

# Field Key to Calveg Alliances

## South Interior - Zone 8

Revised March 3, 2010

Using NRCS codes from the Plants Database

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  $\leq 80\%$  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 vascular vegetation is  $< 10\%$  of plot or area ... **sparsely vegetated or non-vegetated lifeform** and go to **VI. Key to Sparsely Vegetated and Desert Types** or **VII. Key to Non-Vegetated Types**

### II. Key to Conifers

cc = conifer canopy cover

- 1A. A single naturally occurring conifer species or genus has  $\geq 75\%$  cc ... 2  
1B. No single naturally occurring conifer species or genus has  $\geq 75\%$  cc ... 8
- 2A. Grey Pine (PISA2) has  $\geq 75\%$  cc ... Grey Pine - PD  
2B. Otherwise ...3
- 3A. Bigcone Douglas-Fir (PSMA) has  $\geq 75\%$  cc ... Bigcone Douglas-Fir - DM  
3B. Otherwise ...4
- 4A. Singleleaf Pinyon Pine (PIMO) has  $\geq 75\%$  cc ... Singleleaf Pinyon Pine - PJ  
4B. Otherwise ...5

5A. Jeffrey Pine (PIJE) or Ponderosa Pine (PIPO) singly or in combination have  $\geq 75\%$  cc and Great Basin shrub or other conifer species are present. These include the following Great Basin shrubs: Curleaf Mountain Mahogany; non-dominant Tucker and/or Muller Oak; Basin, Black or other Sagebrush; Bitterbrush; Rabbitbrush; and/or Desert Peach (PSEUDO1SHB: CELE3, QUJO3, QUCO7, ARTR2, ARNO4, ARTEM, PUGL2, PUTR2, CHRYS9, ERNA10, CHVI8, PRAN2); and/or eastside conifers such as Singleleaf Pinyon Pine and Utah Juniper alone or in combination (PSEUDO1CON: PIMO, JUOS) are present ... Eastside Pine - EP

5B. Otherwise ... 6

6A. Jeffrey Pine has  $\geq 75\%$  cc and Great Basin shrub species (PSEUDO1SHB) are present and eastside conifers (PSEUDO1CON) alone or in combination are absent ... Jeffrey Pine - JP

6B. Otherwise ... 7

7A. Ponderosa Pine has  $\geq 75\%$  cc and Great Basin shrub species (PSEUDO1SHB) are absent and eastside conifers (PSEUDO1CON) alone or in combination are not present ... Ponderosa Pine - PP

7B. Otherwise ... 8

REM: non-native or mixed conifers

8A. Agricultural lands have conifer cover of  $\geq 50\%$  of area ... Conifer Agriculture - A1

8B. Otherwise ... 9

9A. Non-native/ornamental conifer mixture is  $\geq 50\%$  cc and non-native hardwood mixture has  $\geq 50\%$  of hardwood canopy cover ... Non-Native/Ornamental Conifer-Hardwood - IM

9B. Otherwise ... 10

10A. Non-native/ornamental conifer mixture is  $\geq 50\%$  of cc ... Non-Native/Ornamental Conifer - IC

10B. Otherwise ... Unknown Conifer - XC

### III Key to Hardwoods

hc = hardwood canopy cover

1A. Non-desert evergreen or deciduous hardwood species, including those in orchards and developed areas, are prominent; desert hardwood species, including palm, succulent or thorn types are generally absent ... 2

1B. Desert hardwood species are prominent, including palm, succulent and thorn types; non-desert evergreen or deciduous hardwood species are generally absent ... 17

2A. Valley Oak (QULO) has  $\geq 50\%$  hc ... **Valley Oak - QL**

2B. Otherwise ... 3

3A. Fremont Cottonwood has  $\geq 50\%$  hc (**PSEUDO2: POFR2, POFRA, POFRF3, POFRM, POFRP**) .. **Fremont Cottonwood - QF**

3B. Otherwise ... 4

4A. California Sycamore (PLRA) has  $\geq 50\%$  hc ... **California Sycamore - QP**

4B. Otherwise ... 5

5A. Tree Willows (**SALIX**) singly or in combination have  $\geq 50\%$  hc ... **Willow - QO**

5B. Otherwise ... 6

6A. Quaking Aspen (**POTR5**) has  $\geq 50\%$  hc ... **Quaking Aspen - QQ**

6B. Otherwise ... 7

7A. Water Birch (**BEOC2**) has  $\geq 50\%$  hc ... **Water Birch - FO**

7B. Otherwise ... 8

8A. Black Oak (**QUKE**) has  $\geq 50\%$  hc ... **Black Oak - QK**

8B. Otherwise ... 9

9A. Black Cottonwood (**POTR15**) has  $\geq 50\%$  hc ... **Black Cottonwood - QX**

9B. Otherwise ... 10

10A. Blue Oak (**QUDO**) has  $\geq 50\%$  hc ... **Blue Oak - QD**

10B. Otherwise ... 11

11A. Canyon Live Oak (**QUCH2**) has  $\geq 50\%$  hc ... **Canyon Live Oak - QC**

11B. Otherwise ... 12

12A. Interior Live Oak (**QUWI2**) has  $\geq 50\%$  hc ... **Interior Live Oak - QW**

