

SENSITIVE NATURAL COMMUNITIES WEBINAR



California Department of Fish and Wildlife – Vegetation Classification and Mapping Program (VegCAMP)

California Native Plant Society – Vegetation Program

AGENDA

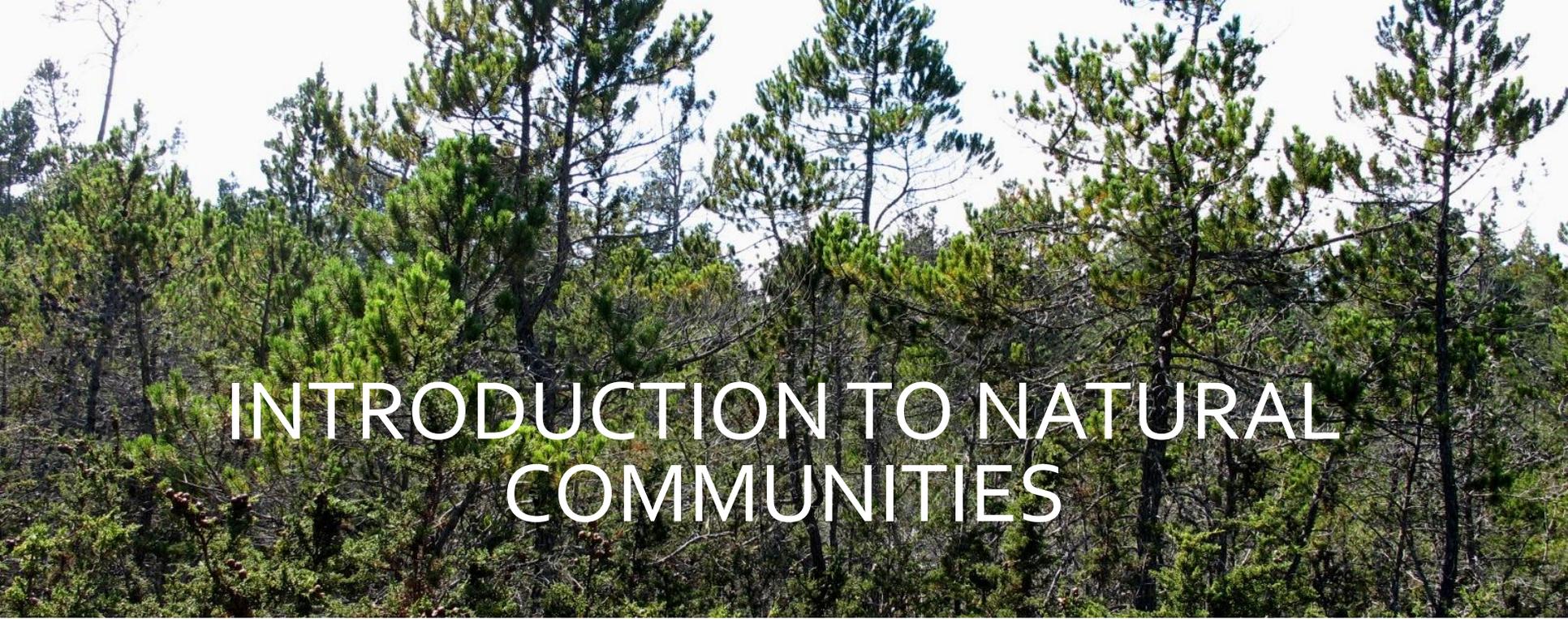
Please note that the content provided by any entity during this webinar does not represent the views of all entities involved.

- 8:30 a.m. – Welcome and introductions and workshop overview and background – Rachelle Boul (CDFW, VegCAMP)
- 9:15 a.m. – Sensitive Vegetation/ Natural Communities Definition and Ranking – Julie Evens (CNPS, Vegetation Program)
- 9:35 a.m. – Sources of Data & Tools & Online Information: Where to find them, how to use them - Betsy Harbert (CDFW, VegCAMP)
- 10:30 a.m. – Break (15 min)
- 10:45 a.m.– Addressing Vegetation in Environmental Review - Greg O’Connell (CDFW, Region 1)
- 11:05 a.m. – Conservation roles (Guest Speakers)
 - Treatment of Sensitive Natural Communities By the California Coastal Commission - Laurie Koteen (California Coastal Commission)
 - Vital Lands Initiative & Protecting Sensitive Natural Communities in Sonoma County - Allison Schichtel (Sonoma Ag + Open Space)
- 11:40 a.m. – Examples of successful projects and outcomes using sensitive natural communities (Guest Speakers)
 - Mapping Sensitive Natural Communities in Grassland Habitat – Shelly Benson (CNPS, Vegetation Program)
 - Mendocino cypress in Mendocino and Sonoma counties – Teresa Sholars (CNPS, Mendocino College)
- 12:15 p.m. – Thank You’s! and Q&A



THIS IS JUST THE BEGINNING

- We expect to launch similar trainings to CDFW regional staff and potentially, others (CNPS chapters, etc.)
- We want your feedback
- Objectives:
 - Improve understanding of the uses of vegetation information for conservation
 - Encourage the continued improvement of veg info state-wide



INTRODUCTION TO NATURAL COMMUNITIES

What is Vegetation? Why Vegetation? Why this Webinar?

