· 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

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

Analyze & Classify

Interpret Data for Conservation & Management

Map

Survey Data
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 CNPS websites
- BIOS
- Introduction to:
  - Classification
  - Standards and guidelines
  - Identification
  - Uses of vegetation maps and field data
- We need a shared understanding
- This is an effort to help demystify it for all users
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
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**
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

<table>
<thead>
<tr>
<th>Hierarchy</th>
<th>Example</th>
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<tbody>
<tr>
<td><strong>Upper</strong></td>
<td></td>
</tr>
<tr>
<td>Class</td>
<td>Forest and Woodland</td>
</tr>
<tr>
<td>Subclass</td>
<td>Temperate Forest</td>
</tr>
<tr>
<td>Formation</td>
<td>Warm Temperate Forest</td>
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<tr>
<td><strong>Middle</strong></td>
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<tr>
<td>Division</td>
<td>Madrean Forest and Woodland</td>
</tr>
<tr>
<td>Macrogroup</td>
<td>California Forest and Woodland</td>
</tr>
<tr>
<td>Group</td>
<td>Californian broadleaf forest and woodland</td>
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<tr>
<td><strong>Lower</strong></td>
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<tr>
<td>Alliance</td>
<td>Quercus douglasii</td>
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<tr>
<td>Association</td>
<td>Quercus douglasii – Quercus agrifolia</td>
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<tr>
<td>Association</td>
<td>Quercus douglasii – Pinus sabiniana</td>
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<tr>
<td>Association</td>
<td>Quercus douglasii – Quercus wislizeni</td>
</tr>
<tr>
<td>Association</td>
<td>Quercus douglasii – Juniperus californica / Quercus john-tuckeri</td>
</tr>
</tbody>
</table>
REGIONAL DATA: QUERCUS DOUGLASII (BLUE OAK) ALLIANCE DIVIDED INTO ASSOCIATIONS

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

<table>
<thead>
<tr>
<th>Vegetation Type</th>
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</thead>
<tbody>
<tr>
<td>Pinus ponderosa – Calocedrus decurrens / Ceanothus prostratus Association</td>
</tr>
<tr>
<td>Cascadian Oregon White Oak - Conifer Forest &amp; Woodland Group</td>
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<tr>
<td>Quercus garryana Alliance</td>
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<tr>
<td>Quercus garryana / Ceanothus cuneatus / Festuca idahoensis Association</td>
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<tr>
<td>Western North American Pinyon – Juniper Woodland &amp; Scrub Division</td>
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<tr>
<td>Intermountain Singleleaf Pinyon – Juniper Woodland Macrogroup</td>
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<tr>
<td>Columbia Plateau Western Juniper Open Woodland Group</td>
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<tr>
<td>Juniperus occidentalis Alliance</td>
</tr>
<tr>
<td>Juniperus occidentalis – (Pinus jeffreyi – Pinus ponderosa) / Cercocarpus ledifolius Association</td>
</tr>
<tr>
<td>Juniperus occidentalis / Artemisia arbuscula / Poa secunda Association</td>
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<tr>
<td>Juniperus occidentalis / Artemisia tridentata – Purshia tridentata Association</td>
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<tr>
<td>Juniperus occidentalis / (Poa secunda – Festuca idahoensis – Pseudobroedneria spicata) Association</td>
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<td>Intermountain Basins Curl-leaf Mountain-Mahogany Woodland &amp; Scrub Group</td>
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<td>Cercocarpus ledifolius Alliance</td>
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<tr>
<td>Cercocarpus ledifolius – Artemisia tridentata ssp. vasyana Association</td>
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<tr>
<td>Cercocarpus ledifolius Association</td>
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<td>Temperate Flooded &amp; Swam Forest Formation</td>
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<td>Rocky Mountain – Great Basin Montane Flooded &amp; Swamp Forest Division</td>
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<tr>
<td>Rocky Mountain – Great Basin Montane Riparian &amp; Swamp Forest Macrogroup</td>
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<tr>
<td>Northern Rocky Mountain Lowland – Foothill Riparian Forest Group</td>
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<tr>
<td>Populus trichocarpa Alliance</td>
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<td>Warm Temperate Forest &amp; Woodland Formation</td>
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<td>Californian Ruderal Forest Macrogroup</td>
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<td>Eucalyptus ssp. – Allienthus altissima – Robinia pseudoacacia Alliance</td>
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<tr>
<td>Californian Forest &amp; Woodland Macrogroup</td>
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<tr>
<td>Californian Broadleaf Forest &amp; Woodland Group</td>
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<tr>
<td>Quercus kelloggii Alliance</td>
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<tr>
<td>Desert &amp; Semi-Desert Formation Class</td>
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<td>Cool Semi-Desert Scrub &amp; Grassland Formation Subclass</td>
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<td>Cool Semi-Desert Scrub &amp; Grassland Formation</td>
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<td>Western North American Cool Semi-Desert Scrub &amp; Grassland Division</td>
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<td>Great Basin – Intermountain Dry Shrubland &amp; Grassland Macrogroup</td>
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<td>Great Basin-Intermountain Ruderal Dry Shrubland &amp; Grassland Group</td>
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<td>Bromus tectorum – Elymus caput-medusae Alliance</td>
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<tr>
<td>Bromus tectorum Association</td>
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<td>Elymus caput-medusae Provisional Association</td>
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<tr>
<td>Venteneta dubia Provisional Association</td>
</tr>
<tr>
<td>Intermountain Semi-Desert Sage &amp; Shrubland Group</td>
</tr>
</tbody>
</table>
VEGETATION MAPPING

- 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

- Impact analysis of mappable vegetation-related attributes
- Fire-risk related planning and analysis
- Long term monitoring network for plots
MULTIPLE ATTRIBUTES FOR FUELS AND FIRE PREDICTION

- Attributes:
  - Tree cover
  - Tree size
  - Shrub cover
  - Herb cover
WILDLAND / SUBURBAN INTERFACE

- Attributes:
  - Tree cover
  - Tree size
  - Shrub cover
  - Herb cover

Areas with dense development
HABITAT SUITABILITY MODELING AND IDENTIFYING WILDLIFE CORRIDORS

Gray Fox Predicted Suitable Habitat

Landscape permeability
Barriers
Wildlife corridors

Northern Sierra Nevada foothills study area

CWHR Species Habitat Relationship Model

<table>
<thead>
<tr>
<th>HAB_CODE</th>
<th>TREE SIZE</th>
<th>COVER CLASS</th>
<th>REPRO</th>
<th>COVER</th>
<th>FEEDING</th>
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</tbody>
</table>
NATURAL COMMUNITY RARITY RANKING

Alliance and Association

➢ Comprehensive Sampling
➢ Standardized Classification
➢ Mapping wall-to-wall
STANDARDIZATION IS CRITICAL!

We encourage collaboration, but we all need to speak the same language!
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MINIMUM MAPPING UNIT VS. MINIMUM STAND SIZE
MINIMUM MAPPING UNIT
The smallest mappable polygon within a mapping project

A rule for mapping:
- For consistent mapping
- Limited by imagery resolution
- Limited by time/budget
- Tied to classification level

Standards:
- Not >10 acres
- Usually, 1-2 acres
- ¼ acre special types
MINIMUM STAND SIZE

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

A rule for sampling

• Lifeform
• Ecology of the community
• Meets membership rules

Size is variable