



# ONLINE TOOLS

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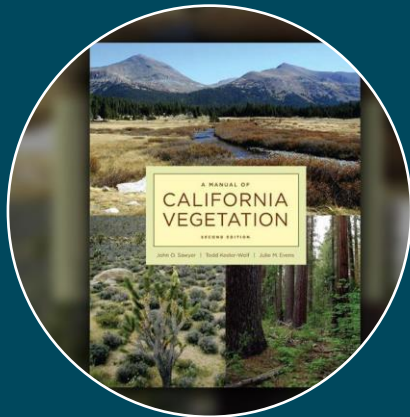


# ONLINE TOOLS: SENSITIVE NATURAL COMMUNITIES (SNC's)



- WHICH NATURAL COMMUNITIES ARE SNCS IN MY AREA OF INTEREST?
- DO I HAVE SNCS IN MY AREA OF INTEREST?
- WHAT IS THE COMMUNITY COMPOSITION OF AN SNC?

# ACCESSING INFORMATION ON SENSITIVE NATURAL COMMUNITIES: KNOWING YOUR TOOL KIT



CNPS: Manual of  
California  
Vegetation Online &  
CNPS Website



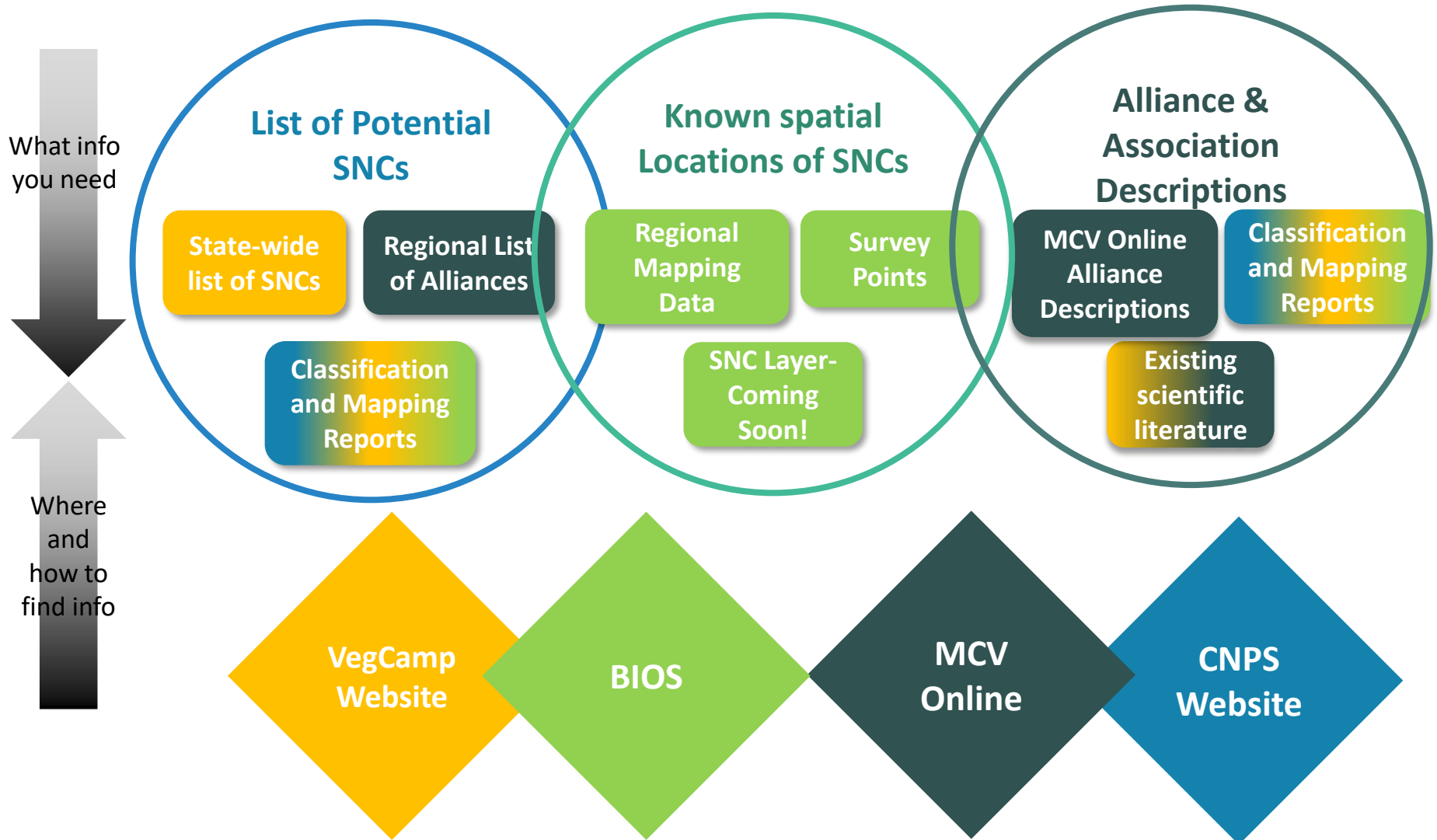
CDFW: Biogeographic  
Information and  
Observation System



CDFW: VegCAMP  
Website

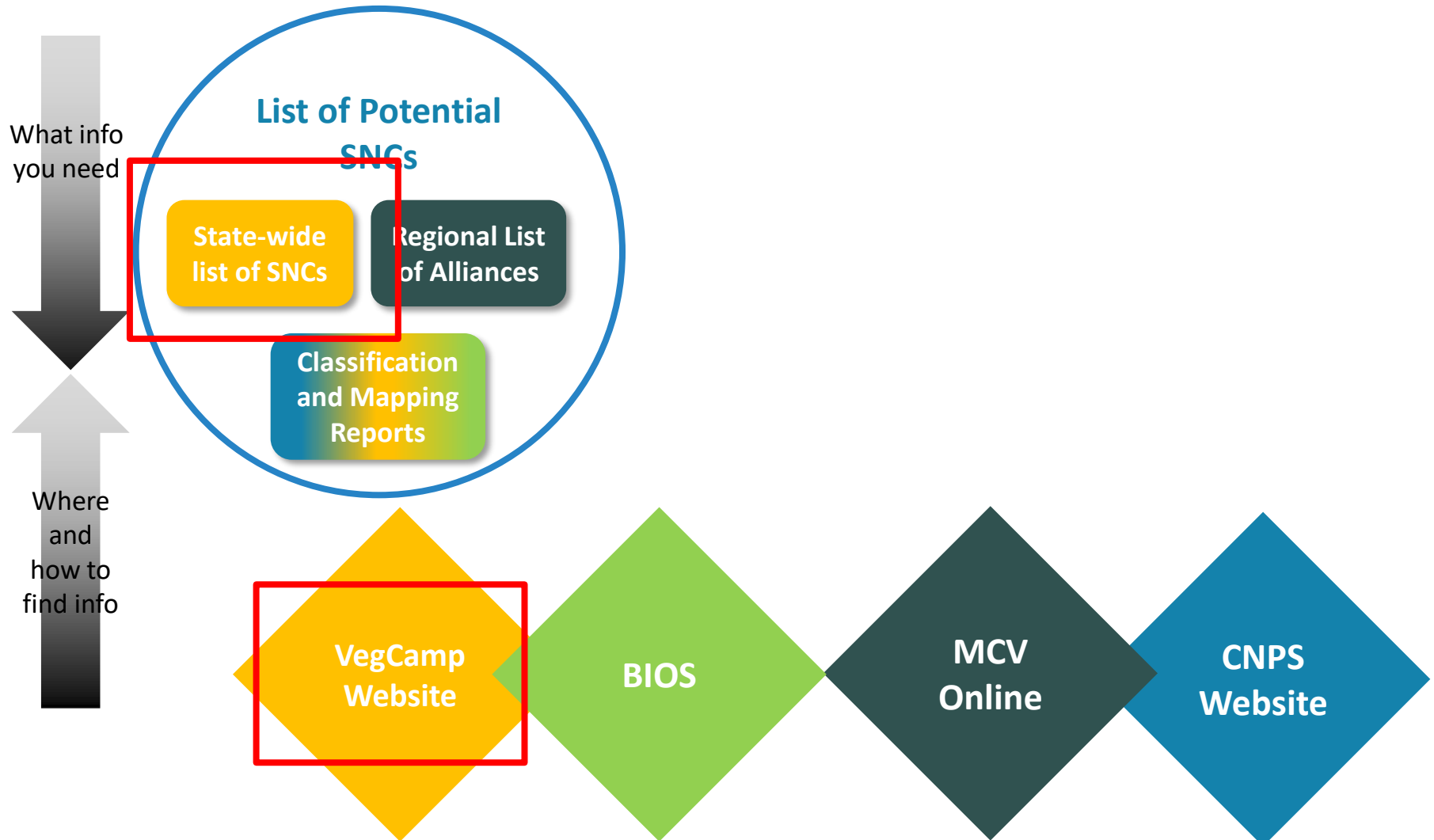


WHICH NATURAL COMMUNITIES ARE SNCS IN MY AREA OF INTEREST?  
DO I HAVE SNCS IN MY AREA OF INTEREST?  
WHAT IS THE COMMUNITY COMPOSITION OF AN SNC?





# WHICH NATURAL COMMUNITIES ARE SNCS IN MY AREA OF INTEREST?



# SNC LIST



# VEGCAMP: ACCESSING THE SNC LIST

VegCAMP  
Website

<https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities>

Current SNC list  
download

Check against  
MCV Online and  
BIOS  
information

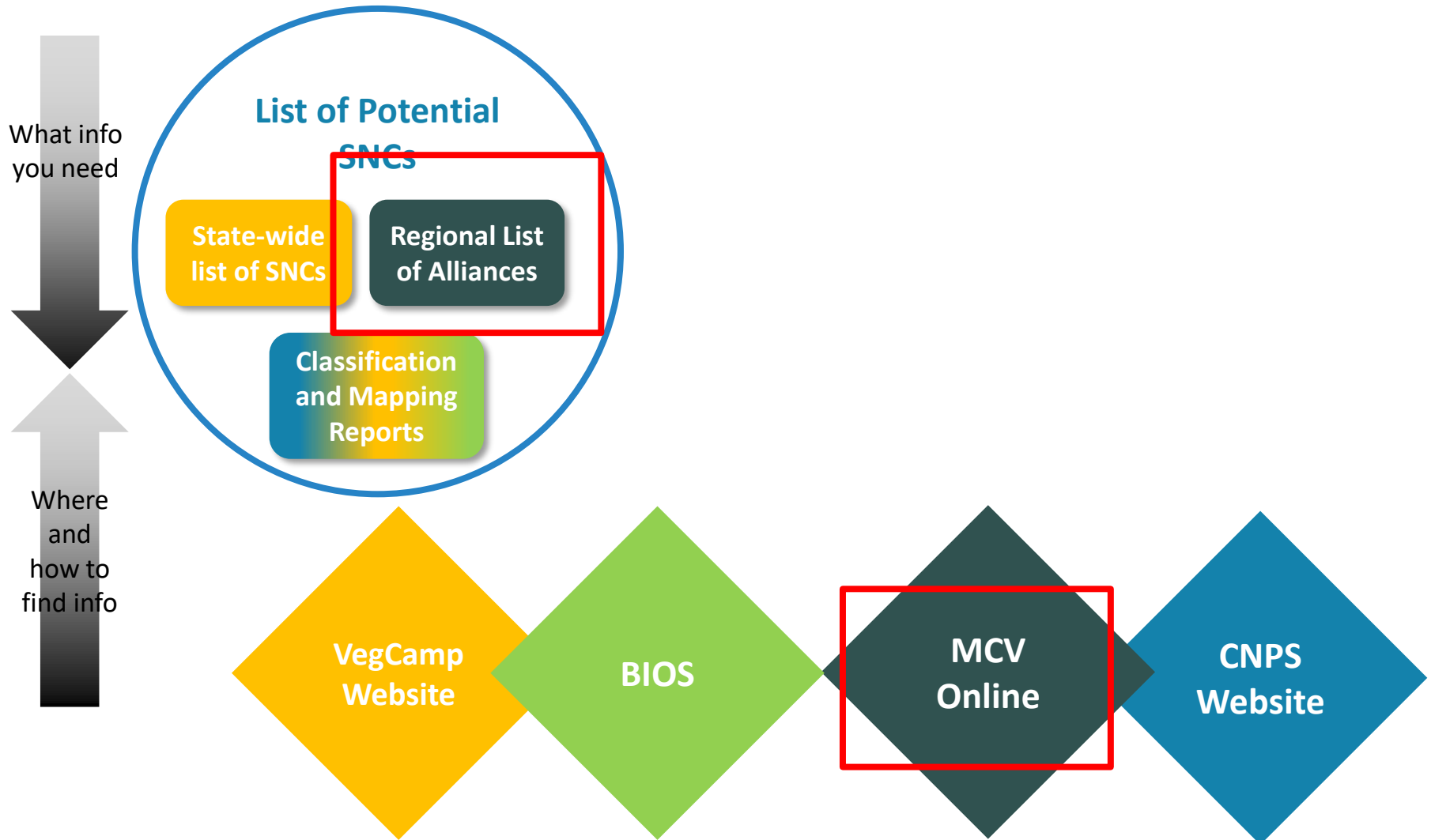
## *Quercus agrifolia*

### 71.060.00 Coast live oak woodland and forest

		Rarity	Sensitive
71.060.00	Coast live oak woodland and forest	G5 S4	
71.060.07	<i>Quercus agrifolia</i> / <i>Adenostoma fasciculatum</i> – ( <i>Salvia mellifera</i> )	G3 S3	Y
71.060.18	<i>Quercus agrifolia</i> – <i>Quercus kelloggii</i>		Y
71.060.26	<i>Quercus agrifolia</i> – <i>Arbutus menziesii</i> – <i>Umbellularia californica</i>	G3 S3	Y
71.060.37	<i>Quercus agrifolia</i> / <i>Quercus</i> ( <i>berberidifolia</i> , <i>xacutidens</i> )	G3 S3	Y
71.060.48	<i>Quercus agrifolia</i> – <i>Umbellularia californica</i>	G3 S3	Y
71.060.53	<i>Quercus agrifolia</i> – <i>Quercus tomentella</i> / ( <i>Prunus ilicifolia</i> ssp. <i>lyonii</i> )	Provisional	Y
71.060.54	<i>Quercus agrifolia</i> / <i>Quercus pacifica</i>		Y
71.060.55	<i>Quercus agrifolia</i> / <i>Arctostaphylos</i> ( <i>insularis</i> )	Provisional	Y
71.060.57	<i>Quercus agrifolia</i> / <i>Arctostaphylos</i> ( <i>crustacea</i> )	Provisional	Y