History of vegetation in conservation

How we develop data on classification and mapping

Applying vegetation to conservation planning

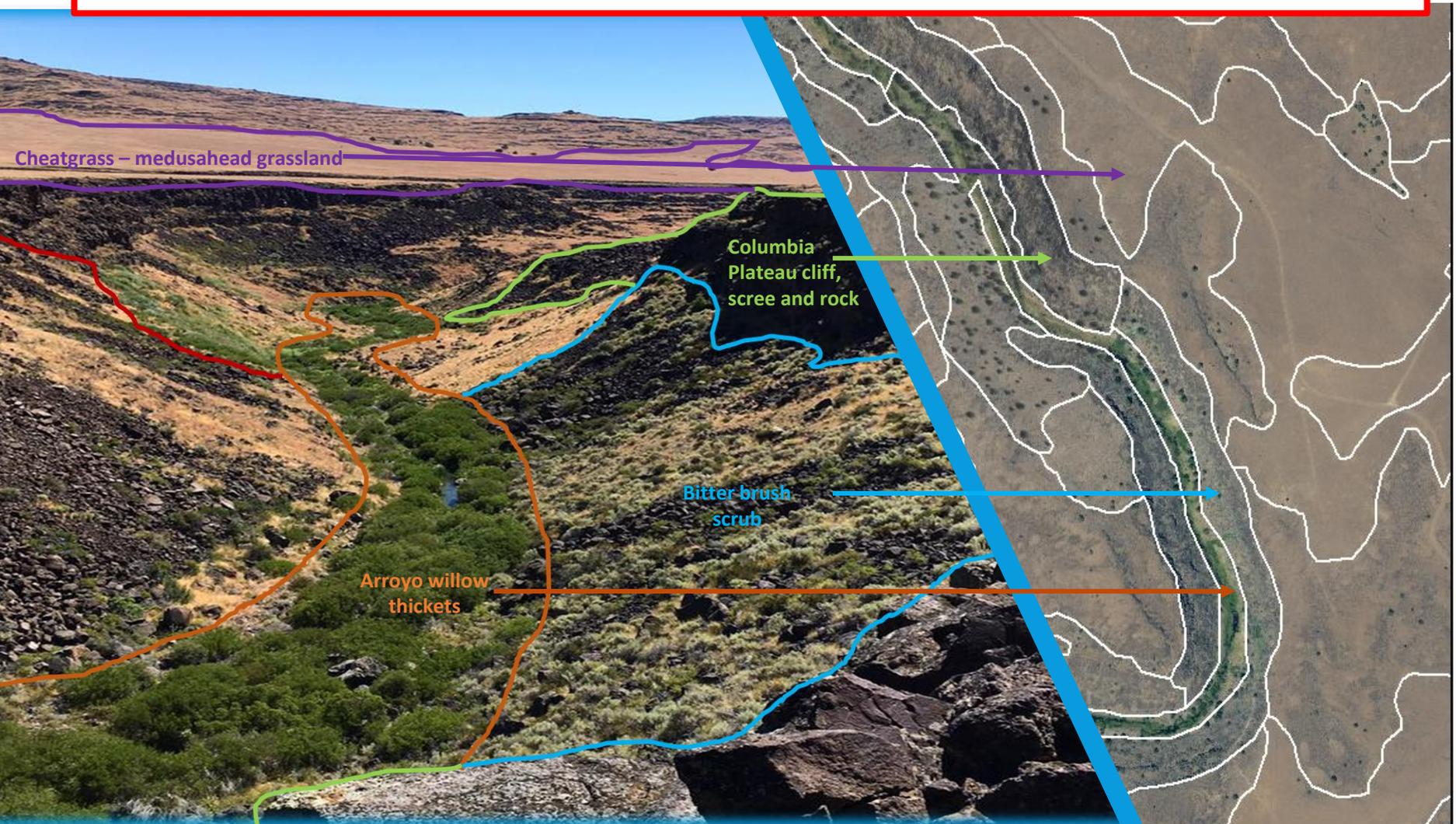
WHAT IS VEGETATION?

- Consistent, repeated patterning of plants
- Characteristic of an environmental setting
- Based on plant species composition, percent cover (density), and structure



WHAT IS VEGETATION?

A spatially continuous unit of vegetation with uniform composition, structure, and environmental conditions



WHY VEGETATION?



- Vegetation covers the landscape
- Can be measured, defined, classified, mapped, and monitored vegetation
- Best single surrogate for habitat and ecosystems
- Important tool for wildlands management and planning

WHY THIS WEBINAR?

- A lot of vegetation information and it can be confusing
 - MCV online
 - VegCAMP and
 - BIOS
- Introduction to:
 - Classification
 - Standards and
 - Identification
 - Uses of veget
- We need a share
- This is an effort to help demystify it for all users

The screenshot displays the BIOS web application interface. At the top, it features the logo for the California Department of Fish and Wildlife BIOS, along with navigation buttons for 'Add Data: BIOS', 'Click here to see', 'Welcome Guest!', 'Register', and 'Log in'. Below the logo are tabs for 'Basemaps' and 'Layers'. The 'Active Layer' is set to 'Counties'. A 'BIOS Layers' panel is open, containing a text box with instructions: 'Use the 'Add Data: BIOS' input box at top to search for and see list of BIOS datasets. Double click on the list item, or highlight one and hit Enter to add a data layer to the map.' Below this are 'Reference Layers' including 'Geolocation References' (with 'Cities' and 'Counties' options), 'Ecoregion Sections', 'WBD HUC8 Watersheds', '24K Quads', '24K Quads (New)', 'Zip Codes', 'PLSS Sections', and 'CDFW Regions'. A 'Hydrography' section is also visible. The main map shows California with county boundaries and various geographical features. At the bottom, there is a legend for 'Munz' codes, such as 'Stika spruce-grand fir forest' and 'North Coast coniferous forest', with a 'Distribution' note: 'CAN: BC, USA: CA, ID, MT, OR, WA, WY (NatureServe) (USDA Plants)'.

HISTORY: HOW DID NATURAL COMMUNITIES COME TO BE USED FOR CONSERVATION?

1972 - Bob Jenkins and TNC

- State and National trinity of conservation
 - rare plants
 - rare animals
 - “natural communities”

Natural communities are the “coarse filter” to conserve species that are not considered rare



EVOLUTION OF TRACKING NATURAL COMMUNITIES



1972 – Natural communities as the
'coarse filter'

1979 – CNDDDB established

- General framework of natural communities
- Concepts identified *ad hoc*
- SNCs become elements of conservation

