Integrating the FGDC National Vegetation Classification (NVC) Standard with the CNPS/CDFG *Manual of California Vegetation*, second edition

California Native Plant Society
California Department of Fish and Game
NatureServe–Ecology Program
FGDC Vegetation Subcommittee
USGS
Sequoia sempervirens Forest Alliance
Redwood Forest

Sequoia sempervirens dominates or co-dominates in the tree canopy with Abies grandis, Deyeus mucronaphyllus, Ehretia microphylla, Lithocarpus densiflorus, Pseudotsuga menziesii, Prunus serotina, and Ostrya californica. Trees > 120 ft tall grow in stands that are dominated by coniferous or deciduous. Some are hypogeous or common. Lithocarpus level to absent or abundant.

Habitat: Higher oceanic terrane, beaches, all slopes and aspect. Alt.: 100-875 m.

Ecotype ranking: GC 5.2.4. NV CS: Lithocarpus forest alliance. Sequoia sempervirens-Abies grandis mixed forest alliance. Coastal Redwood - Douglas Fir Forest, Redwood forest, Salinadorinal forest, North Coast alluvial forest, Coastal Redwood,西班 Redwood Forest.

Membership Rules
Sequoia sempervirens = 20% relative cover in the tree canopy, or > 30% relative cover with other conifer such as Pseudotsuga menziesii or with a lower tier of hardwood species such as Lithocarpus densiflorus (Keiter-inf6 et al. 2003a, Evens and Reiners 2000).

Life History Traits of Principal Species

- Life form: Tree
- Size: Large
- Mode of dispersal: Seed
- Mode of germination: Seedling
- Seedling age: 1-2 years
- Seedling growth rate: High
- Seedling density: Low
- Seedling survival: Low
- Seedling longevity: 5-20 years
- Maximum height: 120 m
- Diameter at breast height: 1 m
- Life span: 1500 years
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Remarks
Sequoia sempervirens is a forest of trees that grow in clusters or groves. They are generally found on coastal terrains, often in areas with heavy fog and mist. The trees can grow to heights of 120 m and can live for hundreds of years. They are adapted to coastal conditions and are not found in inland areas. The forest is characterized by a rich understory of ferns, mosses, and other ground cover species.
MCV2 Database Project -- Integrating the Revised NVC Hierarchy
Intersecting the Revised NVC Hierarchy with the CA Draft Hierarchy

Appendix 3
The National Vegetation Classification Hierarchy as Applied to California Vegetation

The following table displays the complete National Vegetation Classification hierarchy as it is understood by the Federal Geographic Data Committee and its advisory panel of vegetation ecologists (FGDC 2008) as of November 2008. The hierarchy, as discussed in “The NVC Approach to Classification” (page 16-21), has been applied to all alliances, provincial alliances, special stands, and several non-alloies treated in this book. Because the classification system is inductive and defined, the relationships and rankings, particularly those of the mid-level “Megaspecies” and “Groups,” are likely to change over the coming years as more national and international interest and energy is devoted to refinement of this system. Recent publications offering more explanation of the classification system includes Hubbard-Langholz et al. (2009), FGDC (2008), and Post (2009).

HIERARCHY FORMAT:
Level 1 - FORMATION CLASS
Level 2 - FORMATION SUBCLASS
Level 3 - FORMATION
Level 4 - Division
Level 5 - Microgroup
Level 6 - Group
Level 7 - Alliance

Class I. Mosaic-type Vegetation (Forest and Woodland):
Subclass I.C. Temperate Forest
Formation I.C.1. Warm Temperate Forest
Division I.C.1.a. Modern Forest and Woodland
Microgroup I.C.1.a. California Forest and Woodland
Group - California broadleaf forest and woodland
  Arctostaphylos californica Alliance
  Vaccinium scoparium Special Stands
  Quercus agrifolia Alliance
  Quercus chrysolepis (moon) Alliance
  Quercus dumosa Alliance
  Quercus gambelii Alliance
  Quercus kelloggii Alliance
  Quercus lobata Alliance
  Quercus verticillata var. sherrii Provisions Alliance
  Quercus incana Special Stands
  Quercus spp. Alliance
  Umbellularia californica Alliance

Bringing CA Alliances into the Hierarchy
Project Overview

- **Statement of the Problem**
  Development and application of the USNVC depends on partners at both state and federal levels being able to apply the federal standard, either directly or through meaningful crosswalks. California USNVC partners have not had the opportunity to assess the relationship between the two so that users can apply the MCV and the USNVC for both in-state and cross-border vegetation projects.

- **Purpose of the Project**
  The California NVC partners (CNPS & CDFG) will evaluate the relationship between the MCV and the revised USNVC, and then integrate them, at minimum using the MCV Alliance level and the USNVC Macrogroup level, and where possible, down to USNVC Alliance level.

- **Methodology and Schedule**
  - Project kick-off meetings & data-sharing between partners (July – Sept 2012)
  - Evaluation of USNVC hierarchy with the California Alliances and Associations, and management of data (Sept 2012 – May 2013)
  - Outreach via the web, workshops, and meetings (May – Sept 2012)
  - Reporting (Jan 2013 and Dec 2013)
Project Overview (Cont’d)

- **Outcomes**
  We will upload vegetation information into the USNVC, NatureServe BIOTICS, and CNPS/CDFG Manual of California Vegetation (MCV) databases. When the database uploads and the evaluations of the USNVC and MCV are complete, the California Alliances will be integrated and linked with the USNVC upper levels of the hierarchy. These linkages provide critical information and representation of the CA Alliances and Associations within the greater national context of the USNVC. They also facilitate the use of the USNVC Standards in combination with California Alliances for local, state, and federal partners in California.

- **Deliverables**
  - CNPS/CDFG MCV and NatureServe BIOTICS databases updated
  - Linkages of the USNVC hierarchy with the MCV California Alliances
  - Web-based materials developed showing relationships between the USNVC and the CA Alliances and tools for querying and displaying the vegetation information
  - Outreach/presentation of web-based materials at various venues (CNPS/CDFG workshops, FGDC Vegetation Subcommittee meeting, ESA conference)