- Sensitive Natural Communities Only by Life Form (Excel)
- Recent changes in Natural Communities (PDF)
- Recent changes in Natural Communities Rarity (PDF)

# WHICH NATURAL COMMUNITIES ARE SNCS IN MY AREA OF INTEREST?

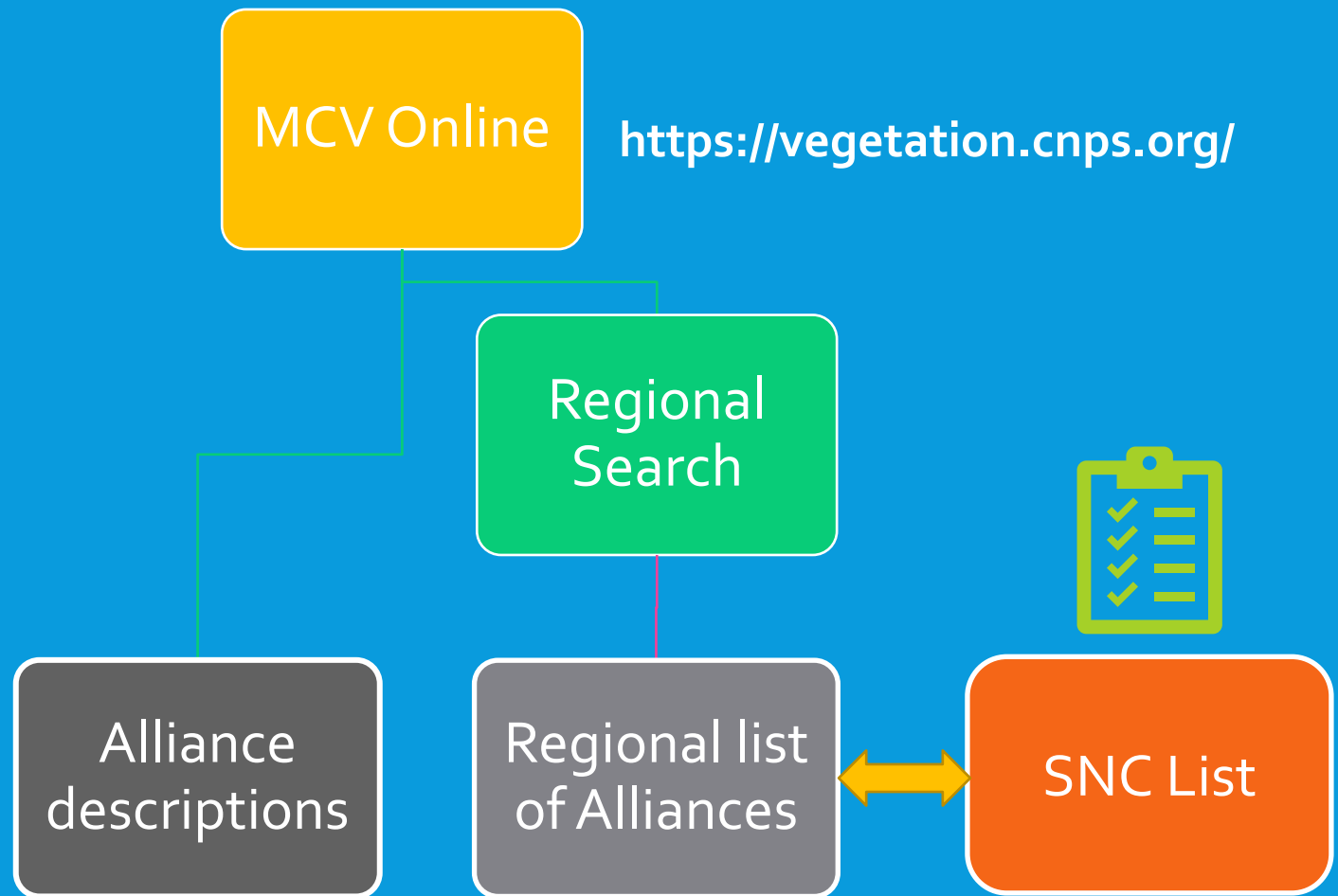




# MANUAL OF CALIFORNIA VEGETATION ONLINE

<https://vegetation.cnps.org/>

# MANUAL OF CALIFORNIA VEGETATION ONLINE





## Search

(160 results found for your search criteria 11/22/2021)

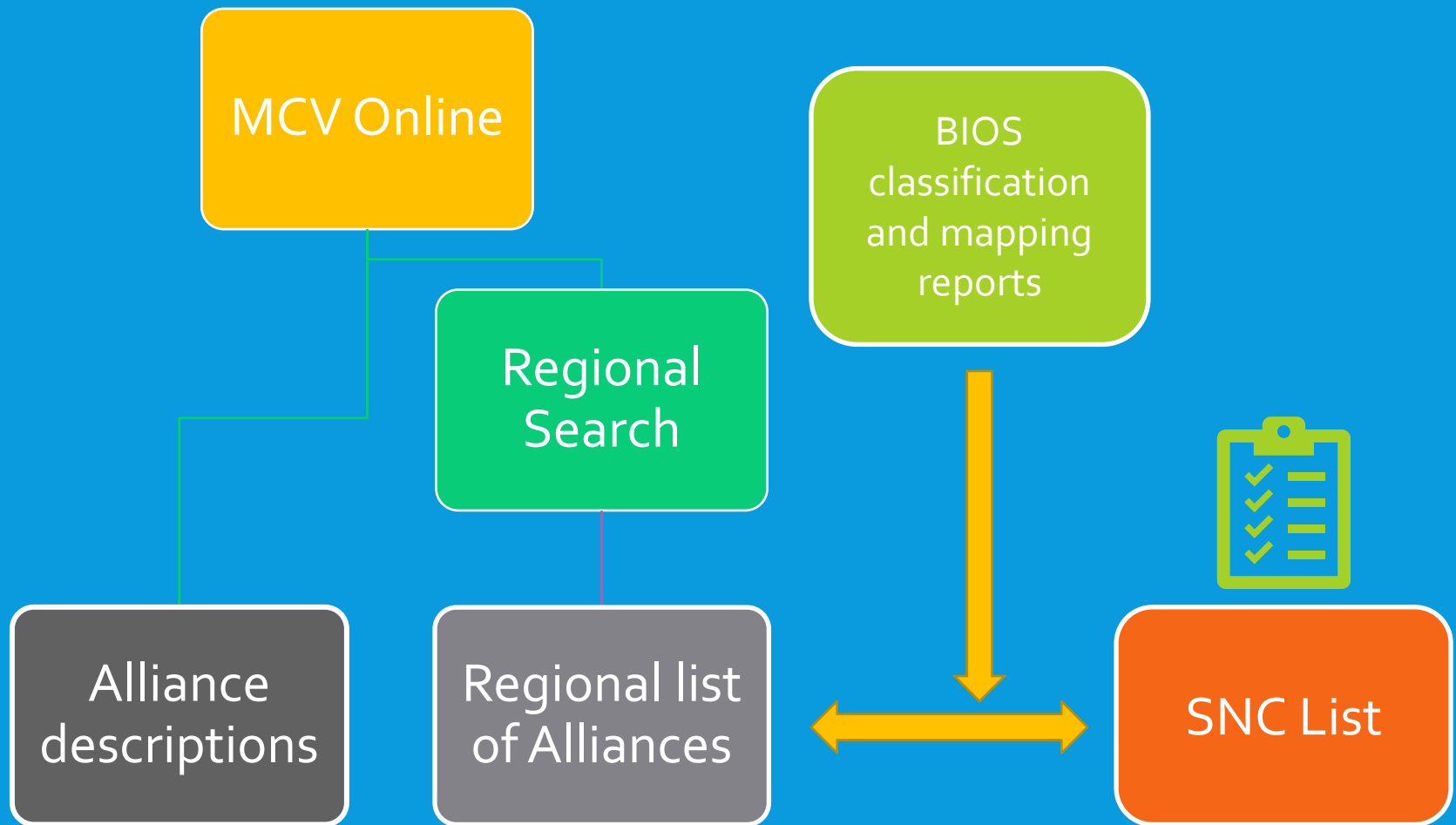
Show [5](#) [10](#) [25](#) [50](#) [All](#) (160 results)

Alliance Scientific Name	Common Name	Lifeform	CA Rarity	Global Rarity
<a href="#">Abies grandis</a>	Grand fir forest	Tree	S2.1	G4
<a href="#">Abronia latifolia</a> - <a href="#">Ambrosia chamissonis</a>	Dune mat	Herb	S3	G3
<a href="#">Acer macrophyllum</a>	Bigleaf maple forest and woodland	Tree	S3	G4
<a href="#">Acer negundo</a>	Box-elder forest and woodland	Tree	S2.2	G5
<a href="#">Adenostoma fasciculatum</a>	Chamise chaparral	Shrub	S5	G5
<a href="#">Aegilops triuncialis</a>	Barbed goatgrass patches	Herb	SNA	GNA
<a href="#">Aesculus californica</a>	California buckeye groves	Tree	S3	G3
<a href="#">Allium</a> spp. - <a href="#">Streptanthus</a> spp. - <a href="#">Hesperolinon</a> spp. <a href="#">Serpentine</a>	Onion - twistflower - dwarf-flax serpentine rock outcrop	Herb	S2S3	G2G3
<a href="#">Alnus rhombifolia</a>	White alder groves	Tree	S4	G4
<a href="#">Alnus rubra</a>	Red alder forest	Tree	S4	G5
<a href="#">Alnus viridis</a>	Sitka alder thickets	Shrub	S3?	G5
<a href="#">Alopecurus geniculatus</a>	Water foxtail meadows	Herb	S3?	G3?
<a href="#">Ammophila arenaria</a>	European beach grass swards	Herb	SNA	GNA
<a href="#">Arbutus menziesii</a>	Madrone forest	Tree	S3.2	G4
<a href="#">Arctostaphylos</a> ( <a href="#">bakeri</a> , <a href="#">montana</a> )	Baker's or Mt. Tamalpais manzanita chaparral	Shrub	S3	G3
<a href="#">Arctostaphylos</a> ( <a href="#">canescens</a> , <a href="#">manzanita</a> , <a href="#">stanfordiana</a> )	Hoary, common, and Stanford manzanita chaparral	Shrub	S3	G3
<a href="#">Arctostaphylos glandulosa</a>	Eastwood manzanita chaparral	Shrub	S4	G4
<a href="#">Arctostaphylos</a> ( <a href="#">nummularia</a> , <a href="#">sensitiva</a> ) - <a href="#">Chrysolepis chrysophylla</a>	Glossy leaf manzanita - Golden chinquapin chaparral	Shrub	S2	G2
<a href="#">Argentina egedii</a>	Pacific silverweed marshes	Herb	S1	G4
<a href="#">Aristida purpurea</a> - <a href="#">Elymus elymoides</a> - <a href="#">Poa secunda</a>	Purple three-awn - squirreltail - curly blue grass patches	Herb	S4?	G4
<a href="#">Artemisia californica</a> - ( <a href="#">Salvia leucophylla</a> )	California sagebrush - (purple sage) scrub	Shrub	S5	G5
<a href="#">Atriplex prostrata</a> - <a href="#">Cotula coronopifolia</a>	Fields of fat hen and brass buttons	Herb	SNA	GNA
<a href="#">Avena</a> spp. - <a href="#">Bromus</a> spp.	Wild oats and annual brome grasslands	Herb	SNA	GNA
<a href="#">Azolla</a> ( <a href="#">filiculoides</a> , <a href="#">microphylla</a> )	Mosquito fern mats	Herb	S5	G5
<a href="#">Baccharis pilularis</a>	Coyote brush scrub	Shrub	S5	G5

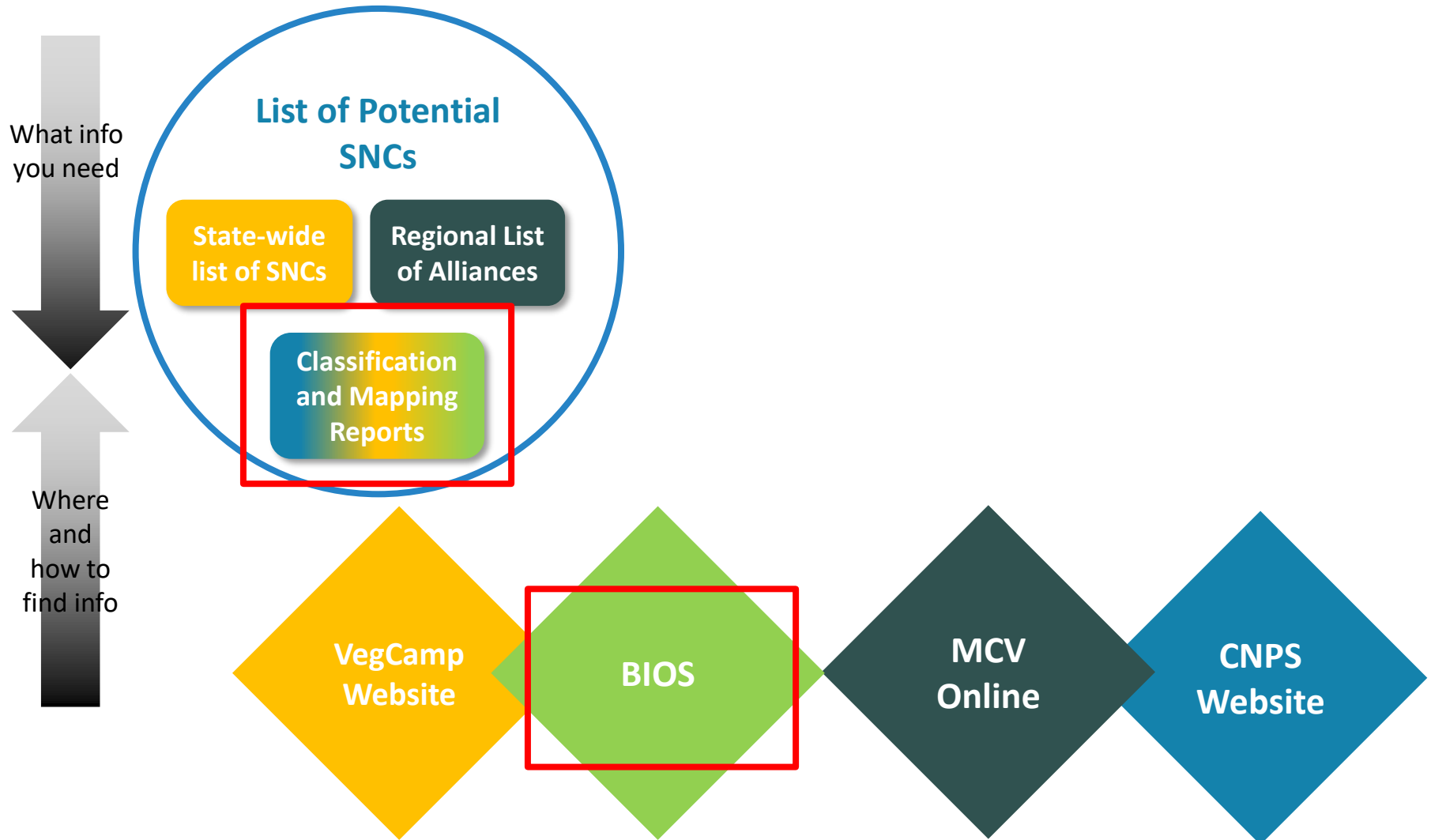
1 2 3 4 5 6 7 Next »