1981 – CNDDDB goes to CDFW

- Tracks rare plants, animals, and SNCs

1995 – SNCs split from CNDDDB

1996-Present – VegCAMP tracks, defines,
and ranks natural communities

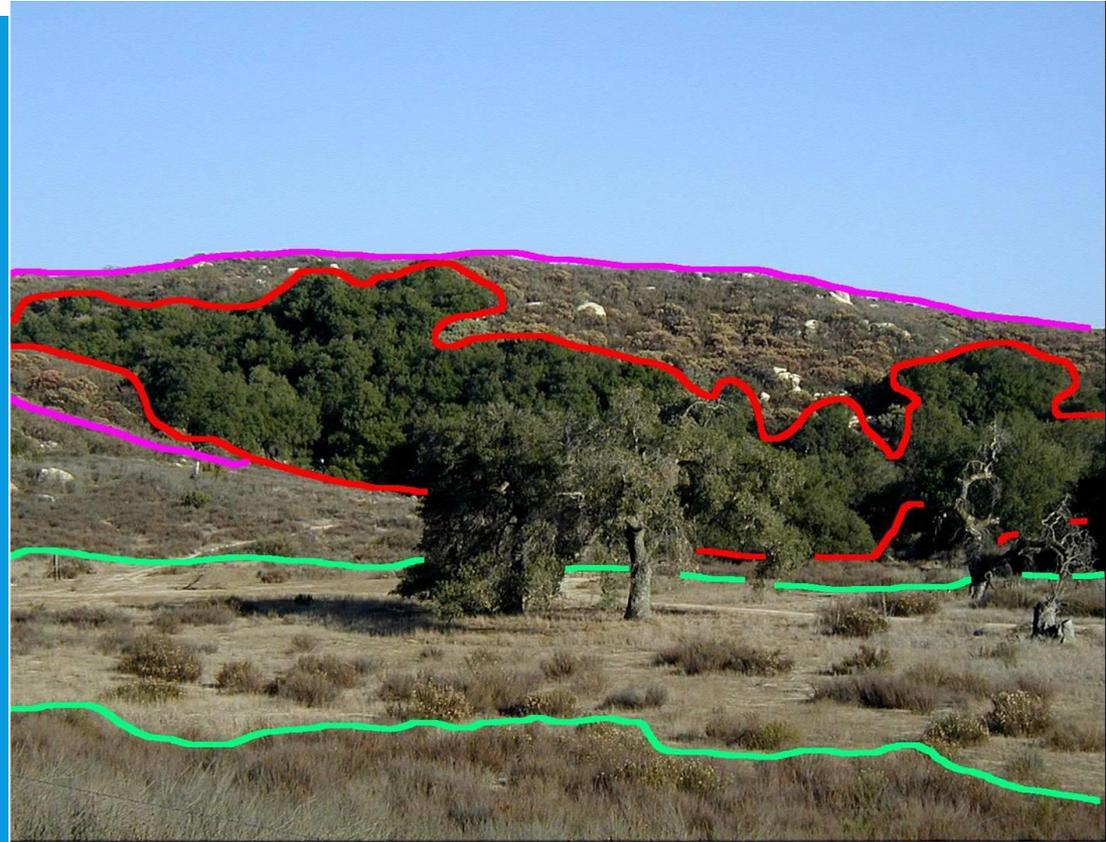


WHAT IS WRONG WITH THE *AD HOC* APPROACH?

- Cannot identify sensitive natural communities
- Natural community “membership characteristics” are debatable without rigorous definitions
 - We have trouble consistently identifying, mapping, and conserving NC component
 - Lose credibility; Identification and mapping of them becomes less important in planning
- Ending up demoting the original intent of the “coarse filter”

VALUE OF HAVING DEFENSIBLE DEFINITIONS

- Identification of all types of vegetation
- Identifying new concepts
- Consistent applications of concepts
- Definitions that are less debatable



COMPARISON OF 2005 & 1995 VEGETATION MAPS



1995 non-standard
Vegetation Map

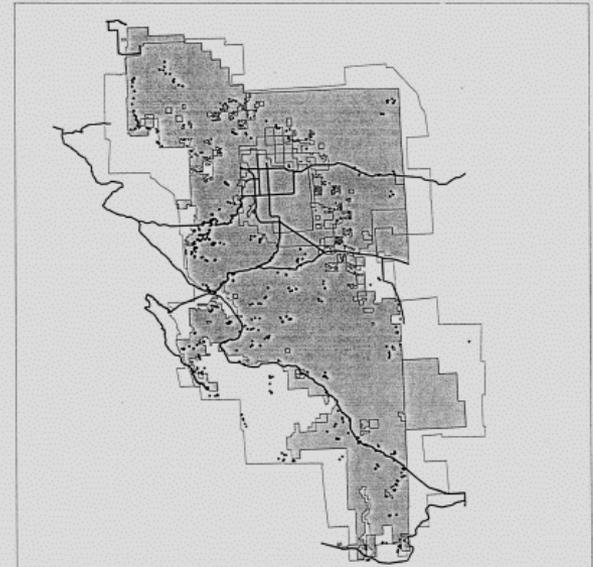


2005 standardized
MCV Vegetation Map

REALIZING A QUANTITATIVE CALIFORNIA CLASSIFICATION

- 1990 - CNPS Plant Communities Committee formed
- 1995 - first edition of the MCV published
- 1996 - ESA Vegetation Panel formed
- 1997 – TNC first edition of the National Vegetation Classification
- 1998 - First defensible definitions of CA sensitive communities
- 1998 - First CA NPS and State Parks vegetation mapping project completed

**Vegetation Mapping of
Anza-Borrego Desert State Park and Environs**
A Report to the California Department of Parks and Recreation
March 1998
Prepared by
Natural Heritage Division
California Department of Fish and Game



STANDARDS FOR MAPPING AND CLASSIFICATION

- We have documented **standards**
- the **Survey of California Vegetation (SCV)** embodies the state standards for classification and mapping
- **VegCAMP** is the acronym for the CDFW program that manages the data development and content for the SCV
- **CNPS Vegetation Program** co-develops content
- Both Programs have websites with much of the **content downloadable**



The screenshot displays the California Department of Fish and Wildlife website. The header includes the department's logo and navigation links for Home, Fishing, Hunting, Licensing, Conservation, and Learning. The main content area features a navigation menu on the right with the following items: VegCAMP Background, Reports and Maps, Publications, Protocols, and Standards, Natural Communities, Submitting Natural Communities Information, Vegetation-related Resources, and VegCAMP, ACE, BIOS, and CNDDDB Training. The main text area contains the following sections:

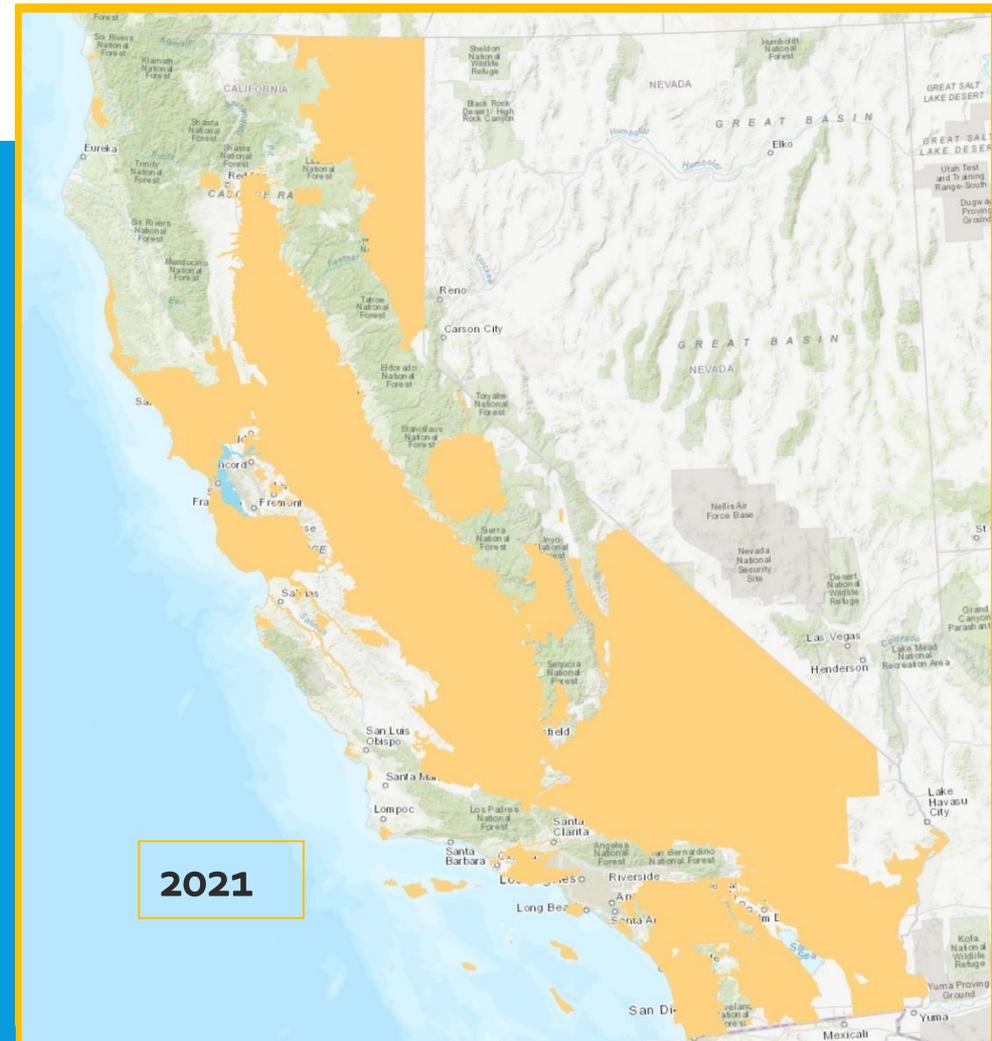
- [A Shared Vision for the Survey of California Vegetation \(PDF\) \(business case and overview\)](#)
- [Online Manual of California Vegetation](#)
- Vegetation Protocols**
 - [Rapid Assessment and Relevé Protocol \(PDF\)](#)
 - [Rapid Assessment and Relevé Field Form \(PDF\)](#)
- Survey of California Vegetation Classification and Mapping Standards**
 - [Vegetation Classification and Mapping Standards \(PDF\)](#)
 - [Classification and Mapping Project Deliverables and Report Outline \(PDF\)](#)
- Geodatabase**

Here is a geodatabase template that conforms to the mapping standards above:

 - [Geodatabase template \(zipped ArcGIS File Geodatabase\)](#)

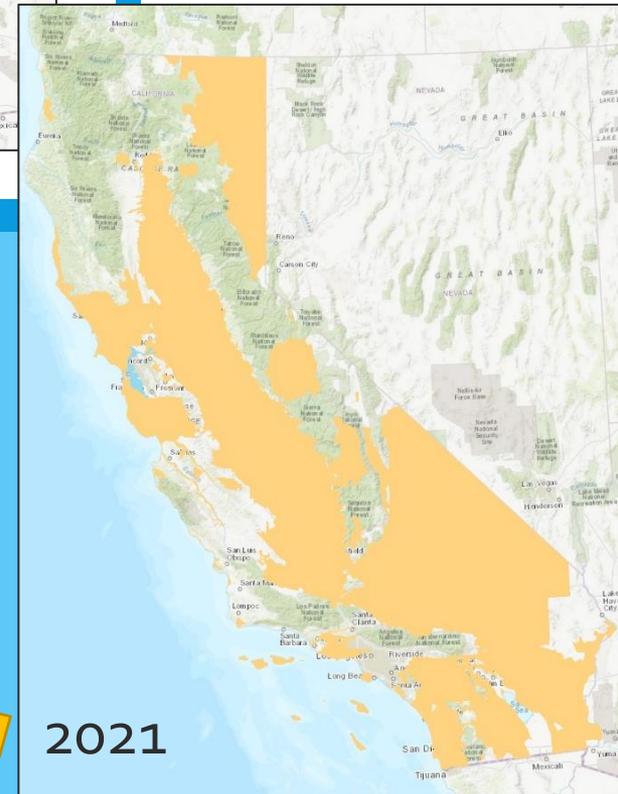
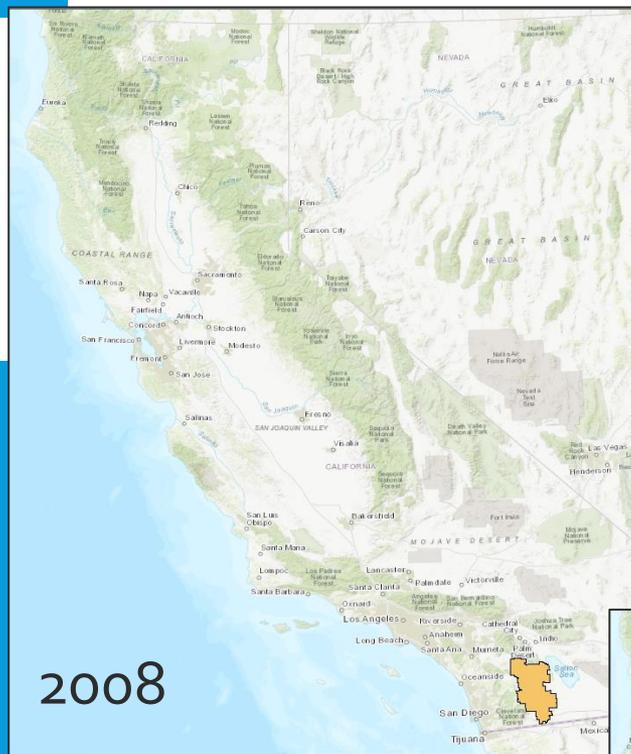
SCV VEGETATION CLASSIFICATION AND MAPPING PROGRESS

- 1998- 1 project (928,000 ac)
- 2008- 22 projects (1.92 m ac)
- 2018- 97 projects (45.9 m ac)
- 2021 – 152 projects (56.4 m ac)
 - California State Parks
 - Bay area
 - CDFW
 - Finish Modoc Plateau
 - Northern CA Coast coming soon!



