	The shrubby cool desert saltbush species often form distinct bands above closed basins and below extensive sagebrush belts in the Great Basin Desert. This macrogroup addresses those saltbush scrubs, which typically are not growing in strongly saline or alkaline soils, but do tolerate higher pH (alkalinity) and often finer soil texture than Artemisia tridentata and related taxa of sagebrush.	<ul style="list-style-type: none"> ▲ Alkali Desert Scrub ▲ Desert Scrub ▲ Desert Wash 	<ul style="list-style-type: none"> ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Deserts

Table D-21 Terrestrial Vegetation Communities					
USNVC Macrogroup	Common Name	Ecological Description	CWHR Classification	Geographic Occurrence (Province)	Geography Selected as Priority Conservation Target (Province)
Cool Semi-Desert Wash and Disturbance Scrub	High Desert Wash and "Rangeland" Scrub	This is a cool desert macrogroup which is most common in the eastern portions of the state from Modoc Plateau, southward and east of the Cascades and Sierra into the mountains of the Mojave Desert. Stands form when fire or other clearing and disturbance remove stands of Artemisia, (in the big sagebrush scrub) or other shrubs characteristic of the Great Basin Upland Scrub macrogroup	<ul style="list-style-type: none"> ▲ Bitterbrush ▲ Low Sage ▲ Sagebrush 	<ul style="list-style-type: none"> ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Deserts
Western North America Tall Sage Shrubland and Steppe	Big Sagebrush Scrub	This macrogroup is emblematic of the valleys and lower slopes of the Great Basin Desert and enters California in the Modoc Plateau, south and east of the Cascades and Sierra, into the higher mountains of the Mojave Desert. It also occurs in isolated patches in the Transverse and Peninsular ranges, the south and the inner north Coast Ranges sporadically northward to the eastern Klamath Mountains.	<ul style="list-style-type: none"> ▲ Sagebrush 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Cascades and Modoc Plateau ▲ Deserts
Western North America Dwarf Sage Shrubland and Steppe	Great Basin Dwarf Sagebrush Scrub	This macrogroup occurs in cool desert or even high mountain settings from the Eastern Sierra, Cascades, Modoc Plateau, southward into the southern Great Basin Mountains, and the desert side of the Transverse Ranges. It is characterized by low subshrub species in the genus Artemisia (sagebrush). These species form stands on poor soils, or exposed slopes and ridges where larger sagebrush species are unable to grow.	<ul style="list-style-type: none"> ▲ Low Sage 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Central Valley and Sierra Nevada ▲ Deserts 	<ul style="list-style-type: none"> ▲ Cascades and Modoc Plateau
Inter-Mountain Dry Shrubland and Grassland	Great Basin Upland Scrub	This macrogroup occurs in the cooler Mojave Desert mountains, the uplands of the Great Basin and Modoc Plateau, and in isolated pockets of the inner South Coast Ranges such as Temblor Range and Carrizo Plains. It is composed of shrublands with cool desert affinities but has been segregated from the short and tall species of sagebrush (Artemisia spp.). Most of the vegetation in this macrogroup occurs well beyond the eastern borders of CA into the Great Basin Province. Successional relationships exist between the several groups of alliances in this macrogroup, some are disturbance followers and may also occur in episodic washes. Some are persistent resprouting shrubs, which recover well after fire, and some are fire and browsing-sensitive with longer recovery times. Some perennial desert grasslands are also part of this macrogroup and increase with short fire intervals.	<ul style="list-style-type: none"> ▲ Bitterbrush ▲ Low Sage ▲ Sagebrush 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Cascades and Modoc Plateau ▲ Deserts
Vancouverian Alpine Scrub, Forb Meadow, and Grassland and Rocky Mountain Alpine Scrub, Forb Meadow, and Grassland	Alpine Vegetation	This macrogroup is representative of the state's alpine zone in the Sierra, Cascades, White, Sweetwater, and Klamath Mountains. It either occurs above timberline or is found localized within subalpine areas in cold air drainages (e.g. N-facing slopes, often near long persisting snow banks). The characteristic species are either herbaceous (many are cushion plants, some tufted or rhizomatous graminoids) or low prostrate or dwarf shrubs. Different groups segregate based on substrate type (scree, talus, felfield) and moisture regime (snowbank, felfield, etc.).	<ul style="list-style-type: none"> ▲ Alpine Dwarf-Shrub 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ North Coast and Klamath
Temperate Pacific Intertidal Shore	Brackish (Estuarine) Submerged Aquatic Vegetation (strategies from Marine target "Embayments, Estuaries, and Lagoons" apply to this macrogroup)	This macrogroup is poorly defined currently in California, but should include both hard and soft bottom intertidal settings.	<ul style="list-style-type: none"> ▲ Estuarine 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Bay Delta and Central Coast ▲ South Coast 	<ul style="list-style-type: none"> ▲ Marine
Western North American Freshwater Aquatic Vegetation	Freshwater Aquatic Vegetation (strategies from Freshwater Marsh apply to this macrogroup)	This macrogroup is poorly defined in the state, many wetland vegetation stands are best kept in the Freshwater marsh macrogroup. However, deeper water species which do not cover large areas of water surface would fall into this macrogroup.	<ul style="list-style-type: none"> ▲ Lacustrine ▲ Riverine 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Bay Delta and Central Coast ▲ Cascades and Modoc Plateau ▲ Central Valley and Sierra Nevada ▲ South Coast 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast
California Cliff, Scree, and Other Rock Vegetation	California Foothill and Coastal Rock Outcrop Vegetation	Vegetative cover is generally < 2% cliffs and outcrops west of the deserts and inland from the immediate coast, south of central California. Rock surfaces or rapidly eroding unstable slopes are characteristic. Stands do not include alpine or subalpine sparse, rocky vegetation, and also do not include the sparsely vegetated portions of the warm and cold deserts.	<ul style="list-style-type: none"> ▲ Barren 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Central Valley and Sierra Nevada
Vancouverian Cliff, Scree, and Other Rock Vegetation	Northwest Coast Cliff and Outcrop	Taken to describe coastal cliffs on headlands and islands of the north coast.	<ul style="list-style-type: none"> ▲ Barren 	<ul style="list-style-type: none"> ▲ Cascades and Modoc Plateau ▲ Bay Delta and Central Coast 	<ul style="list-style-type: none"> ▲ Bay Delta and Central Coast
North American Warm Semi-Desert Cliff, Scree, and Other Rock Vegetation	Sparsely Vegetated Desert Dune	This macrogroup is characteristic of the desert dunes and contains both annual and perennial species with special strategies to deal with the shifting sands and the dry and unpredictable climate. Vegetation cover is variable depending upon unpredictable rainfall patterns.	<ul style="list-style-type: none"> ▲ Barren 	<ul style="list-style-type: none"> ▲ North Coast and Klamath ▲ Cascades and Modoc Plateau ▲ Central Valley and Sierra Nevada ▲ South Coast ▲ Deserts 	<ul style="list-style-type: none"> ▲ Deserts