[Download Results](#)

# MANUAL OF CALIFORNIA VEGETATION ONLINE



# WHICH NATURAL COMMUNITIES ARE SNCS IN MY AREA OF INTEREST?



# BIOS

Biogeographic Information and Observation  
System

<https://apps.wildlife.ca.gov/bios/>

Basemaps

Layers

**Active Layer:** Vegetation (MCV / NVCS) Mapping  
Projects - California [ds515]

### Graphics and Selections

#### BIOS Layers

Remove All BIOS Layers

+ ☐ Coastal Sage Scrub (Interspace) -  
Western Riverside Co. - UCR CCB [ds634]



Go

X

- ☒ Vegetation (MCV / NVCS) Mapping  
Projects - California [ds515]



Go

X

#### ProjStatus

Map complete, based on local  
classification

Map complete, not based on local  
classification

Map not complete, will be based on  
local classification

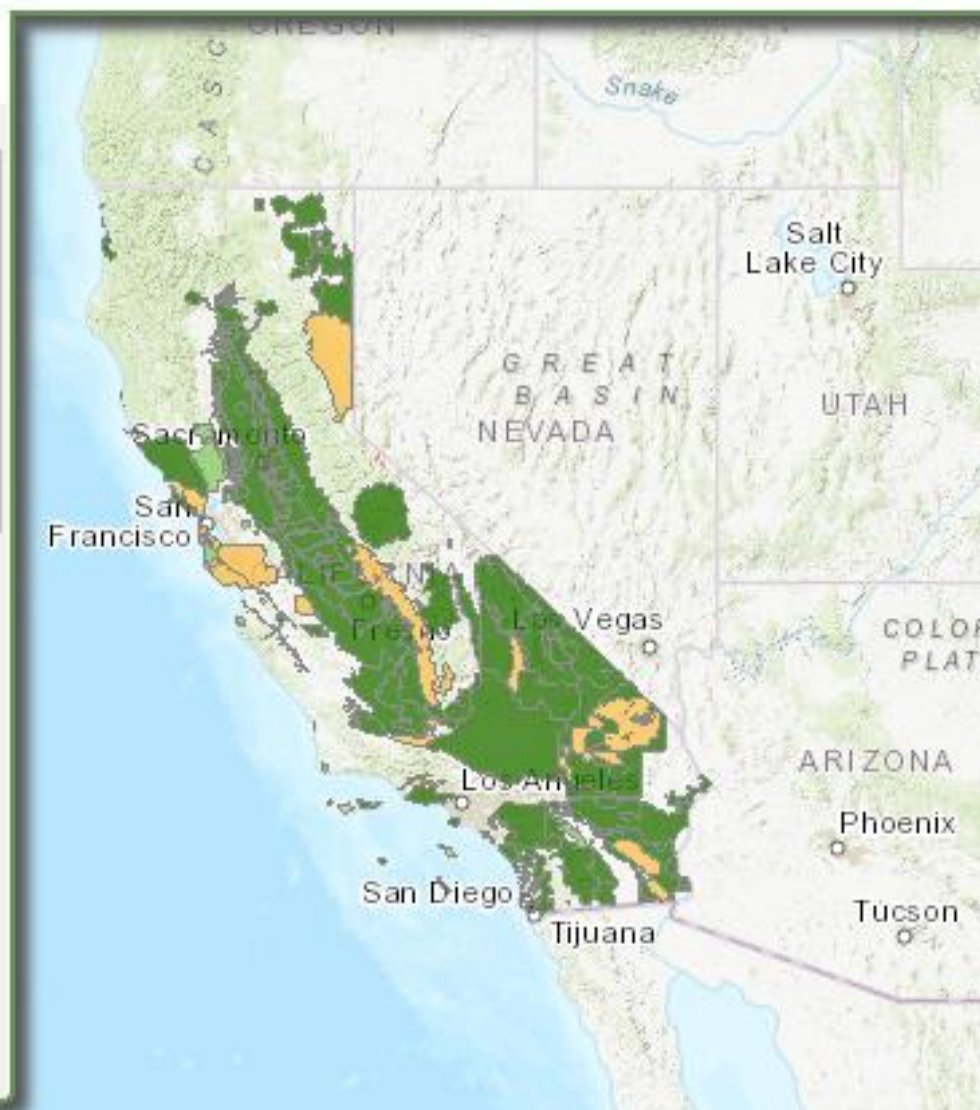
Map not complete, will not be based  
on local classification

+ ☐ Vegetation - Marin County Open Space  
District [ds9571]

Add Data: BIOS ▼

ds515

Identify Features ▼





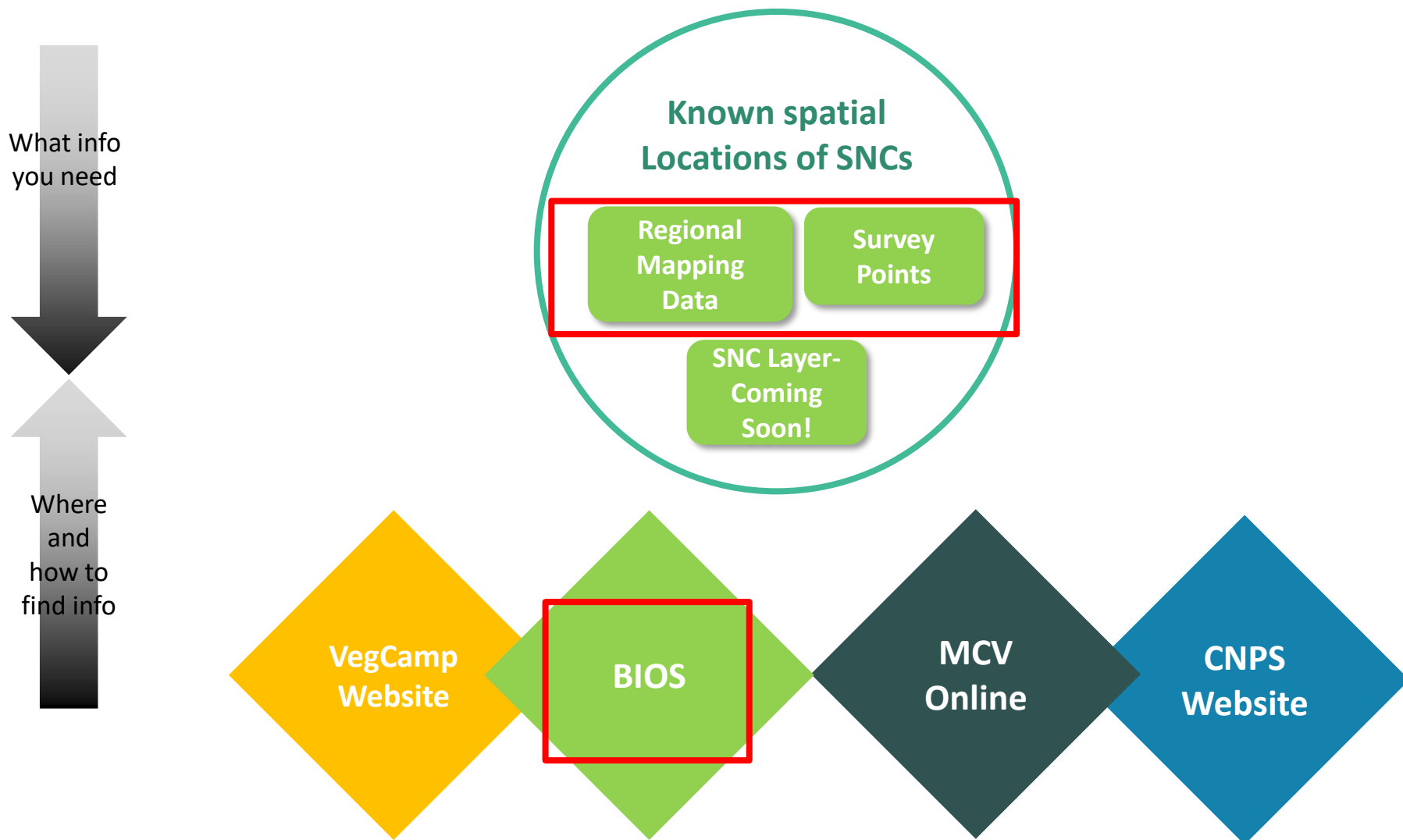
# GETTING TO ASSOCIATION DESCRIPTIONS

- Check classification and mapping reports for surveyed alliances and associations
- Alliance and association descriptions are also available

## Vegetation Classification of Alliances and Associations in Marin County, California

Lifeform				
Class & Subclass				
Formation	Division	Macrogroup	Group	Alliance
<b>1. Forest &amp; Woodland</b>				
<b>1.B. Temperate &amp; Boreal Forest &amp; Woodland</b>				
1.B.1	Warm Temperate Forest & Woodland			
	1.B.1.Nc.	Californian Forest & Woodland		
		M009	Californian Forest & Woodland	
			G195	Californian Broadleaf Forest & Woodland
				<i>Aesculus californica</i>
				<i>Quercus (agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni)</i>
				<i>Quercus agrifolia</i>
				<i>Quercus chrysolepis</i> (tree)
				<i>Quercus douglasii</i>
				<i>Quercus kelloggii</i>
				<i>Quercus lobata</i>
				<i>Quercus wislizeni</i> – <i>Quercus parvula</i>
				<i>Umbellularia californica</i>
			G198	Californian Conifer Forest & Woodland
				<i>Hesperocyparis (sargentii, macnabiana)</i>
				<i>Pinus muricata</i> – <i>Pinus radiata</i>
		M513	Californian Ruderal Forest	
			G678	Californian Ruderal Forest
				<i>Eucalyptus</i> spp. – <i>Ailanthus altissima</i> – <i>Robinia pseudoacacia</i>
				<b><i>pseudoacacia</i></b>
				<i>Acacia melanoxydon</i> *
				<i>Eucalyptus (globulus, camaldulensis)</i>
				<b><i>Fraxinus latifolia</i>*</b>
				<i>Fraxinus latifolia</i> *
				0
				2
				0

## DO I HAVE SNCS IN MY AREA OF INTEREST?



Basemaps

Layers

**Active Layer:** Vegetation (MCV / NVCS) Mapping  
Projects - California [ds515]

### Graphics and Selections

#### BIOS Layers

Remove All BIOS Layers

+ ☐ Coastal Sage Scrub (Interspace) -  
Western Riverside Co. - UCR CCB [ds634]



Go



- ☒ Vegetation (MCV / NVCS) Mapping  
Projects - California [ds515]



Go



#### ProjStatus



Map complete, based on local  
classification



Map complete, not based on local  
classification



Map not complete, will be based on  
local classification



Map not complete, will not be based  
on local classification

+ ☐ Vegetation - Marin County Open Space  
District [ds957]



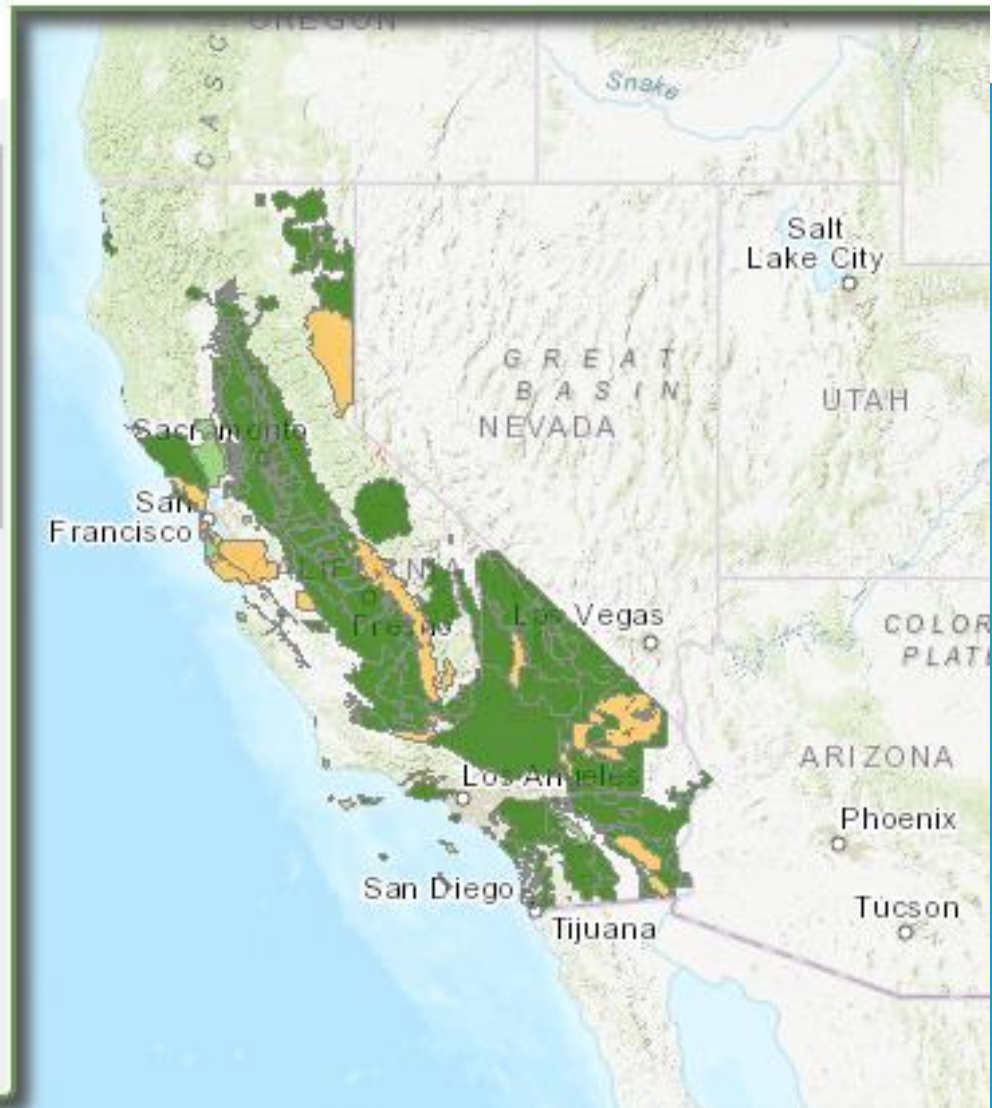
Go



Add Data: BIOS ▾

ds515

Identify Features ▾



# BIOS

## GETTING SPATIAL OCCURRENCES OF SNC'S

Active Layer: Vegetation - Point Reyes [ds169]

[us 100]

Go

X

Go

X

Vegetation - Point Reyes [ds169]

MapClass

Bishop Pine - NA

Bishop Pine - Pinus muricata/Arbutus menziesii/Vaccinium ovatum

California Bay - NA


California Bay - Umbellularia californica/Lithocarpus densiflorus (preliminary)

California Bay - Umbellularia/Polystichum

California Bay - Umbellularia/Quercus agrifolia/Toxicodendron

California Buckeye - NA

Coast Live Oak - NA



Table

There is an inherent margin of error in the use of aerial photography for vegetation delineation and classification.