WHY DOES CLASSIFICATION CHANGE?

- Improved understanding
- Refined techniques
- Landscape changes



HIERARCHICAL CLASSIFICATION

Hierarchy	Example
Upper	
Class	Forest and Woodland
Subclass	Temperate Forest
Formation	Warm Temperate Forest
Middle	
Division	Madrean Forest and Woodland
Macrogroup	California Forest and Woodland
Group	Californian broadleaf forest and woodland
Lower	
Alliance	Quercus douglasii
Association	Quercus douglasii – Quercus agrifolia
Association	Quercus douglasii – Pinus sabiniana
Association	Quercus douglasii – Quercus wislizeni
Association	Quercus douglasii – Juniperus californica / Quercus john-tuckeri

REGIONAL DATA: *QUERCUS DOUGLASII* (BLUE OAK) ALLIANCE DIVIDED INTO ASSOCIATIONS



Quercus douglasii/*Juniperus californica*-*Quercus john-tuckeri*
Association



Quercus douglasii - *Quercus wislizeni*
Association



Two associations of blue oak alliance, both have dominant and diagnostic blue oak but associations defined by either diagnostic trees, shrubs, or dominant herb layer

VEGETATION DESCRIPTIONS AND KEY



Vegetation Type
Pinus ponderosa – Calocedrus decurrens / Ceanothus prostratus Association
Cascadian Oregon White Oak - Conifer Forest & Woodland Group
Quercus garryana Alliance
Quercus garryana / Ceanothus cuneatus / Festuca idahoensis Association
Western North American Pinyon – Juniper Woodland & Scrub Division
Intermountain Singleleaf Pinyon – Juniper Woodland Macrogroup
Columbia Plateau Western Juniper Open Woodland Group
Juniperus occidentalis Alliance
Juniperus occidentalis – (Pinus jeffreyi – Pinus ponderosa) / Cercocarpus ledifolius Association
Juniperus occidentalis / Artemisia arbuscula / Poa secunda Association
Juniperus occidentalis / Artemisia tridentata – Purshia tridentata Association
Juniperus occidentalis / (Poa secunda – Festuca idahoensis – Pseudoroegneria spicata) Association
Intermountain Basins Curl-leaf Mountain-Mahogany Woodland & Scrub Group
Cercocarpus ledifolius Alliance
Cercocarpus ledifolius – Artemisia tridentata ssp. vaseyana Association
Cercocarpus ledifolius Association
Temperate Flooded & Swamp Forest Formation
Rocky Mountain – Great Basin Montane Flooded & Swamp Forest Division
Rocky Mountain – Great Basin Montane Riparian & Swamp Forest Macrogroup
Northern Rocky Mountain Lowland – Foothill Riparian Forest Group
Populus trichocarpa Alliance
Warm Temperate Forest & Woodland Formation
Californian Forest & Woodland Division
Californian Ruderal Forest Macrogroup
Californian Ruderal Forest Group
*Eucalyptus spp. – Ailanthus altissima – Robinia pseudoacacia Alliance
Californian Forest & Woodland Macrogroup
Californian Broadleaf Forest & Woodland Group
Quercus kelloggii Alliance
Desert & Semi-Desert Formation Class
Cool Semi-Desert Scrub & Grassland Formation Subclass
Cool Semi-Desert Scrub & Grassland Formation
Western North American Cool Semi-Desert Scrub & Grassland Division
Great Basin – Intermountain Dry Shrubland & Grassland Macrogroup
Great Basin-Intermountain Ruderal Dry Shrubland & Grassland Group
Bromus tectorum – Elymus caput-medusae Alliance
Bromus tectorum Association
Elymus caput-medusae Provisional Association
Ventenata dubia Provisional Association
Intermountain Semi-Desert Steope & Shrubland Group

