

Field Key to Calveg Alliances

Central Valley - Zone 5

Revised March 3, 2010

NRCS plant codes and pseudospecies lists are used in accuracy assessment protocols

I. Key to Lifeforms

- 1A. If absolute canopy closure (cover) of trees (conifers and/or hardwoods) is $\geq 10\%$ of plot or area ... 2
1B. If absolute canopy closure (cover) of trees is $< 10\%$ of plot or area ... 4
- 2A. **Tree Dominated Order:** if conifers have relative canopy cover $> 80\%$ of total tree canopy closure ... **conifer lifeform** and go to **II. Key to Conifers**
2B. **Tree Dominated Order:** if conifers have relative canopy cover $< 80\%$ of total tree canopy closure ... 3
- 3A. If hardwoods have relative canopy cover $> 90\%$ of total tree canopy closure ... **hardwood lifeform** and go to **III. Key to Hardwoods**
3B. If hardwoods have relative canopy cover $\geq 20\%$ of total tree canopy closure and conifers have relative canopy cover $\geq 10\%$ of total tree canopy closure ... **mixed lifeform** and go to **II. Key to Conifers** for conifer component and **III. Key to Hardwoods** for hardwood component
- 4A. **Shrub Dominated Order:** if absolute cover of shrubs is $\geq 10\%$ of plot or area ... **shrub lifeform** and go to **IV. Key to Shrubs and Subshrubs**
4B. If absolute cover of shrubs is $< 10\%$ of plot or area ... 5
- 5A. **Herbaceous or Non-Vascular Dominated Order:** if absolute cover of other vascular vegetation is $\geq 10\%$ of plot or area ... **herbaceous lifeform** and go to **V. Key to Grasses and Forbs**
5B. If absolute cover of other vascular vegetation is $< 10\%$ of plot or area ... **sparsely vegetated or non-vegetated lifeform** and go to **VI. Key to Sparsely Vegetated and Non-Vegetated Types**

II. Key to Conifers

cc = conifer canopy cover

- 1A. A single naturally occurring (native) conifer species or genus has $\geq 50\%$ cc ... 2
1B. No single naturally occurring (native) conifer species or genus has $\geq 50\%$ cc ... 18
- 2A. McNab Cypress (**CUMA**) has $\geq 50\%$ cc ... **McNab Cypress - MN**
2B. Otherwise ... 3
- 3A. Ponderosa Pine or Jeffrey Pine alone or their combination has $\geq 75\%$ cc ... 4
3B. Otherwise ... 7
- 4A. Ponderosa Pine has $\geq 75\%$ cc [or Ponderosa Pine and Jeffrey Pine (**PSEUDO1: PIPO, PIJE**) in combination has $\geq 75\%$ and Ponderosa Pine cover is $>$ Jeffrey Pine] and Great Basin species [**PSEUDO4SHB**: Bitterbrush; Curlleaf Mountain Mahogany; Unknown Sagebrush; Basin, Silver, Black

and Low Sagebrush; and/or species of Rabbitbrush (**ARTEM, ARTR2, ARAR8, ARNO4, ARCA13, PUTR2, PUGL2, CELE3, CHNA2, CHPA13, CHRYS9**); and/or Singleleaf Pinyon Pine (**PIMO**) have < 10% of the total vegetation cover ... **Ponderosa Pine - PP**
4B Otherwise ... 5

5A. Jeffrey Pine has $\geq 75\%$ cc [or Ponderosa Pine and Jeffrey Pine (**PSEUDO1: PIPO, PIJE**) in combination have $\geq 75\%$ cc and Jeffrey Pine cover is > Ponderosa Pine] and Great Basin species (**PSEUDO4SHB**) and/or Singleleaf Pinyon Pine (**PIMO**) have < 10% of the total vegetation cover ...
Jeffrey Pine - JP
5B Otherwise ... 6

6A. Jeffrey Pine (**PIJE**) or Ponderosa Pine (**PIPO**) singly or in combination have $\geq 75\%$ cc and Great Basin species (**PSEUDO4SHB**) and/or Singleleaf Pinyon Pine (**PIMO**) have $\geq 10\%$ of the total vegetation cover ... **Eastside Pine - EP**
6B. Otherwise ... 7