Last Updated In BIOS On:  
09/25/2014

Contact Information

Name: Karl Brown

Organization: National Park Service Natural Resource Stewardship and Science

Phone: (970) 225-3591

Email: karl\_brown@nps.gov

[Complete metadata](#) [Download data](#)

Vegetation - Point Reyes [ds169]

Selected features: 119

Zoom		NVCSName	NVCSLevel		GlobalRank	StateRank	CACode	Rare	
1	<a href="#">Go</a>	Pseudotsuga menziesii	Alliance	Douglas-fir - NA	G5	S4	82.200.00	No	I
2	<a href="#">Go</a>	Frangula californica	Alliance	Coffeeberry - NA	G4	S4	37.920.00	No	I
3	<a href="#">Go</a>	Baccharis pilularis / Native Grass (Mixed)	Association	Coyote Brush - B.p. consanguinea			32.060.21	No	partly
4	<a href="#">Go</a>	Umbellularia californica / Polystichum munitum	Association	California Bay - Umbellularia			74.100.08	Yes	I



# BIOS

## GETTING SPATIAL OCCURRENCES OF SNC'S

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE BIOS

Basemaps Layers

Active Layer: Vegetation Survey Points - CDFW [ds1020]

Graphics and Selections

☒ Identify Graphic

BIOS Layers

Remove All BIOS Layers

☒ Vegetation Survey Points - CDFW [ds1020]

SurveyType

▲

Rapid Assessment

▲

Releve

▲

Reconnaissance

▲

Return Recon

▲

Accuracy Assessment

▲

Field Verification

▲

Transect

■

Multivisit Rapid Assessment

■

Multivisit Releve

●

Other Plot

Add Data: BIOS ds515

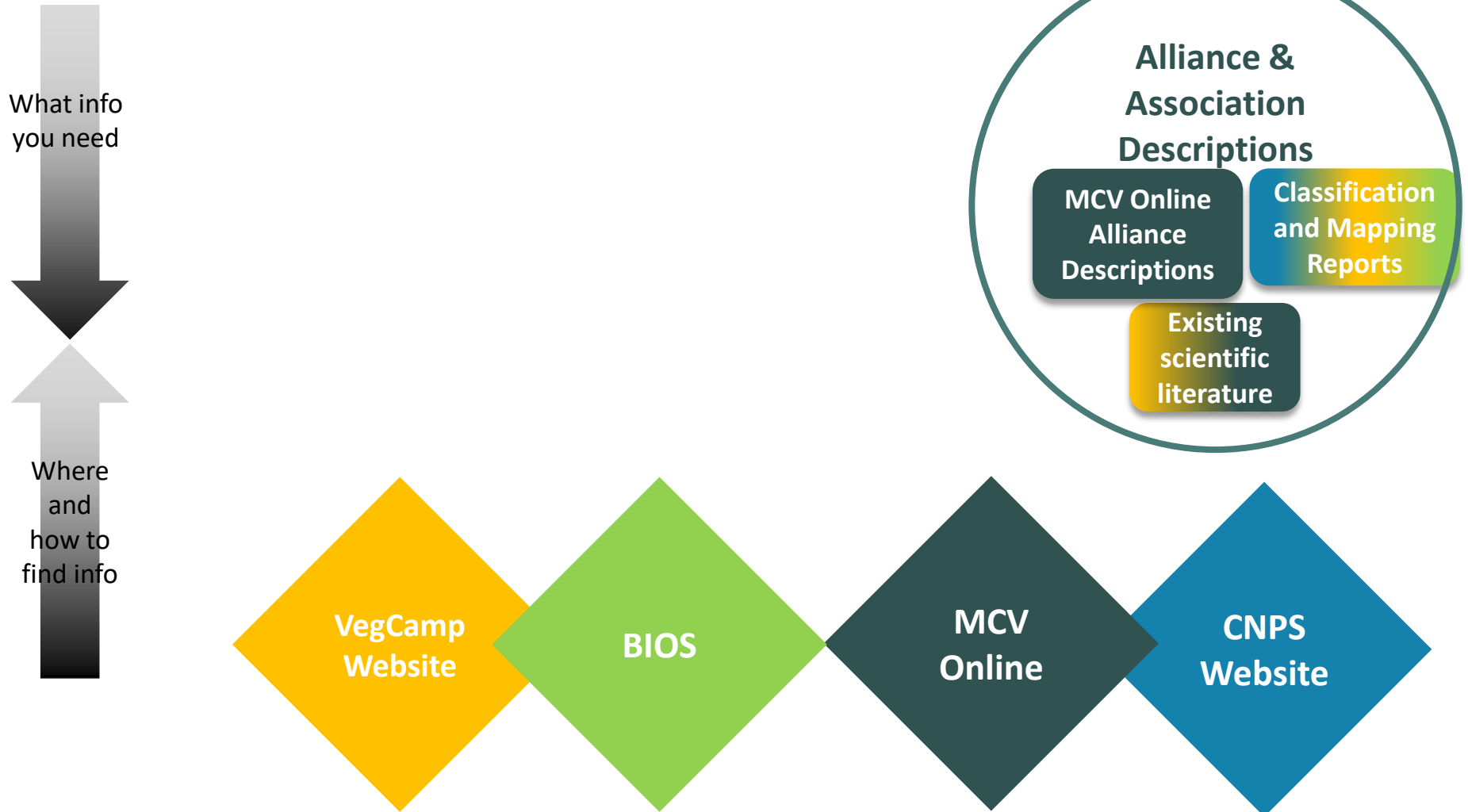
Identify Features

Advanced Tools

GlobalRank	StateRank	Rare	UTM E	UTM N	UTM Zone	XID	WaypointID	Stratum	CodeSpecies	Species name	SpeciesName	Species cover
G3	S3	Y	534,445	4,208,315	10	351,498	HEAD0129	Herb	LOPEM2	Lolium perenne L. ssp. multiflorum (Lam.) Husnot	Lolium perenne ssp. multiflorum	38



## WHAT IS THE COMMUNITY COMPOSITION OF AN SNC?



# MCV ONLINE ALLIANCE DESCRIPTIONS



## Search

(3 results found for your search criteria, 11/22/2021)

Alliance Name ?

Quercus agrifolia;

Species Name ?

Primary Life Form

☐ Tree

☐ Shrub

☐ Herb

Endemic To California

☐ Yes

☐ No

☒ Don't use this filter

Endemic to California Floristic  
Province and Deserts

☐ Yes

☐ No

☒ Don't use this filter

Elevation

Above(m)

Below(m)

USDA Ecological Section Map ◀

Global Rarity ?

☐ G1

☐ G2

☐ G3

☐ G4

☐ G5

☐ Other

California Rarity ?

☐ S1

☐ S2

☐ S3

☐ S4

☐ S5

☐ Other

Alliances Added Since ?

☒ Year

☐ Edition

Reset

Search

Show [5](#) [10](#) [25](#) [50](#) [All](#) (3 results)

Alliance Scientific Name	Common Name	Lifeform	CA Rarity	Global Rarity
<a href="#">Platanus racemosa - Quercus agrifolia</a>	California sycamore - coast live oak riparian woodlands	Tree	S3	G3
<a href="#">Quercus agrifolia</a>	Coast live oak woodland and forest	Tree	S4	G5
<a href="#">Quercus (agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni)</a>	Mixed oak forest and woodland	Tree	S4	G4

# MCV ONLINE BIBLIOGRAPHY



## *Quercus agrifolia* Forest & Woodland Alliance

Coast live oak woodland and forest

### Regional Status [\(hide\)](#)

- **Central California Coast** (261Aa-l). Stands described from Cone Peak Gradient RNA (Keeler-Wolf and Keeler-Wolf 1977, see Cheng 2004), John Muir National Historic Site (O'Neil and Egan 2004), the San Francisco Peninsula (Keeler-Wolf et al. 2003a), and are generally extensive in the section (Allen et al. 1989).
- **Central California Coast Ranges** (M262Aa-c, Ae-f, Ah, Aj). Stands occur at Coyote Ridge in the Diablo Range (Evens and San 2004), Wagon Caves RNA in the Santa Lucia Mountains (Keeler-Wolf 1989a, see Cheng 2004), at Pinnacles National Monument in the Gabilan Range (Kittel et al. 2012), and generally in the section (Allen et al. 1989).
- **Great Valley** (262Ak-l). Stands were mapped in San Joaquin River Delta (Kreb et al 2019) and Great Valley (Buck-Diaz et al 2012).
- **Northern California Coast** (263Ac, Ag, Aj-m). Stands from Point Reyes National Seashore and on Mount Tamalpais in Marin Co. (Evens and Kentner 2006, Keeler-Wolf et al. 2003a), and from Mendocino and Napa Cos. (Allen et al. 1989) contain *Arbutus menziesii* and *Umbellularia californica*. The understories are commonly grassy.
- **Northern California Coast Ranges** (M261Bf). Stands occur in southeastern Napa Co. where *Q. douglasii* is a common associate (Thorne et al. 2004).
- **Northern California Interior Coast Ranges** (M261Ca). Stands occur in the southern end of the inner north Coast Ranges in eastern Napa County. In western Yolo County, some riparian stands extend almost to the edge of the Great Valley.
- **Sierra Nevada Foothills** (M261F). None
- **Southern California Coast** (261Ba-j). Stands are diverse in the Santa Monica Mountains (Keeler-Wolf and Evens 2006) and across the section (Allen et al. 1989). Stands occur on the larger northern Channel Islands (Junak et al. 2007, Philbrick and Haller 1977), including well-developed stands on Santa Cruz Island (TNC 2007).

### References [\(hide\)](#)

- [1] Allen, B.H.;Evet, R.R. ;Holzman, B.A.;Martin, A.J. 1989
- [2] Campbell, B. 1980
- [3] Evens, J.M.;Kentner, E. 2006
- [4] Evens, J.;San, S. 2004
- [5] Evens, J.;San, S. 2005
- [6] Gordon, H.J.;White, T.C. 1994
- [8] Keeler-Wolf, T. 1990a

- Barbour, M.G. 1988
- Barry, W.J. 1989a

# MCV BIBLIOGRAPHY

**CNPS**  
*California Native Plant Society*  
A Manual of California Vegetation Online



## Bibliography

- Allen, B. H., R. R. Evett, B. A. Holzman, and A. J. Martin. 1989. Report on rangeland cover type descriptions for California hardwood rangelands. Department of Forestry and Fire Protection and Department of Forestry and Resource Management, Berkeley, CA.
- Allen, B. H., B. A. Holzman, and R. R. Evett. 1991. A classification system for California's hardwood rangelands. *Hilgardia* **59**:1—45.
- Buck, J., and J. Evens. 2010. Classification of vegetation associations from the Marin County Open Space District in Marin County, California. Report Submitted to Marin County Department of Parks and Open Space California Native Plant Society, Sacramento, CA.
- Buck-Diaz, J., S. Batiuk, and J. M. Evens. 2012. Vegetation Alliances and Associations of the Great Valley Ecoregion, California. California Native Plant Society. Available:  
[http://www.cnps.org/cnps/vegetation/pdf/great\\_valley\\_eco-vegclass2012.pdf](http://www.cnps.org/cnps/vegetation/pdf/great_valley_eco-vegclass2012.pdf)
- Buck-Diaz, J., and J. Evens. 2011a. Alluvial Scrub Vegetation of Southern California, A Focus on the Santa Ana River Watershed in Orange, Riverside, and San Bernardino Counties, California. Available: [http://cnps.org/cnps/vegetation/pdf/alluvial\\_scrub-diaz\\_evans2011.pdf](http://cnps.org/cnps/vegetation/pdf/alluvial_scrub-diaz_evans2011.pdf)
- Buck-Diaz, J., and J. Evens. 2011b. Carrizo Plain National Monument vegetation classification and mapping project. California Native Plant Society, Sacramento, CA. Available:  
[http://www.cnps.org/cnps/vegetation/pdf/carrizo-vegetation\\_rpt2011.pdf](http://www.cnps.org/cnps/vegetation/pdf/carrizo-vegetation_rpt2011.pdf)

Jump To Map Search

Jump To Advanced Search

## More about the Manual

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- » [Overview Chapters](#)
- » [Appendices](#)
- » [Buy the book](#)

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- » [Classification Conversion](#)

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- » [Bibliography](#)
- » [Related Websites](#)



# GETTING TO ALLIANCE & ASSOCIATION DESCRIPTIONS

- Check classification and mapping reports for surveyed alliances and associations

## *Quercus agrifolia* – *Arbutus menziesii* – *Umbellularia californica* Association

**Common Name:** Coast Live Oak – Madrone – California Bay Woodland

**Alliance:** *Quercus agrifolia* Forest & Woodland Alliance

### Local Vegetation Description

The Coast Live Oak – Madrone – California Bay Association forms an intermittent to continuous tree canopy with a sparse to intermittent shrub understory. The dominant tree is *Quercus agrifolia* and those that are characteristic or often present include *Arbutus menziesii* and *Umbellularia californica*. Commonly associated shrubs include *Toxicodendron diversilobum*, *Diplacus aurantiacus* and *Lonicera hispidula*.