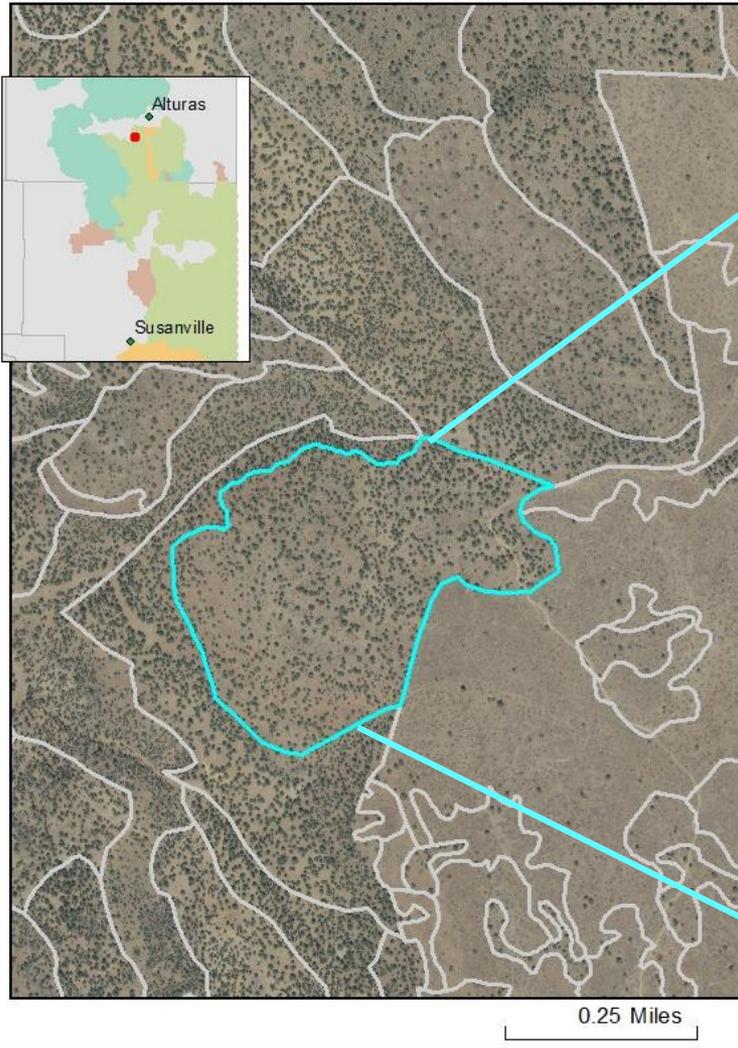


VEGETATION MAPPING



The image displays two maps of a landscape, likely a forested area, overlaid with a grid. The top map shows a river and a lake, with various colored regions (green, yellow, brown) indicating different vegetation types or land use. The bottom map shows a similar landscape but with a different distribution of colored regions, suggesting a different mapping or classification scheme. The central text "VEGETATION MAPPING" is prominently displayed in white on a dark background.

VEGETATION MAPPING



Field	Value
ALLIANCE_S	Juniperus occidentalis Woodland
ASSOCIATION	Juniperus occidentalis / Artemisia tridentata - Purshia tridentata
PER_HARDWO	0
PER_CONIFE	16
PER_TREE	16
PER_SHRUB	4
HERB_CODE	10 - 40%
PER_TOTAL	45
HT_CODE	5-10 meters
SIZE_CATEG	Small (11-24")
JUOC_EXPAN	.2-1% young JUOC (<6" DBH)
RESTORATION	None Obvious
ISOLATED_T	<null>
CLEARING_D	None visible
ROADEDNESS	Low (>66% is roadless)
DEVELOPMENT	None visible
INVASIVE_P	Visible patches, not sig. rc<33%
COMMENTS	<null>
Acres	45.265608
MethodID	<null>
NVCSName	Juniperus occidentalis / Artemisia tridentata - Purshia tridentata
NVCSLevel	Association
CaCode	89.400.06
NVCSAlliance	Juniperus occidentalis
NVCSGroup	Columbia Plateau Western Juniper Open Woodland
NVCSMG	Intermountain Singleleaf Pinyon - Juniper Woodland
CalVegName	Western Juniper
CalVegCode	WJ
CWHRType	Juniper
CWHRCode	JUN
GlobalRank	<null>
StateRank	<null>
Rare	No

← Vegetation Type

← Strata Covers

← Height and Size

← Project Specific

← Disturbances

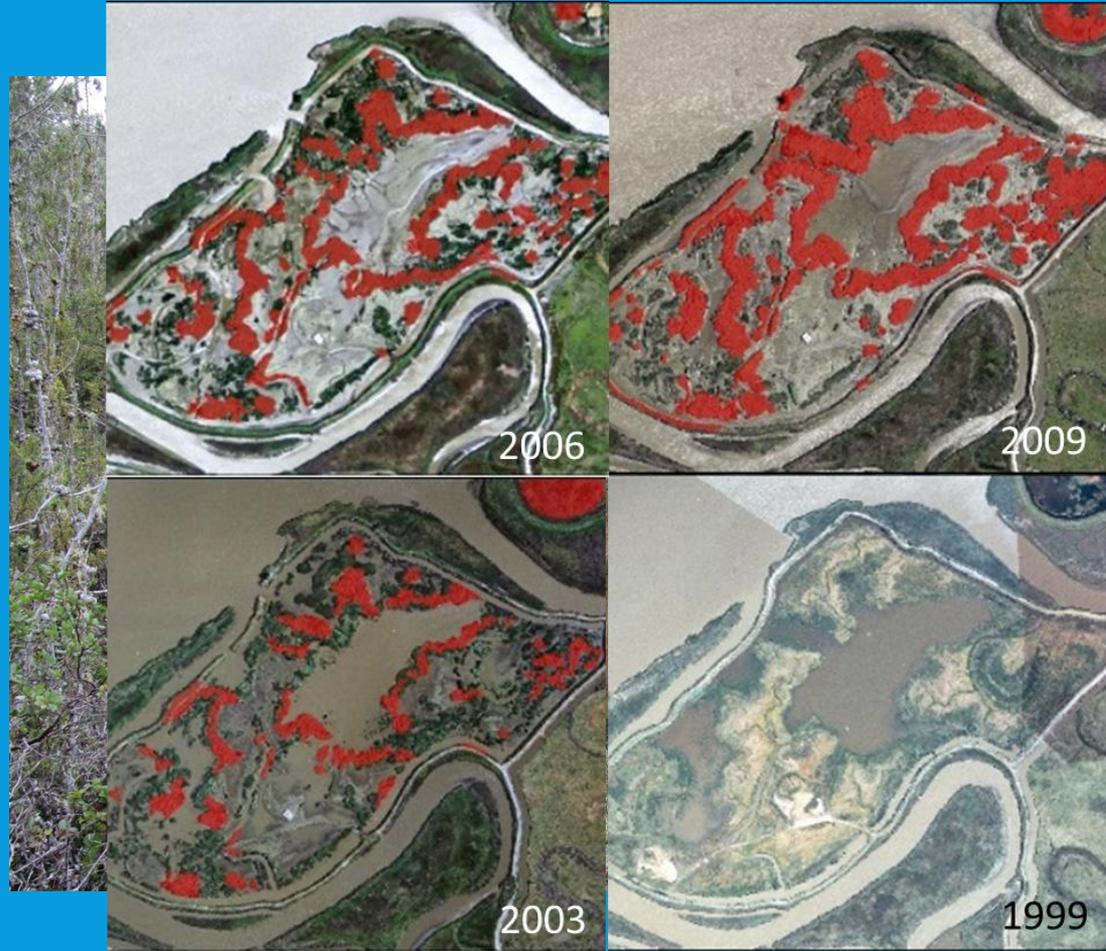
← Hierarchy

← Crosswalks

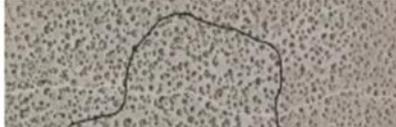
← Rarity

SUMMARY OF USES FOR VEGETATION DATA IN CONSERVATION PLANNING

- Location of sensitive vegetation & species
- Adaptive management for recreational use
- Change detection of vegetation and habitat