7A. Knobcone Pine (**PIAT**) has $\geq 75\%$ cc ... **Knobcone - KP**
7B. Otherwise ... 8

8A. Gray Pine (**PISA2**) has $\geq 75\%$ cc ... **Gray Pine - PD**
8B. Otherwise ... 9

9A. Singleleaf Pinyon Pine (**PIMO**) has $\geq 75\%$ cc ... **Singleleaf Pinyon Pine - PJ**
9B. Otherwise ... 10

10 A. Pacific Douglas-Fir (**PSME**) has > 75% cc ... **Pacific Douglas-Fir - DF**
10 B. Otherwise ... 11

11A. Bigcone Douglas-Fir (**PSMA**) has $\geq 75\%$ cc ... **Bigcone Douglas-Fir - DM**
11B. Otherwise ... 12

12 A. Piute Cypress (**CUARN2**) has $\geq 50\%$ cc ... **Piute Cypress - MI**
12 B. Otherwise ... 13

13A. Tree form California Juniper (**JUCA7**) has $\geq 75\%$ cc ... **California Juniper - JT**
13B. Otherwise ... 14

14A. Incense Cedar (**CADE27**) has $\geq 75\%$ cc ... **Incense Cedar - MD**
14B. Otherwise ... 15

15A. Pacific Douglas-Fir has $\geq 50\%$ cc and Ponderosa Pine has > 20% cc (**PSME, PIPO**) ... **Douglas-Fir - Pine - DP**
15B. Otherwise ... 16

16A. Pacific Douglas-Fir has $\geq 50\%$ cc and White Fir has $\geq 20\%$ cc (**PSME, ABCO**) ... **Douglas-Fir - White Fir - DW**
16B. Otherwise ... 17

17A. Ponderosa Pine has $\geq 50\%$ cc and White Fir has $\geq 20\%$ cc (**PIPO, ABCO**) ... **Ponderosa - White Fir - PW**

17B. Otherwise ... 18

Note: this starts the group of non-dominant or non-native conifers

18A. Ponderosa Pine and/or Sugar Pine in combination have $\geq 10\%$ cc (**PSEUDO3: PIPO, PILA**) ... **Mixed Conifer-Pine - MP**

18B. Otherwise ... 19

19A. White Fir and Red Fir in combination have $\geq 20\%$ cc (**PSEUDO4: ABCO, ABMA**) ... **Mixed Conifer-Fir - MF**

19B. Otherwise ... 20

20A. Non-native/ornamental conifer mixture is $\geq 50\%$ of conifer canopy cover and non-native hardwood mixture is $> 50\%$ of hardwood canopy cover ... **Non-Native/Ornamental Conifer-Hardwood - IM**

20B. Otherwise ... 21

21A. Non-native/ornamental conifer mixture is $\geq 50\%$ of cc ... **Non-Native/Ornamental Conifer - IC**

21B. Otherwise ... **Conifer type not determined - XC**

III Key to Hardwoods

hc = hardwood canopy cover

1A. One native hardwood species (or genus) has $\geq 50\%$ hc ... 2

1B. No single native hardwood species (or genus) has $\geq 50\%$ hc ... 18

2A. California Sycamore (**PLRA**) has $\geq 50\%$ hc ... California Sycamore - QP

2B. Otherwise ... 3

3A. Tanoak (**LIDE3**) has $\geq 50\%$ hc ... **Tanoak - QT**

3B. Otherwise ... 4

4A. Madrone (**ARME**) has $\geq 50\%$ hc ... **Madrone - QH**

4B. Otherwise ... 5

5A. Willow (tree forms of **SALIX**) has $\geq 50\%$ hc ... **Willow - QO**

5B. Otherwise ... 6

6A. White Alder (**ALRH2**) has $\geq 50\%$ hc ... **White Alder - QE**

6B. Otherwise ... 7

7A. Fremont Cottonwood has $\geq 50\%$ hc.