Lifeform	Cover (%)		Height (m)	
	Mean	Range	Mean	Range
Conifer	0.9	0 – 5	10.7	2 – 20
Hardwood	48.8	17 – 85	10.3	2 – 20
Regenerating or Shrubby Tree	1.0	0 – 10.2	3.5	1 – 10
Shrub	9.5	0 – 50	1.6	0 – 5
Herb	20.2	0 – 80	0.3	0 – 1

### Local Environmental Description

**Elevation:** Mean 215 m, Range 13 – 461 m

**Aspect:** NE (6), SW (6), SE (5), NW (4), Variable (4)

**Slope:** Mean 22 degrees, Range 2 – 70 degrees

**Macro Topography:** Middle 1/3 of slope (8), Upper 1/3 of slope (6), Ridge top (5), Lower 1/3 of slope (3), Bottom (1), Entire slope (1)

**Large Rock:** Mean 0.6%, Range 0 – 5.0%

**Small Rock:** Mean 2.4%, Range 0 – 24.0%

**Fines Cover:** Mean 6.8%, Range 0.2 – 30.0%

**Litter Cover:** Mean 77.1%, Range 1 – 96%

**Soil Texture (field assessed):** Medium loam (6), Moderately fine clay loam (6), Moderately coarse, sandy loam (4), Moderately fine sandy clay loam (3), Moderately fine silty clay loam (3), Medium to very fine, loamy sand (1)

**Geology (field or map data):** Franciscan melange (20), Sandstone and other sedimentary (9), Clayey alluvium (1), Conglomerate (1)

**Marin County Watersheds:** San Rafael (18), Novato (7), Lagunitas Creek (3), Bolinas (2), Walker Creek (1)

### Site Impacts

This association has low non-native plant cover (average 11.6%) relative to native cover. Non-native species that occur with highest frequency and abundance include *Briza maxima*, *Carduus pycnocephalus* and *Cynosurus echinatus*.

### Classification Comments

None.

**References:** Evens and Kentner 2006, Keeler-Wolf et al. 2003a, Klein et al. 2015

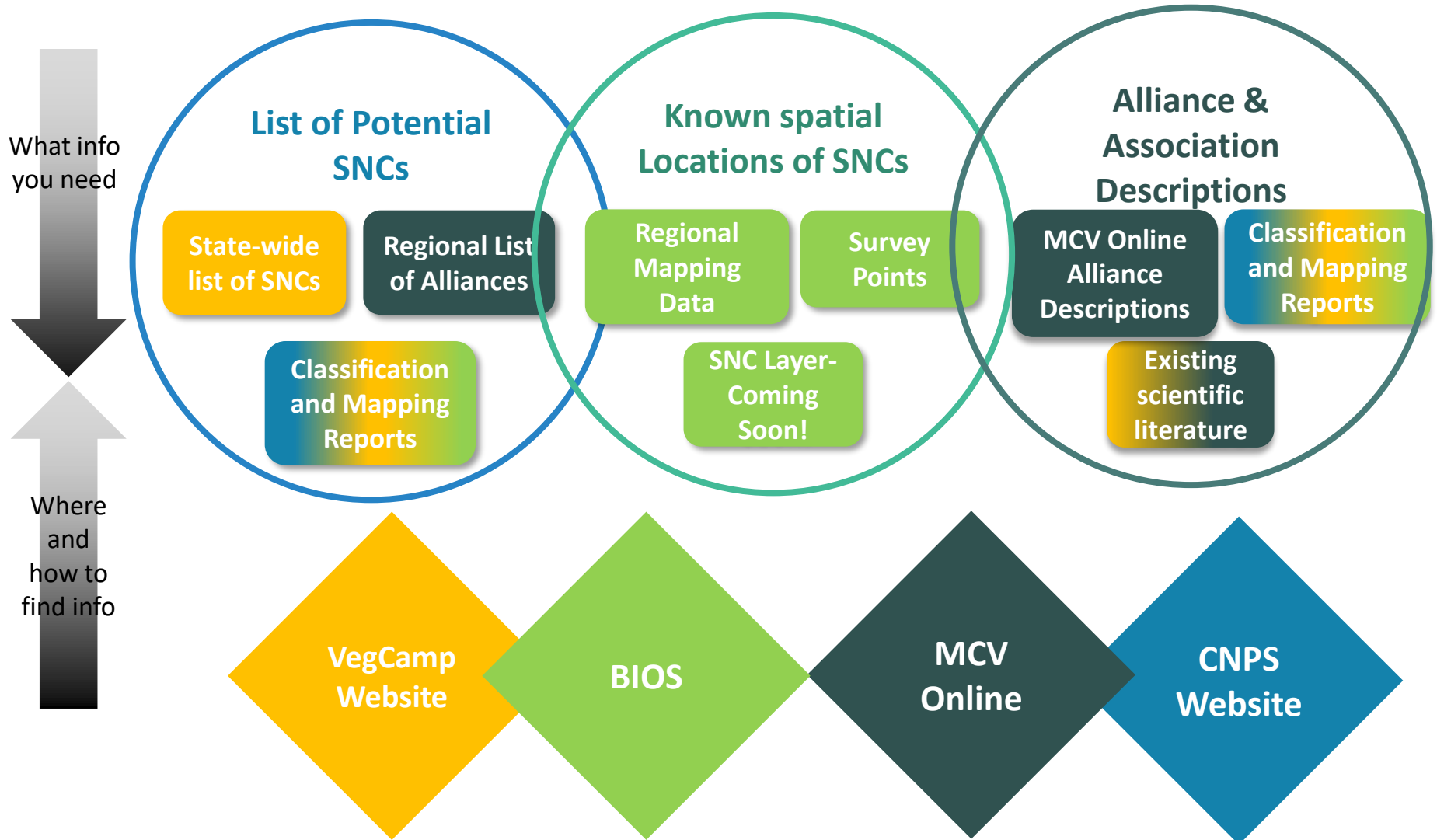
**Global Rarity Rank:** G3

**State Rarity Rank:** S3

**State Rare:** Y



WHICH NATURAL COMMUNITIES ARE SNCS IN MY AREA OF INTEREST?  
DO I HAVE SNCS IN MY AREA OF INTEREST?  
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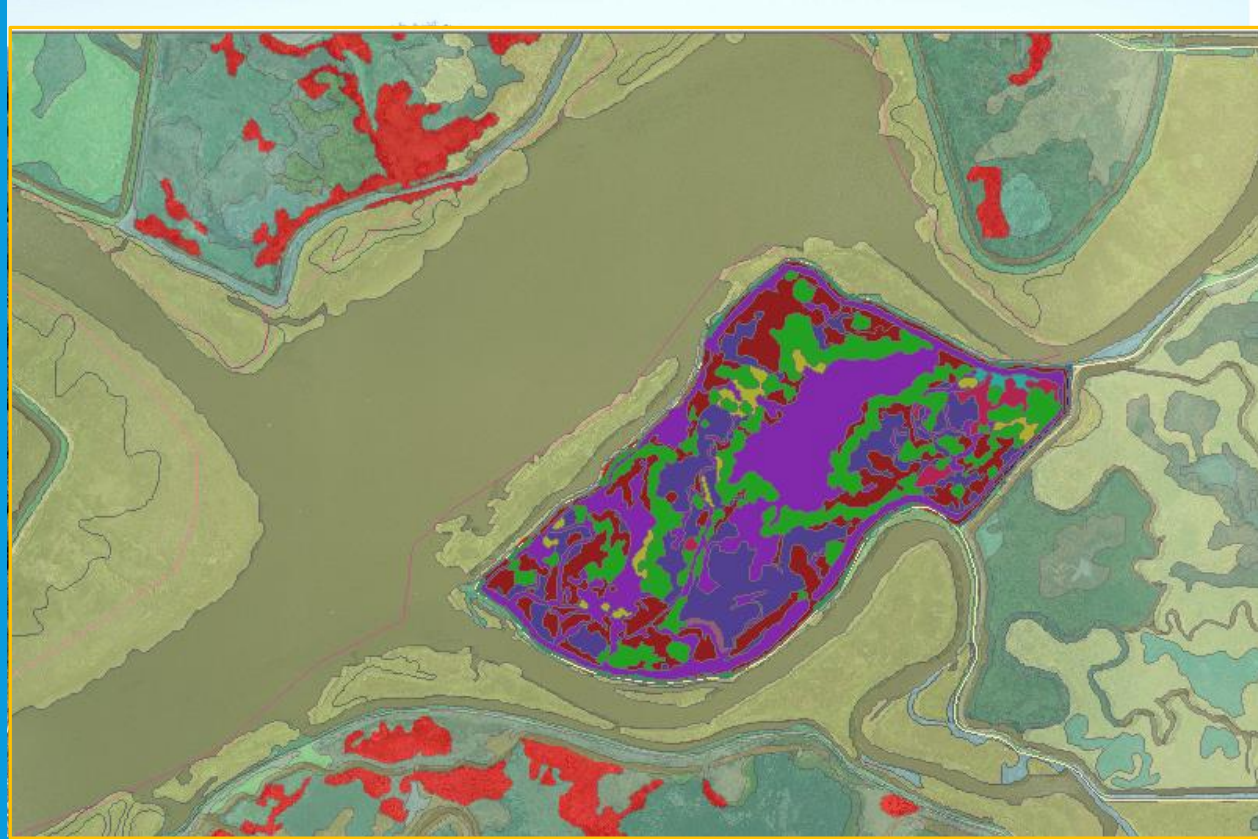


# MAP DATA USES & LIMITATIONS

- Mapping natural communities is a necessary part of biological inventory if we believe they are elements of conservation
- When using mapping data be aware of its potential limitations considering your project goals
  - Scale of imagery scale vs on the ground scale of vegetation stands
  - Be aware of minimum mapping unit and that this can impact detection of SNCs
  - Embedded associations that are sensitive under non-sensitive alliances
  - Review accuracy assessment of mapped vegetation types

# THE IMPORTANCE OF SCALE: BALANCE OF EFFICIENCY AND REPRESENTATION

- General rule:
- Where fine scale patterning prevails, map it as closely as possible
- That said: there must be compromises
  - Size and needs of project dictate decisions in map scale leading to variable mmu





# Working within the Hierarchy to ensure continuity

## Vulpia microstachys -Navarretia tagetina association

*Bromus hordeaceus* - *Lupinus nanus* - *Trifolium* spp. Herbaceous Association (Provisional)  
Soft Chess - Sky Lupine - Clover Herbaceous Association (Provisional)

**SUMMARY**  
In the stands sampled, the herbaceous canopy was intermittent to continuous and characterized by *Trifolium hirtum* at <1-55% cover and *Hypochaeris glabra* at <1-30% cover. Other dominant plants included *Lupinus* species: *Lupinus nanus* and *Lupinus bicolor* at up to 76% and 21% cover, respectively. Other species of *Trifolium* often present included *Trifolium dubium* and *Trifolium microcephalum*. Other taxa that were often present included *Aira caryophylla*, *Bromus hordeaceus*, *Castilleja attenuata*, *Erodium botrys*, *Lotus micranthus*, *Lupinus nanus*, and *Trifolium eriantha* subsp. *eriantha*.

This association was sampled infrequently in the study area within the central and northern Sierra Nevada Foothills and Sacramento Valley Subregions (Hickman 1993). Stands sometimes occurred on metamorphic (including slate and serpentine) and volcanic (including rhyolite) substrates and infrequently on granitic or sedimentary substrates. They occupied a variety of upland slope positions from bottoms to upper slopes and ridgetops. Slopes were flat to somewhat steep.

### DISTRIBUTION IN STUDY AREA

This association was sampled in El Dorado, Mariposa, Sacramento, and Tuolumne Counties, within the Camanche Terraces (262Aa) and Lower Foothills Metamorphic Belt (M261Fb) USDA Ecological Subsections (Miles and Goudey 1997).

### LOCAL VEGETATION DESCRIPTION

	Mean %	Range %	Height (m)
Total vegetation cover	76.2	60-99	-
Herb	75.8	60-99	variable
Shrub	0	-	-
Low Tree/Tall Shrub	0	-	-
Hardwood	0.1	0-1	5-10
Conifer	0.4	0-4	10-20
Relative non-native to native cover	67.6	42-95	-

### LOCAL ENVIRONMENTAL DESCRIPTION

Aspect: Flat (3), W (1), Variable (1), SW (1), SE (1), NW (1), E (1)  
Macrotopography: bottom (1), lower slope (4), upper slope (1), ridgetop (2)  
Microtopography: flat (5), convex (2), concave (1)  
Parent Material: slate (2), volcanic (2), granitic (1), metamorphic (1), rhyolite (1), sedimentary (1), serpentine (1)  
Soil Texture: silt or silt loam (3), loam or sandy loam (2)

	Mean	Range
Elevation	880 ft.	382-1810 ft.
Slope	8.3°	0-29°
Large rock cover	8.4%	0-40%
Small rock cover	17.1%	<1-45%
Bare ground cover	31.4%	1-74%
Litter cover	40.2%	3-92%

*Vulpia microstachys* - *Navarretia tagetina* Herbaceous Association  
Small Fescue - Marigold Pincushionplant Herbaceous Association

### SUMMARY

In the stands sampled, the herbaceous canopy was open to intermittent and characterized most strongly by *Navarretia tagetina* at <1-14% cover and *Vulpia microstachys* at <1-40% cover. Additional characteristic taxa included *Bromus hordeaceus*, *Hemizonia filifolia*, and *Plantago erecta*.

In the study area, this association was sampled frequently within the Cascade Range Foothills and infrequently in the High Cascade Range Subregions (Hickman 1993). Stands consistently occurred on volcanic (including basalt) substrates. They occupied a variety of upland slope positions, from bottoms to upper slopes and ridgetops, and were found occasionally on mesas/plateaus. Slopes were flat to moderate.

### DISTRIBUTION IN STUDY AREA

This association was sampled in Butte and Tehama Counties, within the Tuscan Flows (M261Fa) USDA Ecological Subsection (Miles and Goudey 1997).