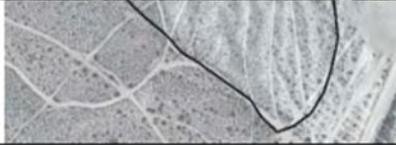


SUMMARY OF USES FOR VEGETATION DATA IN CONSERVATION PLANNING

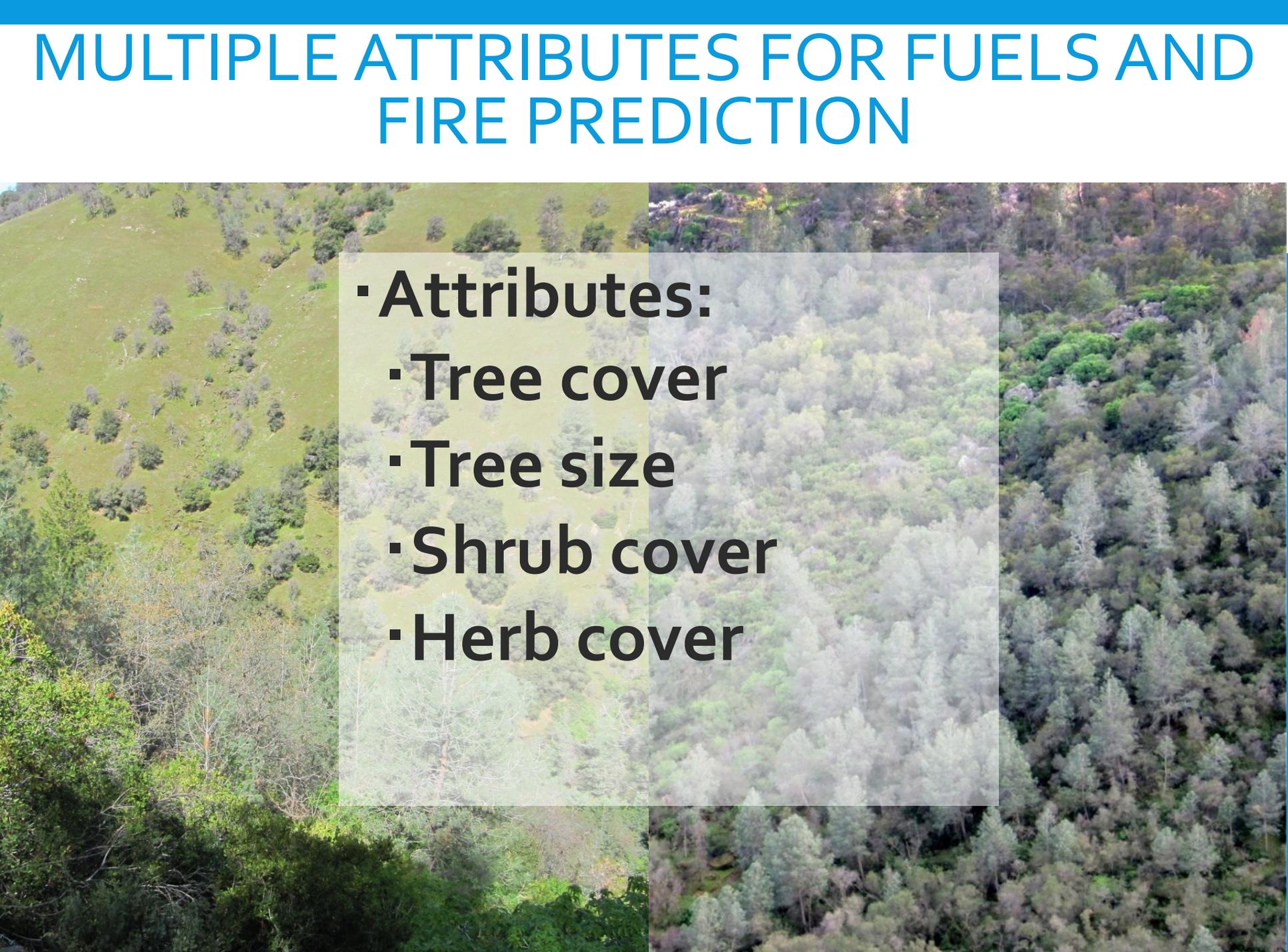
Code	Range	Example
0	None visible	
	Low: at least 2/3 (67% to 100%)	

- Impact analysis of mappable vegetation-related attributes
- Fire-risk related planning and analysis
- Long term monitoring network for plots