(**PSEUDO5: POFR2, POFR3**)... **Fremont Cottonwood - QF**

7B. Otherwise ... 8

8A. Bigleaf Maple (**ACMA3**) has $\geq 50\%$ hc ... **Bigleaf Maple - QM**

8B. Otherwise ... 9

9A. Black Oak (**QUKE**) has $\geq 50\%$ hc ... **Black Oak - QK**

9B. Otherwise ... 10

10A. Oregon White Oak (**QUGA4**) has $\geq 50\%$ hc ... **Oregon White Oak - QG**

10B. Otherwise ... 11

11A. Blue Oak (**QUDO**) has $\geq 50\%$ hc ... **Blue Oak - QD**

11B. Otherwise ... 12

12A. Coast Live Oak (**QUAG**) has $\geq 50\%$ hc ... **Coast Live Oak - QA**

12B. Otherwise ... 13

13A. Canyon Live Oak (**QUCH2**) has $\geq 50\%$ hc ... **Canyon Live Oak - QC**

13B. Otherwise ... 14

14A. Interior Live Oak (**QUWI2**) has $\geq 50\%$ hc ... **Interior Live Oak - QW**

14B. Otherwise ... 15

15A Valley Oak (**QULO**) has $\geq 50\%$ hc ... **Valley Oak - QL**

15B. Otherwise ... 16

16A. Eucalyptus of any species (**EUCAL**) has $\geq 50\%$ hc ... **Eucalyptus - QZ**

16B. Otherwise ... 17

17A. California Buckeye has $\geq 50\%$ hc (**PSEUDO8: AECA**) ... **California Buckeye - QI**

17B. Otherwise ... 18

Mixed hardwoods groups; no single native species has $\geq 50\%$ hc

18A. Combination of Tanoak and Madrone has $\geq 50\%$ hc (**LIDE3, ARME**) ... **Tanoak - QT**

18B. Otherwise ... 19

19A. Black Cottonwood (**POBAT**) or Fremont Cottonwood and any tree species of Alder in combination have $\geq 50\%$ hc (**PSEUDO5, PSEUDO6: ALNUS, ALRH2, ALRU2, ALINT, ALVIS**) ... **Cottonwood - Alder - QJ**

19B. Otherwise ... 20

20A. A mixture of riparian hardwoods, including Tree Alders, Tree Willows, Cottonwoods, Valley Oak, Sycamore, and/or California Bay in combination have $\geq 50\%$ hc (**PSEUDO7: ALNUS, ALRH2, ALRU2, ALINT, ALVIS, POBAT, PLRA, POFR2, POFRF3, QULO, SALIX, UMCA**) ... **Riparian Mixed Hardwoods - NR**

20B. Otherwise ... 21

21A. A mixture of montane hardwoods, including Black Oak, Madrone, Tanoak, Bigleaf Maple, and/or Tree Chinquapin in combination have $\geq 50\%$ hc (**PSEUDO9: ACMA3, ARME, CACH6, LIDE3, QUKE**) ... **Montane Mixed Hardwood -TX**

21B. Otherwise ... 22

22A. A mixture of hardwoods, including California Bay, California Buckeye, Coast Live Oak, Canyon Live Oak, Blue Oak, Oregon White Oak, and/or Interior Live Oak in combination have $\geq 50\%$ hc (PSEUDO10: AECA, QUAG, QUCH2, QUDO, QUGA4, QUWI2, UMCA) ... **Interior Mixed Hardwood - NX**

22B. Otherwise ... 23

23A. Non-native hardwood mixture has $\geq 50\%$ of hardwood canopy cover ... **Non-Native/Ornamental Hardwood - IH**

23B. Otherwise ... 24

24A. Agricultural lands have $\geq 50\%$ hc ... **Orchard Agriculture - A4**

24B. Otherwise ... **Unknown hardwood type - XH**

IV Key to Shrubs and Subshrubs

sc = shrub canopy cover

1A. A single native shrub species or genus has $\geq 50\%$ sc ... 2

1B. No one single native shrub species or genus has $\geq 50\%$ shrub sc ... 22

2A. California Buckwheat (ERFA2) has $\geq 50\%$ sc ... **Buckwheat - SB**

2B. Otherwise ... 3

3A. Wedgeleaf Ceanothus (CECU) has $\geq 50\%$ sc ... **Wedgeleaf Ceanothus - CL**