### LOCAL VEGETATION DESCRIPTION

	Mean %	Range %	Height (m)
Total vegetation cover	38.3	18-65	-
Herb	38.2	18-65	<0.3
Shrub	0	-	-
Low Tree/Tall Shrub	0	-	-
Hardwood	0	-	-
Conifer	0	-	-
Relative non-native to native cover	10.9	2-45	-

### LOCAL ENVIRONMENTAL DESCRIPTION

Aspect: Flat (6), SE (5), W (3), NW (3), SW (2), E (1)  
Macrotopography: bottom (1), lower slope (1), middle slope (6), upper slope (6), mesa/plateau (3), ridgetop (3)  
Microtopography: flat (13), undulating (7)  
Parent Material: volcanic (16), basalt (4)  
Soil Texture: clay or clay loam (8), loam or sandy loam (7), silt or silt loam (3)

	Mean	Range
Elevation	1039 ft.	312-2907 ft.
Slope	4.1°	0-12°
Large rock cover	6.5%	0-48%
Small rock cover	21.5%	2-43%
Bare ground cover	25.9%	6-55%
Litter cover	42.1%	12-87%

### SAMPLES USED TO DESCRIBE ASSOCIATION (n=20)

**Rapid Assessments:** SNNR0071, SNNR0091, SNNR0121, SNNR0166, SNNR0167, SNNR0170, SNNR0315, SNNR0391 **Relevés:** SNFN0157, SNFN0161, SNFN0167, SNFN0169, SNFN0235, SNFN0241, SNFN0242, SNFN0243, SNFN0318, SNFN0319, SNFN0328, SNFN0378

430

*Selaginella hansenii* - *Vulpia microstachys* Herbaceous Association  
Hansen's Spikemoss - Small Fescue Herbaceous Association

### SUMMARY

In the stands sampled, the canopy was open to continuous, with the cryptogam *Selaginella hansenii* dominant at 1-76% cover and native grass *Vulpia microstachys* characteristic at 7-35% cover. Other herbaceous taxa that were often present included *Avena barbata*, *Bromus hordeaceus*, *Lessingia virgata*, *Petrorhagia dubia*, and *Plantago erecta*. *Ceanothus cuneatus* sometimes occurred as a scattered emergent shrub.

This association was sampled throughout the study area - frequently in the Cascade Range Foothills, somewhat frequently in the northern Sierra Nevada Foothills and High Cascade Range, and infrequently in the central Sierra Nevada Foothills Subregions (Hickman 1993). Stands

414

consistently occurred on volcanic (including basalt) substrates. They occupied a variety of upland slope positions from bottoms to ridgetops. They were found occasionally on mesas/plateaus, on slopes that varied from flat to steep.

### DISTRIBUTION IN STUDY AREA

This association was sampled in Butte, Shasta, Tehama, and Tuolumne Counties, within the Lower Foothills Metamorphic Belt (M261Fb) and Tuscan Flows (M261Fa) USDA Ecological Subsection(s) (Miles and Goudey 1997).

### LOCAL VEGETATION DESCRIPTION

	Mean %	Range %	Height (m)
Total vegetation cover	38.4	18-80	-
Herb	38.4	18-80	variable
Shrub	0.3	0-4	0-5
Low Tree/Tall Shrub	0	-	-
Hardwood	0.2	0-5	<5
Conifer	0.2	0-3	<5-20
Relative non-native to native cover	18.2	1-48	-

### LOCAL ENVIRONMENTAL DESCRIPTION

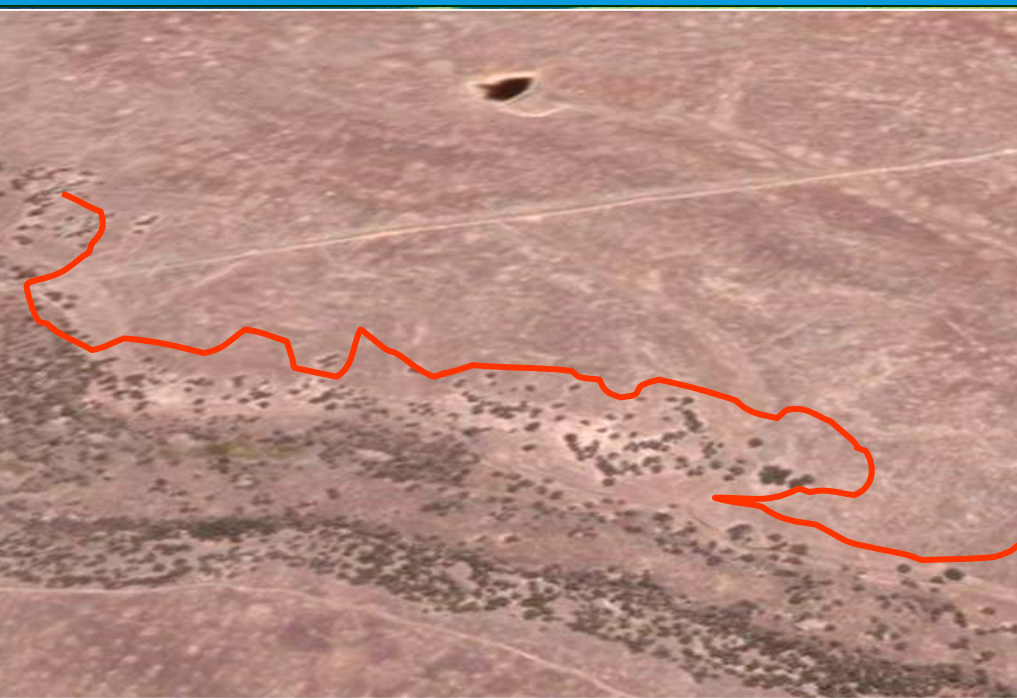
Aspect: S (8), SW (7), SE (6), W (5), Variable (2), E (2), NW (1), NE (1), Flat (2)  
Macrotopography: entire slope (1), bottom (2), lower slope (4), middle slope (12), upper slope (6), upper slope to ridgetop (1), mesa/plateau (3), ridgetop (4)  
Microtopography: undulating (17), convex (8), flat (8), concave (1)  
Parent Material: volcanic (32), basalt (2)  
Soil Texture: loam or sandy loam (14), clay or clay loam (4), sand (3), silt or silt loam (2)

	Mean	Range
Elevation	1352 ft.	285-3111 ft.
Slope	11.9°	0-36°
Large rock cover	21.2%	0-72.2%
Small rock cover	25.9%	1.2-88.2%
Bare ground cover	25.4%	2-75%
Litter cover	23.4%	1-70%

### SAMPLES USED TO DESCRIBE ASSOCIATION (n=34)

**Rapid Assessments:** SNNR0029, SNNR0033, SNNR0075, SNNR0178, SNNR0195, SNNR0196, SNNR0243, SNNR0325, SNNR0426, SNNR0446, SNNR0457, SNNR0455, SNNR0572, SNNR0791, SNNR0794, SNNR0957, SNNR0958, SNNR1071, SNNR1072, SNNR1304, SNNR1306 **Relevés:** SNFN0052, SNFN0096, SNFN0100, SNFN0171, SNFN0202, SNFN0203, SNFN0351, SNFN0353, SNFN0372, SNFN0403, SNFN0431, SNFN0439, SNFN0445





## Mediterranean Annual Vegetation in California:

Example of Solving Issues of Size, Complexity, and Discern-ability Using Group level

What may be distinguishable, but extremely complex in April....

may become indistinguishable in June, but it is all part of the same Group (California Annual Herb/Grass Group)

M045 Californian Annual & Perennial Grassland				
			G766 Californian Annual Grassland & Forb Meadow	
		A	A4182	Amsinckia menziesii - Amsinckia tessellata - Phacelia spp. Meadow Alliance
		A	A4153	Lasthenia californica - Plantago erecta - Vulpia microstachys Meadow Alliance
		A	A4171	Hemizonia fasciculata Meadow Alliance



# READ THE DESCRIPTIONS, SEE THEIR RELATIONSHIPS IN HIERARCHY

- Previous vegetation patterns aggregated at the group level mapping of the Great Valley Ecoregion

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE BIOS

Basemaps Layers

Active Layer: Vegetation - Great Valley Ecoregion [ds2632]

- Wislizenia refracta
- Yucca brevifolia

+ [x] Vegetation - Great Valley Ecoregion [ds2632] Go X

+ [x] California Natural Diversity Database (CNDDDB) Government [ds45] Go +

RF ? X

Reference Layers

Remove All Highlights

▼ Geolocation References

- + [x] Cities Go
- [x] Counties Go

+ [x] Ecoregion Sections Go

+ [x] WBD HUC8 Watersheds Go

+ [x] 24K Quads Go

+ [x] 24K Quads (New) Go

+ [x] Zip Codes Go

+ [x] PLSS Sections Go

+ [x] CDFW Regions Go

► Hydrography

▼ Natural Resources

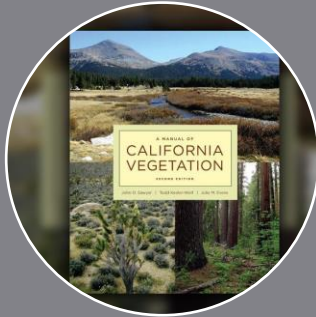
Map Scale=1: 18,056 (Zoom level 15)

Table

Vegetation - Great Valley Ecoregion [ds2632] Identified features: 1

Zoom	INVCNAME	INVCLEVEL	MAPCLASS	MAPCLASSCODE	RIP_GROUP	HT_CODE	SIZE_CATEGORY	PER_HARDWOOD	PER_CONIFE	PER_TREE	PER_SHRUB	HERB_CODE	PER_TOTAL_COVER	ISOLATED_TREE	JOSHUA_TREE	RESTORATION	CLEARING_DISTURBANCE	INVASIVE_PLANT	Ortho_Base_Ye
1	California annual forb/grass vegetation	Group	CFG		94	CFG	Null	0.2	0	0.2	0	10 - 39%	25	Y	Null	Null	Minimal Disturbance = 5-25%	No Invasive = <5%	20'

# ACCESSING INFORMATION ON SENSITIVE NATURAL COMMUNITIES: KNOWING YOUR TOOL KIT



CNPS: MCV ONLINE

SNC Descriptions\*

\*Alliance only



BIOS

Classification Reports  
for Association  
Descriptions

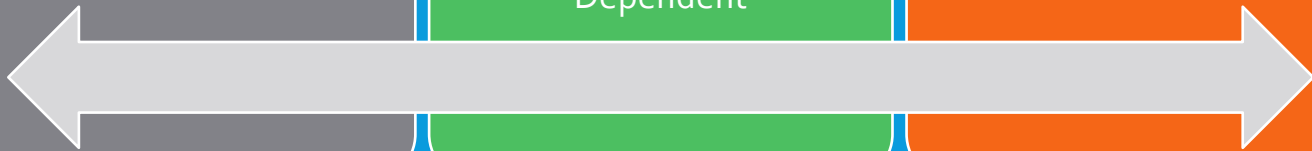
Spatial Distribution of  
SNCs\*

\*Project and Scale  
Dependent



VegCAMP

Current SNC List



Basemaps

Layers

**Active Layer:** Vegetation (MCV / NVCS) Mapping  
Projects - California [ds515]

### Graphics and Selections

#### BIOS Layers

Remove All BIOS Layers

+ ☐ Coastal Sage Scrub (Interspace) -  
Western Riverside Co. - UCR CCB [ds634]



Go

X

— ☒ Vegetation (MCV / NVCS) Mapping  
Projects - California [ds515]



Go

X

#### ProjStatus



Map complete, based on local  
classification



Map complete, not based on local  
classification



Map not complete, will be based on  
local classification



Map not complete, will not be based  
on local classification

+ ☐ Vegetation - Marin County Open Space  
District [ds9571]



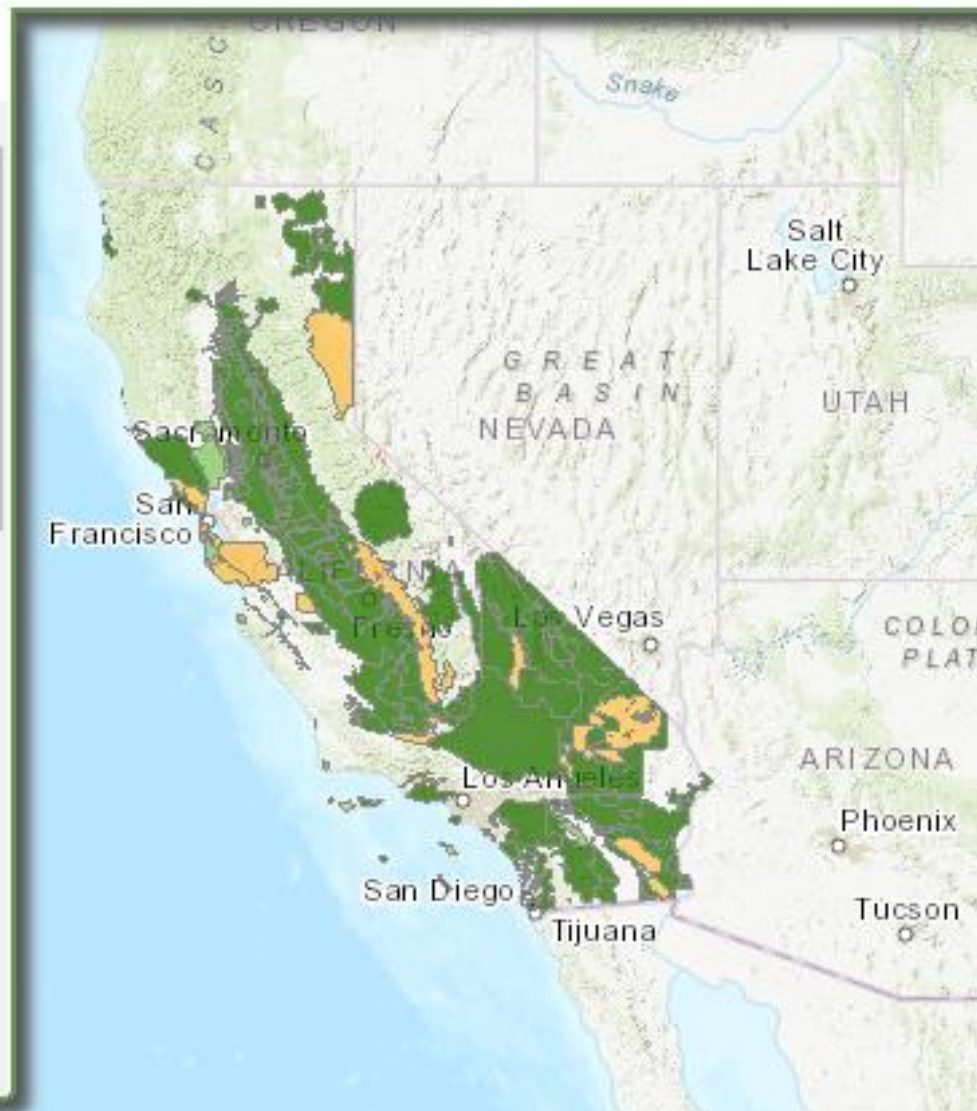
Go

X

Add Data: BIOS ▼

ds515

Identify Features ▼





# ADDITIONAL RESOURCES

What to do if classification and mapping projects are not available/do not appropriately represent your AOI