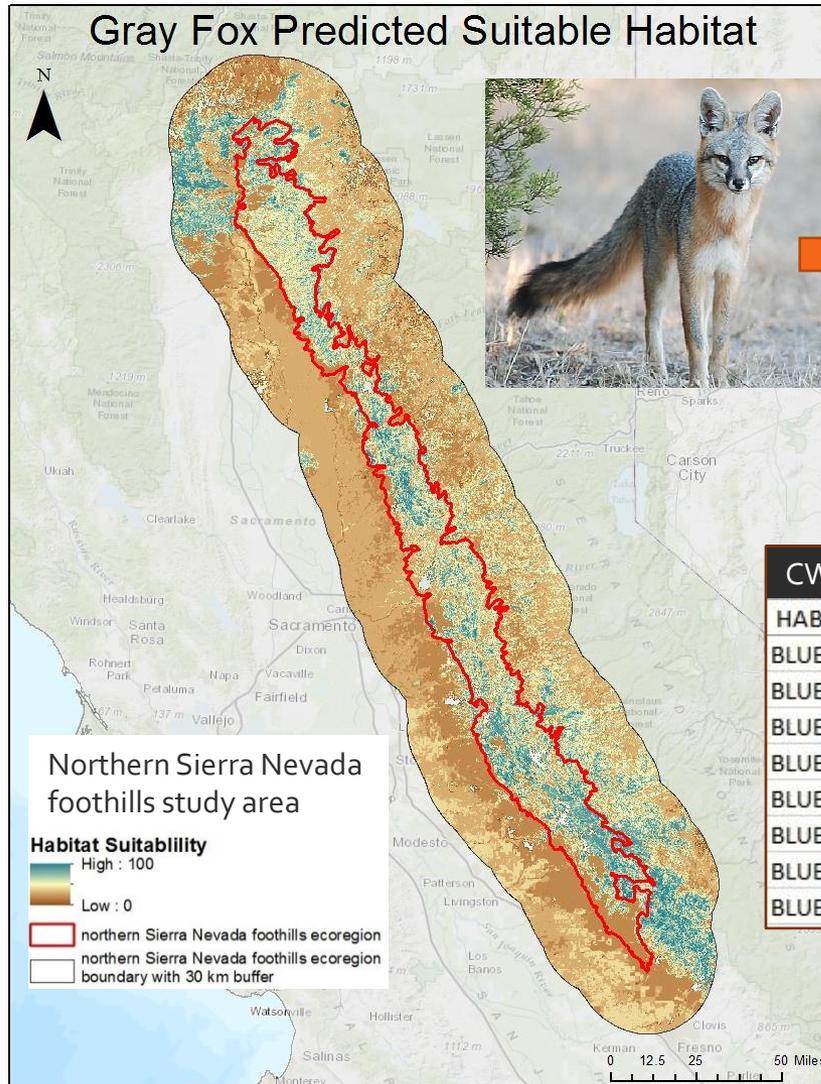


		
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MULTIPLE ATTRIBUTES FOR FUELS AND FIRE PREDICTION

- 
- The background of the slide is an aerial photograph of a forested landscape. The image is divided into four quadrants by a central semi-transparent grey rectangle. The top-left quadrant shows a grassy hillside with scattered trees. The top-right quadrant shows a dense forest with a mix of green and brown trees. The bottom-left quadrant shows a dense forest with a mix of green and brown trees. The bottom-right quadrant shows a dense forest with a mix of green and brown trees. The central grey rectangle contains a bulleted list of attributes.
- **Attributes:**
 - **Tree cover**
 - **Tree size**
 - **Shrub cover**
 - **Herb cover**

HABITAT SUITABILITY MODELING AND IDENTIFYING WILDLIFE CORRIDORS



CWHR Species Habitat Relationship Model

HAB_CODE	TREE SIZE	COVER CLASS	REPRO	COVER	FEEDING
BLUE OAK-FOOTHILL PINE	2 S		M	M	H
BLUE OAK-FOOTHILL PINE	2 P		H	H	H
BLUE OAK-FOOTHILL PINE	2 M		H	H	H
BLUE OAK-FOOTHILL PINE	2 D		H	H	M
BLUE OAK-FOOTHILL PINE	3 S		M	M	H
BLUE OAK-FOOTHILL PINE	3 P		H	H	H
BLUE OAK-FOOTHILL PINE	3 M		H	H	M
BLUE OAK-FOOTHILL PINE	3 D		M	M	L

NATURAL COMMUNITY RARITY RANKING

Alliance and Association

- Comprehensive Sampling
- Standardized Classification
- Mapping wall-to-wall

NatureServe Conservation
Status Assessments:
Methodology for
Assigning Ranks

NatureServe Report
Revised Edition
June 2012


NatureServe
A Network Connecting Science With Conservation



STANDARDIZATION IS CRITICAL!

We encourage collaboration, but we all
need to speak the same language!

CONTACTS



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END

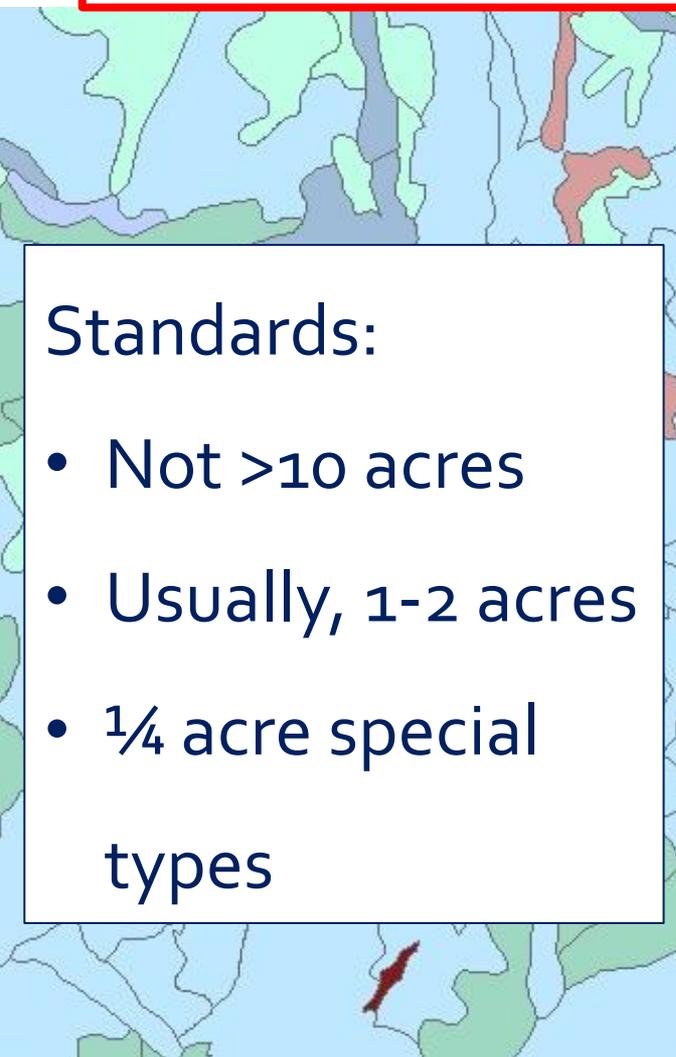
MINIMUM MAPPING UNIT

VS.

MINIMUM STAND SIZE

MINIMUM MAPPING UNIT

The smallest mappable polygon within a mapping project



Standards:

- Not >10 acres
- Usually, 1-2 acres
- ¼ acre special types

A rule for mapping:

- For consistent mapping
- Limited by imagery resolution
- Limited by time/budget
- Tied to classification level

MINIMUM STAND SIZE

A spatially continuous unit of vegetation with uniform composition, structure, and environmental conditions

Size is
variable

A rule for sampling

- Lifeform
- Ecology of the community
- Meets membership rules

A Manual of California Vegetation Online