3B. Otherwise ... 4

4A. Chamise (ADFA) has $\geq 50\%$ sc ... **Chamise - CA**

4B. Otherwise ... 5

5A. Whiteleaf Manzanita (ARVI4) has $\geq 50\%$ sc ... **Whiteleaf Manzanita - CW**

5B. Otherwise ... 6

6A. Ceanothus species, other than dominant Wedgeleaf, Snowbrush, or Deerbrush, including Cupleaf, Mountain Whitethorn, Chaparral Whitethorn, Lemmon, Woolyleaf, Mahala Mat, Wavyleaf, Hairy, Kern, and/or other Ceanothus species alone or in combination have $\geq 50\%$ sc (PSEUDO11: CEANO, CECU, CECO, CEFO, CEGR, CEGRP2, CEIN3, CELE, CELE2, CEOL, CEPR, CETO, CEVE, CEPI) ... **Ceanothus Chaparral - CC**

6B. Otherwise ... 7

7A. Brewer Oak (QUGAB) has $\geq 50\%$ sc ... **Brewer Oak - CJ**

7B. Otherwise ... 8

8A. Desert Shrub Oaks alone or in combination have $\geq 50\%$.sc. (PSEUDO20: QUJO3, QUCO7)... **Tucker/Muller Shrub Oak - CT**

8B. Otherwise ... 9

9A. Scalebroom has $\geq 50\%$ sc (PSEUDO21: LESQ, LELA4) ... **Scalebroom - LS**

9B. Otherwise ... 10

10A. Riparian species of *Baccharis* have > 50% sc (**PSEUDO22: BASA4, BASE, BABR, BASA2, BAEM**) ... **Baccharis - ML**

10B. Otherwise ... 11

11A. Birchleaf Mountain Mahogany (**CEBE3, CEMO2, CEMOG**) has \geq 50% sc ... **Birchleaf Mountain Mahogany - WM**

11B. Otherwise ... 12

12A Chaparral Yucca (**YUWH**) has \geq 50% sc ... **Chaparral Yucca - SY**

12B Otherwise ... 13

13A. Shrub form of California Juniper (**JUCA7**) has \geq 50% sc ... **California Juniper - JC**

13B. Otherwise ... 14

14A. Shrub-form Oaks singly or in mixture have \geq 50% sc (**PSEUDO12: QUCHN, QUDU4, QUERC, QUGAB, QUKE, QUVA, QUWIF**) ... **Scrub Oak - CS**

14B. Otherwise ... 15

15A. Manzanita other than dominant Whiteleaf, dominant Greenleaf, dominant Pinemat or dominant Nissenan species, including Ione, Common, Mexican, Hoary, Eastwood, and/or Bigberry alone or in combination have \geq 50% sc (**PSEUDO13: ARCA5, ARGL3, ARGL4, ARMA, ARNE, ARPA6, ARPU5, ARVI4, ARMY, ARNI**) ... **Manzanita Chaparral - SD**

15B. Otherwise ... 16

16A. Basin Sagebrush (**ARTEM, ARTR2, ARTRT**) has \geq 50% sc ... **Basin Sagebrush - BS**

16B. Otherwise ... 17

17A. Rabbitbrush (*Chrysothamnus* spp., *Ericameria* spp.) has \geq 50% sc (**PSEUDO14: CHRYS9, ERNA10, CHNA2, CHPA13, ERPAP10**)... **Rabbitbrush - BR**

17B. Otherwise ... 18

18A. Shrub Willow (*Salix* spp.) has > 50% sc (**PSEUDO15: SABR2, SAEX, SALA6, SALE, SALIX, SALU, SALU2, SAME2, SAPR3, SASC, SASI2**) ... **Willow (Shrub) - WL**

18B. Otherwise ... 19

19A. Bladderpod (**CLIS - *Cleome isomeris***) has \geq 50% sc... **Bladder Pod - SI**

19B. Otherwise ... 20

20A. Saltbush species (*Atriplex* spp.) alone or in combination have \geq 50% sc (**PSEUDO26: ATRIP, ATCA2, ATCO, ATPO**) ... **Saltbush - BC**

20B. Otherwise ... 21

21A. Snowberry (*Symphoricarpos* spp.) of any species, such as Common, Creeping, Roundleaf or Mountain has > 50% shrub cover (**PSEUDO27: SYMPH, SYAL, SYMO, SYOR2, SYRO**) ...