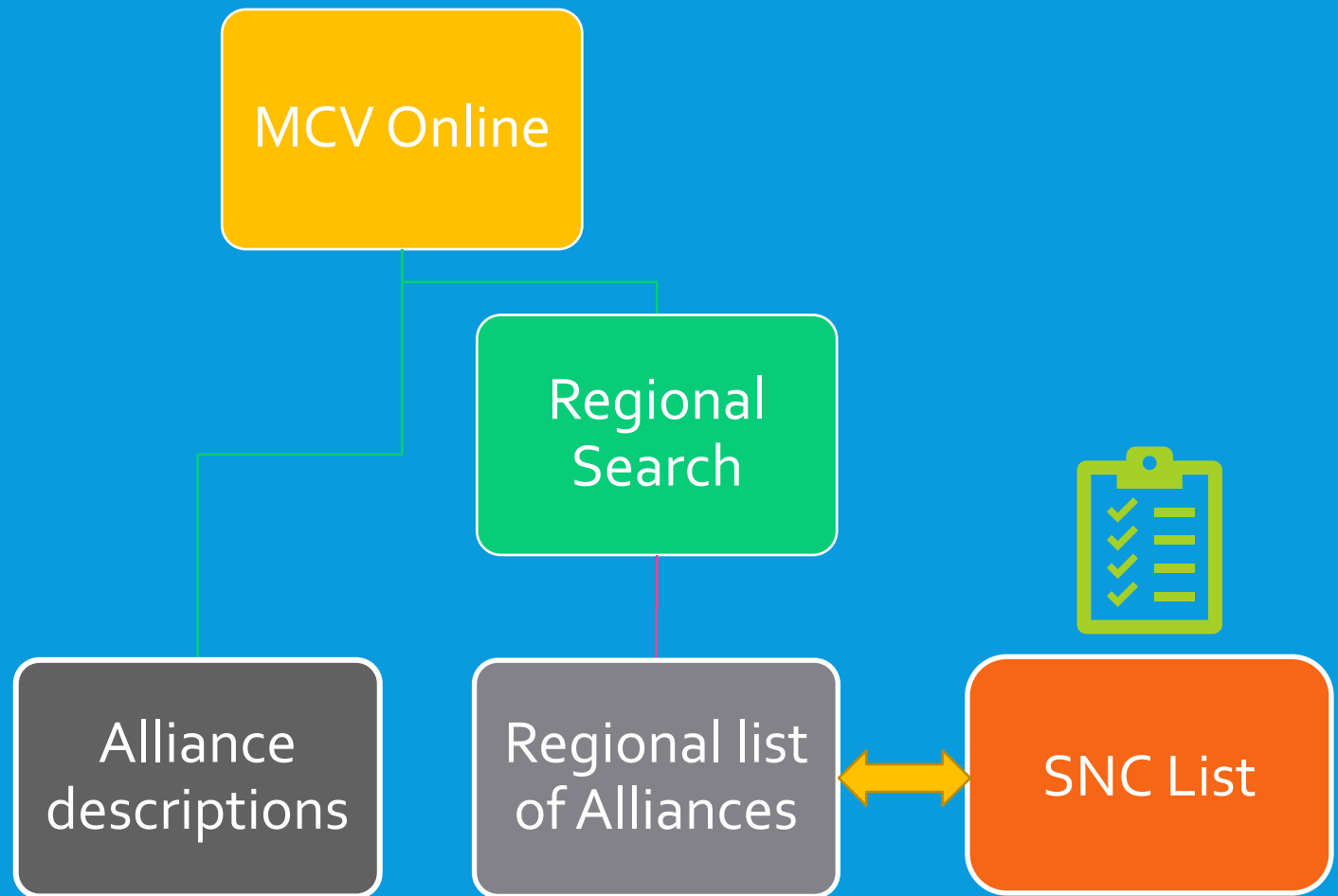


# ADDITIONAL RESOURCES

- What to do if classification and mapping projects are not available/do not appropriately represent your AOI

- Association descriptions
  - MCV Online Bibliography: Existing scientific literature
  - Habitat specific reports (CNPS Website)
  - Nature Serve Explorer
  - CDFW Document Library
- Spatial distribution of SNCs
  - Habitat specific BIOS layers
  - Natural Communities in CNDDDB (Access via BIOS)
  - CalVeg

# MANUAL OF CALIFORNIA VEGETATION ONLINE





# ASSOCIATION DESCRIPTIONS FROM HABITAT SPECIFIC REPORTS

San Francisco Bay Area

–

Marin County

2021 – Vegetation Classification of Alliances and Associations in Marin County, California

– Appendix D – Vegetation Descriptions

## Rare Plant Community Reports

Grasslands and vernal pools

+

Forest

+

Fen / Wet Meadow

+

Alluvial Scrub

+

Santa Clara County

2004 – Vegetation associations of a serpentine area: Coyote Ridge, Santa Clara County

2004 Coyote Ridge photos

***Quercus agrifolia* - *Umbellularia californica* / *Ceanothus oliganthus* Woodland**

Translated Name: California Live Oak - California Laurel / Hairy Ceanothus Woodland



NatureServe Element Code: CEG002870

**Summary:**

This association is only known from the Santa Monica Mountains region. This woodland association occurs on gentle to steep slopes, often with north-facing aspects at elevations between 298 and 801 m. *Quercus agrifolia* and *Umbellularia californica* are dominant in the tree layer, *Ceanothus oliganthus* in the understory shrub layer, and a variety of grasses and forbs in the herbaceous layer.

**Type Description**

Wetland: No

Ruderal: No

**Vegetation****Floristics Summary:**

Stands of this association at Santa Monica Mountains National Recreation Area form an open to intermittent tree layer (18-38%, mean 32.4%) with hardwoods at 5-10 m tall, a sparse to intermittent shrub layer (6-45%, mean 26.1%) at 0-10 m tall, and a sparse to open herbaceous layer (0-25%, mean 2.9%) at 0-1 m tall. Total vegetation cover is 40-90%; mean cover is 59.6%. In this association, the tree layer is dominated by *Quercus agrifolia* and *Umbellularia californica*. *Juglans californica* is occasionally included in this layer. The shrub layer is sparse to intermittent and is dominated by *Ceanothus oliganthus*; *Heteromeles arbutifolia* is often included. *Quercus berberidifolia*, *Diplacus aurantiacus* (= *Mimulus aurantiacus*), *Adenostoma sparsifolium*, and *Ribes malvaceum* are occasionally present at low cover. The herbaceous layer is simple and occasionally includes *Dryopteris arguta*, *Piptatherum miliaceum*, *Leymus condensatus*, *Melica imperfecta*, and *Silene gallica* at low cover.

# CDFW DOCUMENT LIBRARY

▪ <https://nrm.dfg.ca.gov/documents/ContextDocs.aspx?cat=VegCAMP>

## Vegetation Classification and Mapping Program Documents

VegCAMP develops and maintains a standardized vegetation classification system for California and works with partners to produce detailed vegetation maps; documents here include standards, and photos taken at field sampling locations.



Subcategory: - All Subcategories - ▾

Search

[Advanced Search](#)

Advanced Criteria: category is "VegCAMP"

RSS 2.0 Feed

Rows per page: 50 ▾

1 2 3 4 ►▶

Page 1 of 4

Results 1 - 50 out of 167.

File		Title	Subject	Author	Published
<a href="#">(21.9 MB)</a>		Fine-Scale Vegetation Map of a Portion ...	Vegetation Mapping and Accuracy Asses...	Menke, J., E. Reyes, Sikes, K, J...	3/2021
<a href="#">(25.5 MB)</a>		Fine-Scale Vegetation Map of a Portion ...	Vegetation Mapping and Accuracy Asses...	Menke, J., E. Reyes, Sikes, K, J...	3/2021
<a href="#">(42.2 MB)</a>		California Vegetation Map in Support of t...	Vegetation Mapping and Accuracy Asses...	Reyes, E., A. Glass, J. Menke, J...	3/2021
<a href="#">(41.2 MB)</a>		2020 CALIFORNIA VEGETATION MAP I...	Vegetation Classification and Mapping R...	Reyes, E., J. Evens, A. Glass, S...	12/2020
<a href="#">(2.18 MB)</a>		Vegetation Classification of Alliance and ...	Vegetation classification, description and...	Buck-Diaz, J., Sikes, K and J. E...	9/2021
<a href="#">(66.8 MB)</a>		Vegetation Classification of Alliance and ...	Vegetation classification, description and...	Buck-Diaz, J., Sikes, K and J. E...	9/2021
<a href="#">(3.07 MB)</a>		Vegetation Map and Classification of Slin...	Vegetation Mapping Report	Boul R., D. Hickson, T. Keeler-...	8/2021

# ADDITIONAL RESOURCES

- When classification and mapping projects are not available/do not appropriately represent your AOI

- Association descriptions
  - MCV Online Bibliography
  - Habitat specific reports (CNPS Website)
  - Nature Serve Explorer
  - CNRM Document Library

- Spatial distribution of SNCs
  - Habitat specific BIOS layers
  - Natural Communities in CNDDDB (Access via BIOS)
  - CalVeg
  - NWI



# HABITAT SPECIFIC BIOS LAYERS

The screenshot displays the BIOS web application interface. At the top left is the logo for the California Department of Fish and Wildlife BIOS. Below the logo are tabs for 'Basemaps' and 'Layers'. The 'Active Layer' is set to 'Counties'. The left sidebar contains three sections: 'Graphics and Selections' with a 'Remove All BIOS Layers' button; 'BIOS Layers' with two items: 'Coastal Sage Scrub (Interspace) - Western Riverside Co. - UCR CCB [ds634]' and 'Vegetation - Marin County Open Space District [ds957]'; and 'Reference Layers' with a 'Remove All Highlights' button and a 'Geolocation References' section where 'Counties' is selected. The main map area shows a map of California. A search dropdown menu is open, showing a list of layers containing the word 'aspen'. The search input field contains the text 'aspen'.

**CALIFORNIA DEPARTMENT OF FISH and WILDLIFE BIOS**

**Add Data: BIOS**

**Basemaps** **Layers**

**Active Layer:** Counties

**Graphics and Selections**

**BIOS Layers**

**Remove All BIOS Layers**

+ ☐ Coastal Sage Scrub (Interspace) - Western Riverside Co. - UCR CCB [ds634]

+ ☐ Vegetation - Marin County Open Space District [ds957]

**Reference Layers**

**Remove All Highlights**

▼ **Geolocation References**

+ ☐ Cities

- ☒ **Counties**

+ ☐ Ecoregion Sections

+ ☐ WBD HUC8 Watersheds

Aspen Characteristics - Sequoia National Forest [ds377]  
Aspen Stands - Warner Mountain [ds112]  
Aspen Characteristics - Aspen Delineation Project [ds361]  
Aspen Characteristics - El Dorado National Forest [ds363]  
Aspen Characteristics - Inyo National Forest [ds365]  
Aspen Characteristics - Klamath National Forest [ds369]  
Aspen Characteristics - Klamath National Forest EUI [ds36]  
Aspen Characteristics - Lassen National Forest [ds371]  
Aspen Characteristics - Plumas National Forest [ds373]  
Aspen Characteristics - Plumas National Forest, FRRD [ds36]  
Aspen Characteristics - Sierra State Parks [ds379]  
Aspen Delineation - Aspen Delineation Project [ds362]  
Aspen Delineation - El Dorado National Forest [ds364]  
Aspen Delineation - Inyo National Forest [ds366]  
Aspen Delineation - Klamath National Forest [ds370]  
Aspen Delineation - Klamath National Forest, EUI [ds368]  
Aspen Delineation - Lassen National Forest [ds372]  
Aspen Delineation - Plumas National Forest [ds374]  
Aspen Delineation - Plumas National Forest, FRRD [ds376]



# Natural Communities in CNDDB (Via BIOS)

CNDDB has 2500 element occurrences of rare natural community types based on Holland's classification

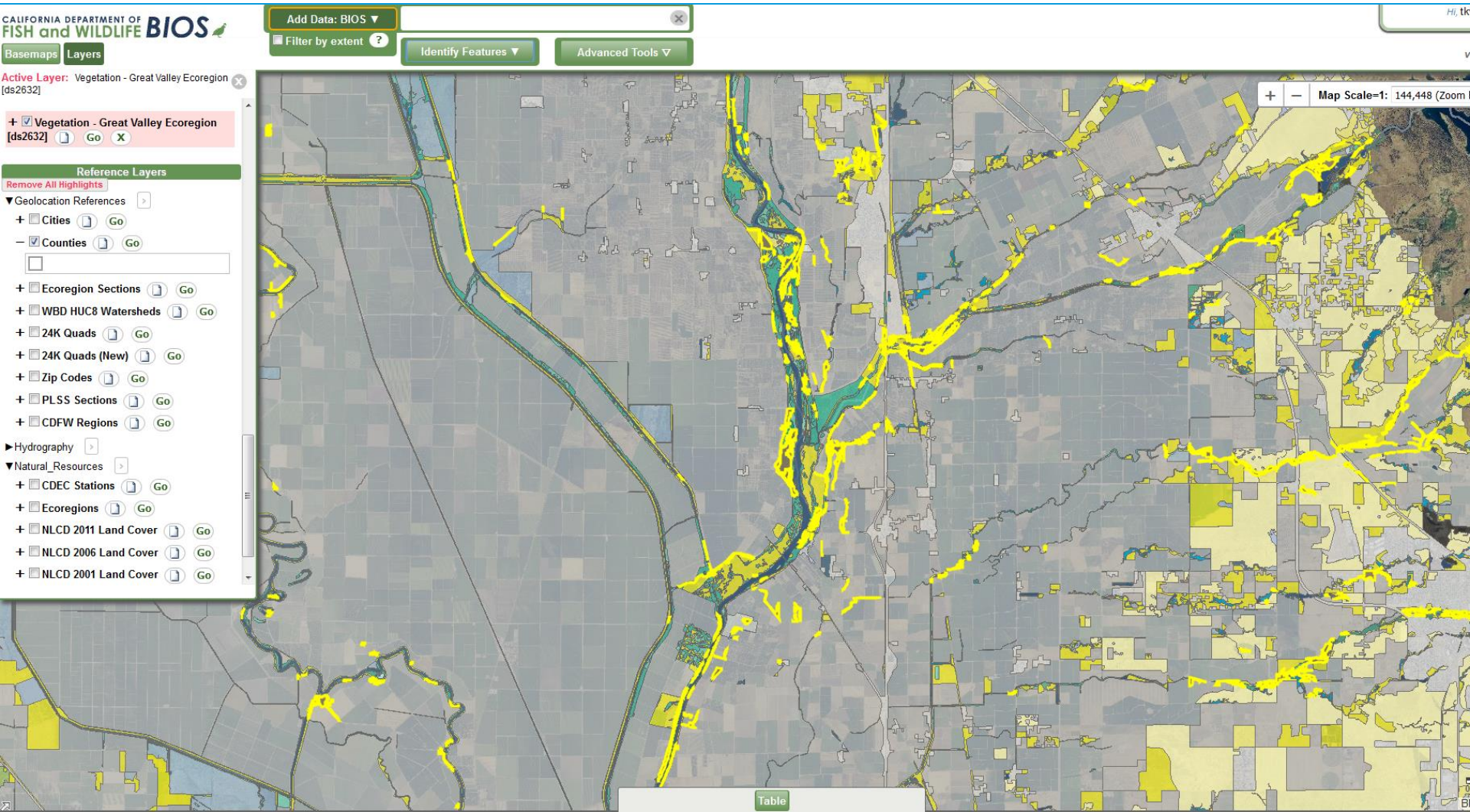
Holland classification is qualitative and at varying scales