Snowberry - TS

21B. Otherwise... 22

Note: key continues where no shrub species or genus has $\geq 50\%$ sc

22A. Great Basin and semiarid shrubs in mixture have $\geq 50\%$ [**PSEUDO4SHB, PSEUDO28**: Interior Goldenbush (**ERLI6**), Desert Almond (**PRFA**)] ... **Great Basin Mixed Scrub - BQ**

22B. Not as above ... 23

23A. This is a mixture of mid to upper montane hard chaparral species and Great Basin shrub species. Chaparral shrubs including Utah Serviceberry, Greenleaf Manzanita, Mountain Whitethorn, Deerbrush, Mahala Mat, Snowbrush, Bush Chinquapin, Coastal Silktassel, Klamath Plum, Shrub Canyon Live Oak, Thimbleberry, Creeping, Roundleaf and/or other species of Snowberry singly or in combination have $\geq 25\%$ sc (**PSEUDO17: AMUT, ARPA6, CECO, CEIN3, CEPR, CEVE, CHSE11, GAEL, PRSU2, QUCHN, RUPA, SYMO, SYOR2, SYMPH**) and Great Basin shrub species (**PSEUDO4SHB**) singly or in combination have $\geq 25\%$ sc ... **Great Basin - Mixed Chaparral Transition - BX**

23B. Otherwise... 24

24A. An alluvial fan or wash xeric condition where no single species dominates. Indicator species are Scalebroom, California Buckwheat, California Sagebrush, White Sage, and Brittlebush. Other shrubs in the mixture may include Prickly Pears and Cholla (*Opuntia* spp.), Chaparral Yucca, Sumacs (*Rhus* spp.), Fourwing Saltbush and California Juniper, the total shrub mixture having 50% sc (**PSEUDO28: LESQ, ERFA2, ARCA11, SAAP2, ENFA, OPUTI, YUWH, RHUS, ATCA2, JUCA7**) ... **Riversidean Alluvial Scrub - RS**

24B. Otherwise ... 25

25A. A mixture of montane chaparral species in which any of the following in combination of three or more have $\geq 50\%$ sc (**PSEUDO17**); Chamise (**ADFA**) has $< 5\%$ sc ... **Upper Montane Mixed Chaparral - CX**

25B. Otherwise ... 26

26A. A lower elevation mixture of common hard chaparral species in combination of three or more occupies $\geq 50\%$ sc, including some of the following indicators: Chamise ; Whiteleaf, Bigberry, Eastwood, Common or other species of Manzanita; Wedgeleaf Ceanothus; California Buckwheat; Scrub Oak; Shrub Interior Live Oak; Birchleaf Mountain Mahogany; species of *Rhus*; Chaparral, Wavyleaf, Fremont or other species of Silktassel; Hollyleaf Redberry, Hollyleaf Cherry, Hoary or California Coffeberry; Cupleaf Ceanothus, Chaparral Whitethorn or other species of *Ceanothus*; California or Thicketleaf Yerba Santa; California Ash; Oceanspray; Chaparral Yucca; Poison Oak and/or Toyon. (**PSEUDO18: ADFA, ARCTO3, ARGL3, ARGL4, ARMA, ARVI4, CEANO, CEBE3, CEMOG, CEMO2, CECU, CEGR, CELE2, ERCA6, ERCR2, ERFA2, FRCAT2, FRCAC5, FRDI2, GACO9, GAEL, GAFR, GARRY, HEAR5, HODI, PRIL, QUBE5, QUWIF, RHIL, RHUS, TODI, YUWH**). Great Basin shrubs (**PSEUDO4SHB**) have $< 25\%$ sc ... **Lower Montane Mixed Chaparral - CQ**

26B. Otherwise ... 27

27A. An edaphic mixture of shrubs in certain limited areas that includes any of the following in combination of two or more having $\geq 50\%$ sc: Jepson Ceanothus, Wedgeleaf Ceanothus, California Coffeberry, Shrub Tanoak, Creeping Barberry, Dwarf Barberry, Oregon grape, Wavyleaf Ceanothus, Whiteleaf Manzanita, Interior Silktassel, and/or Leather Oak (**PSEUDO19: ARVI4, BEPI2, BEPU, BERE, CECU, CEFO, CEJE, FRCAO4, GACO9, LIDEE, QUDU4**) ... **Ultramafic Mixed Shrub Alliance - C1**

27B. Otherwise ... 28

- 28A. Non-native or ornamental cultivated shrubs have $\geq 50\%$ sc ... **Non-Native/Ornamental Shrub-IS**
28B. Otherwise ... **Unknown shrub type - XS**

V. Key to Grasses and Forbs

hbg = herbaceous cover

- 1A. Habitat is seasonally flooded or permanently flooded or saturated ... 2
1B. Habitat is not seasonally flooded ... 4
- 2A. Hydrophytic grasses and grass-like species (Sedges, Rushes, Bulrushes) in mixture with hydrophytic herbaceous species (False Hellebore, Lily, Shooting Star, Gentian, etc.) growing mainly in organic soil have $\geq 50\%$ hbg ... **Wet Meadows Alliance - HJ**
2B. Otherwise ... 3
- 3A. Marshes adjacent to perennial fresh water sources containing mixtures of Tule or other Bulrushes and Cattails rooting below the water's surface have $\geq 50\%$ hbg ... **Tule - Cattail - HT**
3B. Otherwise ... **Unknown herbaceous or grass type - XG**
- 4A. Annual grasses mixed with annual and/or perennial forbs which generally have limited surface or subsurface moisture in midsummer having $\geq 50\%$ hbg ... **Annual Grasses and Forbs - HG**
4B. Otherwise ... 5
- 5A. Unmanaged or natural areas containing mixtures of grasses and/or forbs that retain some moisture in midsummer, such as those in middle or higher elevations having $\geq 50\%$ hg ... **Perennial Grasses and Forbs - HM**
5B. Otherwise ... 6
- 6A. A mixture of non-native or invasive grass-like riparian species such as Pampas Grasses (**CORTA**) or Giant Reed (**ARDO4**) have $\geq 50\%$ hbg ... **Giant Reed/Pampas Grass - IA**
6B. Otherwise ... 7
- 7A. Non-native cultivated grasses and herbaceous cover ... **Non-Native/Ornamental Grasses - IG**
7B. Otherwise ... 8
- 8A. Agricultural lands have $\geq 50\%$ hbg ... **Grain and Crop Agriculture - A6**
8B. Otherwise ... **Unknown grass or herbaceous type - XG**

VI. Key to Sparsely Vegetated and Non-Vegetated Types

nvc = non-vegetated cover

- 1A. Dry urbanized or developed lands have $\geq 50\%$ nvc ... **Urban-related Bare Soil - IB**
1B. Otherwise ... 2
- 2A. Wet urbanized or developed lands have $\geq 50\%$ nvc ... **Developed Water Features - IW**
2B. Otherwise... 3

3A. Agricultural uses comprise $\geq 50\%$ nvc ... **Agriculture - AG**

3B. Otherwise ... 4

4A. Urban or otherwise developed landscapes (highways, etc.) $\geq 50\%$ nvc ... **Urban or Developed - UB**

4B. Otherwise ... 5

5A. Open water or confined water courses occupy $\geq 50\%$ nvc ... **Water - WA**

5B. Otherwise ... 6

6A. Otherwise naturally barren landscapes (cliffs, bedrock, etc.) and mine quarries occupy $\geq 50\%$ nvc ...

Barren - BA

6B. Otherwise ... **Unknown non-vegetated type ... XZ**