No new occurrences have been entered in over 20+ years

Still worth checking for CEQA review

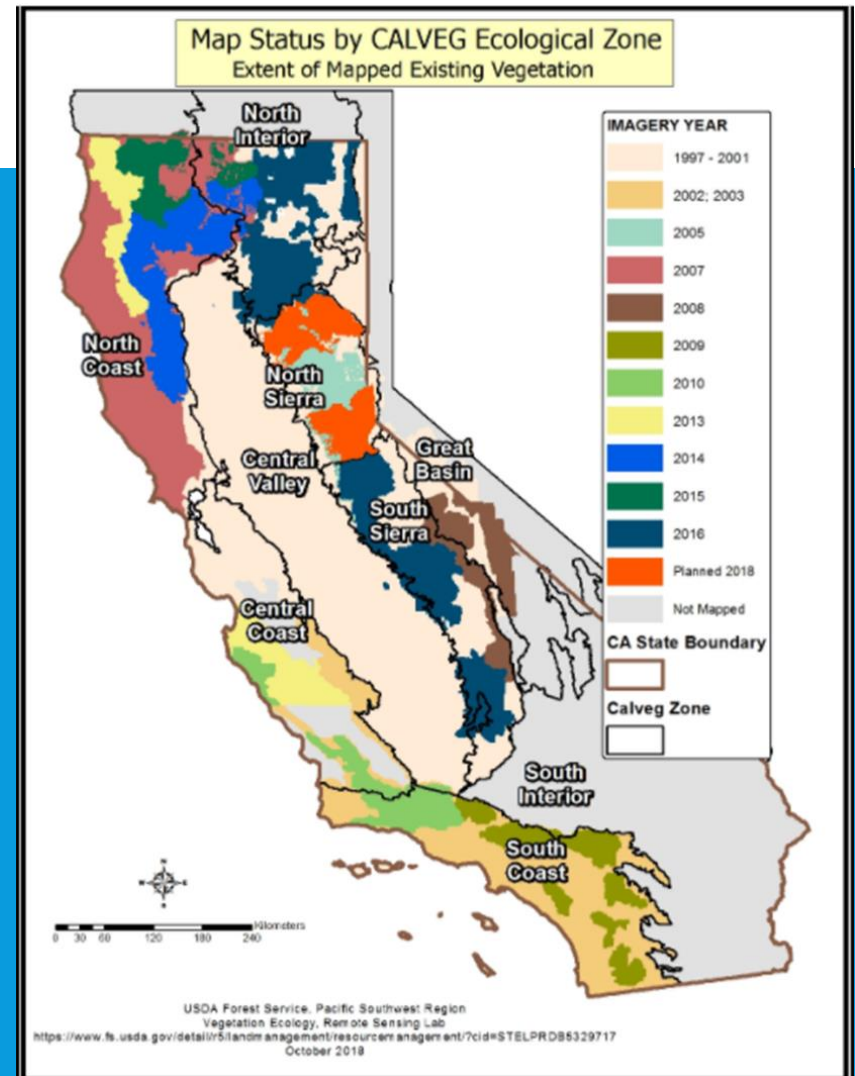
Holland system is no longer supported by DFW

# CNDDDB NATURAL COMMUNITY RECORDS QUERIED BY VALLEY OAK RIPARIAN FOREST RECORDS



# CALVEG

- Calveg data, zones, classification and key:
  - <https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192>
  - Use with crosswalk tool on MCVOnline
  - Some types approximate alliance level information others are at group or macrogroup level





# CLASSIFICATION CROSSWALKS

## Other Classifications

Classification:

Alliance/Habitat Name:

Search

To obtain a conversion result, type in part of the name from either classification. See the Related Links page for information on these alternative classification systems.

CalVeg Name	MCV2 Alliance
California sycamore	<a href="#">Platanus racemosa - Quercus agrifolia</a>
Coastal mixed hardwood	<a href="#">Quercus agrifolia</a>
Coast live oak	<a href="#">Quercus agrifolia</a>


### California's Vegetation

For over 20 years, we have served as a wide  
classifying and describing vegetation alliance

Use us for scientific research, conservation

Search the manual by alliance name:

Enter scientific or common alliance names; see 1

Jump To Map Search 

Jump To Advanced Search 

### More about the Manual

- » [What is an alliance?](#)
- » [Introduction](#)
- » [Overview Chapters](#)
- » [Appendices](#)
- » [Buy the book](#)

### Additional Search Tools

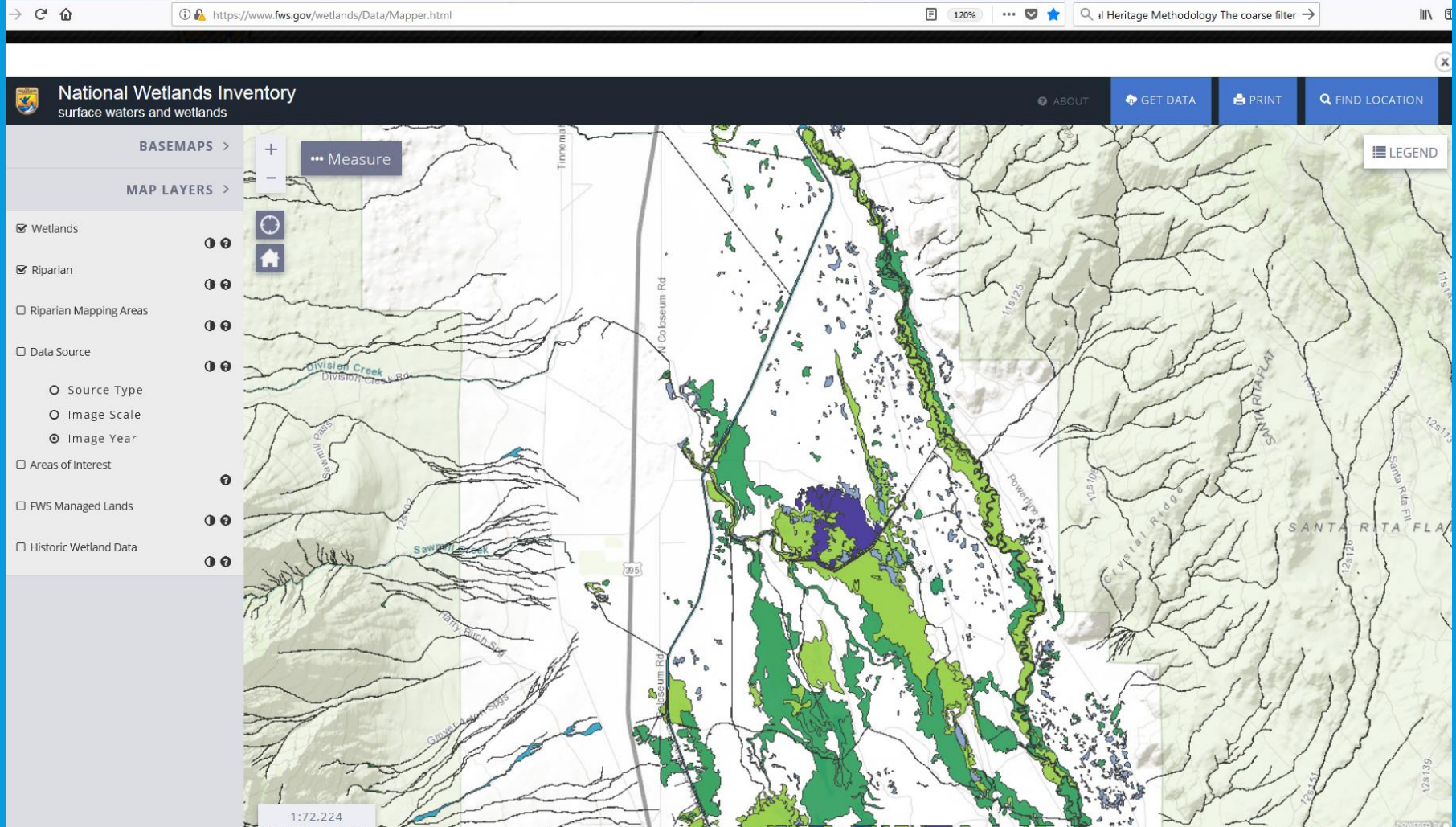
- » [Keys to Alliances](#)
- » [Classification Conversion](#)

### Help

- » [Frequently Asked Questions](#)
- » [Ecoregion Information](#)
- » [Glossary](#)
- » [Bibliography](#)
- » [Related Websites](#)

# OTHER USEFUL VEGETATION DATA NOT ON BIOS: NATIONAL WETLANDS INVENTORY

<https://www.fws.gov/wetlands/Data/Mapper.html>





# SURVEYING FOR SNCS AND NATURAL COMMUNITIES

- <https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Submit>
- <https://wildlife.ca.gov/Data/VegCAMP/Publications-and-Protocols>

## Vegetation Publications, Protocols and Standards

▣ A Shared Vision for the Survey of California Vegetation (PDF) (business case and overview)

▣ Online Manual of California Vegetation

## Vegetation Protocols

- ▣ Rapid Assessment and Relevé Protocol (PDF)
- ▣ Rapid Assessment and Relevé Field Form (PDF)

## Survey of California Vegetation Classification and Mapping Standards

- ▣ Vegetation Classification and Mapping Standards (PDF)
- ▣ Classification and Mapping Project Deliverables and Report Outline (PDF)

### California specific vegetation classification and mapping resources

**Manual of California Vegetation Online:** <https://vegetation.cnps.org/>

Provides the updated, standardized classification for the state in a searchable database, along with photos of each alliance and explanatory chapters from the Manual. Alliance descriptions, classification hierarchy, classification crosswalks.

**BIOS:** <https://wildlife.ca.gov/Data/BIOS>

Vegetation maps and surveys (Relevés, Rapid Assessments, Accuracy Assessments), CNDDDB records, CDFW generated geospatial information. BIOS is a system designed to enable the management, visualization, and analysis of biogeographic data collected by the California Department of Fish and Wildlife and its Partner Organizations.

**VegCAMP Website:** <https://wildlife.ca.gov/Data/VegCAMP>

Contact info, mapping, and classification reports (<https://wildlife.ca.gov/Data/VegCAMP/Reports-and-Maps>), sensitive natural communities list for download (<https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities>), protocols for surveying and evaluating impacts to special status native plant populations and natural communities (<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline>), and protocols and standards for natural community sampling, analysis, classification, and mapping (<https://wildlife.ca.gov/Data/VegCAMP/Publications-and-Protocols>).

**CNPS Vegetation Program Website:** <https://www.cnps.org/vegetation>

Information about CNPS vegetation program and vegetation classification and mapping projects.

Including a tutorial on mapping of sensitive natural communities: [https://www.cnps.org/wp-content/uploads/2018/03/Guidelines\\_for\\_Mapping\\_Rare\\_Vegetation\\_02-2011.pdf](https://www.cnps.org/wp-content/uploads/2018/03/Guidelines_for_Mapping_Rare_Vegetation_02-2011.pdf). Also, see

*Fremontia* publication on the protection of Sensitive Natural Communities in CEQA:

[https://www.cnps.org/wp-content/uploads/2019/01/Fremontia\\_Vol34-No4\\_Wagner.pdf](https://www.cnps.org/wp-content/uploads/2019/01/Fremontia_Vol34-No4_Wagner.pdf)

#### **ACE**

The ACE tool provides data to help guide and inform conservation priorities in California. It is available via BIOS app: <https://apps.wildlife.ca.gov/ace/>

**BIOS and CNDDDB Training:** <https://wildlife.ca.gov/Data/Training>

Pre-recorded training videos with transcripts on vegetation classification and mapping, BIOS, and CNDDDB as well as a schedule of live on-line and in-person trainings offered. Due to Covid, in-person trainings have been suspended but be sure to check website for updates. In addition to training videos there are also BIOS and CNDDDB user guides downloadable as PDFs.

**CDFW Document Library:** <https://nrm.dfg.ca.gov/documents/Default.aspx>

Searchable list of Vegetation mapping reports and classifications for download. You can browse by Category and select "VegCAMP" for a quick way to vegetation specific documents related to our program.

**Additional online vegetation resources:**

NatureServe Explorer: <https://explorer.natureserve.org/>

USNVC Hierarchy Explorer: <http://usnvc.org/explore-classification/>

CalVeg (USFS):

<https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192>

National Wetland Plant Inventory Mapper: <https://www.fws.gov/wetlands/data/mapper.html>

VegBank: <http://vegbank.org/vegbank/index.jsp>

National Park Service Inventory and Monitoring, Vegetation Mapping Inventory:

<https://www.nps.gov/im/vegetation-inventory.htm>