12B. Otherwise ... 13

13A. Combination of lower elevation, interior, native hardwoods in which no single species is dominant but the combination has  $\geq 50\%$  hc, including California Bay, Canyon Live Oak, Interior Live Oak and/or Blue Oak (**PSEUDO30: UMCA, QUCH2, QUWI2, QUDO**); trees in the Riparian Mixed Hardwood mixture (**PSEUDO29**) have  $< 25\%$  hc ... **Interior Mixed Hardwood - NX**

13B. Otherwise ... 14

14A. Mixture of non-dominant riparian species in any combination of three or more, including Fremont Cottonwood, California Sycamore, Water Birch, Tree Willows, Valley Oak, and/or Quaking Aspen (**PSEUDO29: PSEUDO2, PLRA, BEOC2, SALIX, QULO, POTR5**) have  $\geq 50\%$  hc ... **Riparian Mixed Hardwood - NR**

14B. Otherwise ... 15

15A. Agricultural lands have  $\geq 50\%$  hc ... **Orchard Agriculture - A4**

15B. Otherwise ... 16

16A. Non-native hardwood mixture has  $\geq 50\%$  hc ... **Non-Native/Ornamental Hardwood - IH**

16B. Otherwise ... **Unknown Hardwood - XH**

REM: desert species begin

17A. Fan Palm (**WASHI**) has  $\geq 50\%$  hc ... **Fan Palm - UW**

17B. Otherwise ... 18

18A. Joshua Tree (**PSEUDO3: YUBRB, YUBRH, YUBR**) has  $\geq 50\%$  hc ... **Joshua Tree - UJ**

18B. Otherwise ... 19

19A. Desert Willow (**PSEUDO35: CHLIA, CHLI2, CHLIO**) has  $\geq 50\%$  hc ... **Desert Willow - UD**

19B. Otherwise ... 20

20A. Paloverde (**PSEUDO36: CEFL6, CEMI6, PARK12**) has  $\geq 50\%$  hc ... **Paloverde - UP**

20B. Otherwise ... 21

21A. Smoke Tree (**PSSP3**) has  $\geq 50\%$  hc ... **Smoke Tree - UX**

21B. Otherwise ... 22

22A. Tree form of Catclaw Acacia (**PSEUDO39: ACGR, ACACI**) has  $\geq 50\%$  hc ... **Catclaw Acacia - UL**

22B. Otherwise ... 23

23A. Tamarisk species alone or in combination (**PSEUDO38: TAAP, TAAF, TAAR6, TACH2, TAMAR2, TAPA4, TAGA, TAPE, TARA**) have  $\geq 50\%$  hc ... **Tamarisk - UT**

23B. Otherwise ... 24

24A. Non-native hardwood mixture has  $\geq 50\%$  of hardwood canopy cover ... **Non-Native/Ornamental Hardwood - IH**

24B. Otherwise ... **Unknown Hardwood - XH**

## IV Key to Shrubs and Subshrubs

sc = shrub canopy cover

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

1B. No naturally occurring single shrub species or genus has  $\geq 50\%$  shrub cc ... 32

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

2B. Otherwise ... 3

3A. Encelia species (**PSEUDO41: ENFA, ENAC, ENCEL, ENFR, ENVI**) alone or in combination have  $\geq 50\%$  sc ... Encelia Scrub - SE

3B. Otherwise ... 4

4A. Baccharis (riparian or dry wash) species (**PSEUDO20: BAEM, BASA2, BASA4, BASE, BABR, BACCH, BAGL2**) alone or in combination in riparian setting have  $\geq 50\%$  sc ... Baccharis (Riparian) - ML

4B. Otherwise ... 5

5A. Chamise (ADFA) has  $\geq 50\%$  sc ... Chamise - CA

5B. Otherwise ... 6

6A. Shrub Oaks (**PSEUDO21: QUERC, QUCHN, QUBE5, QUKE, QUWIF, QUPA10**) alone or in combination have  $\geq 50\%$  sc ... Scrub Oak - CS

6B. Otherwise ... 7

- 7A. Birchleaf Mountain Mahogany (CEBE3) has  $\geq 50\%$  sc ... Birchleaf Mountain Mahogany - WM  
7B. Otherwise ... 8
- 8A. Ceanothus species (PSEUDO15: CEANO, CECU, CETO, CEDI2, CEGRP2, CEGRV2, CEGR, CECO) alone or in combination have  $\geq 50\%$  sc ... Ceanothus Chaparral - CC  
8B. Otherwise ... 9
- 9A. Manzanita species (PSEUDO4: ARCTO3, non-dominant ARPA6, ARGL3, ARGL4, ARPU5) alone or in combination have  $\geq 50\%$  sc ... Manzanita Chaparral - SD  
9B. Otherwise ... 10
- 10A. Shrub form of California Juniper (JUCA7) has  $\geq 50\%$  sc ... California Juniper - JC  
10B. Otherwise ... 11
- 11A. Creosote (LADI2) has  $\geq 50\%$  sc ... Creosote Bush - DL  
11B. Otherwise ... 12
- 12A. Blackbush (CORA) has  $\geq 50\%$  sc ... Blackbush - DA  
12B. Otherwise ... 13
- 13A. White Bursage (AMDU2) has  $\geq 50\%$  sc ... White Bursage - AD  
13B. Otherwise ... 14
- 14A. Cholla species (OPAC, OPUNT) alone or in combination have  $\geq 50\%$  sc ... Cholla - DC  
14B. Otherwise ... 15
- 15A. Ocotillo (FOSP2) has  $\geq 50\%$  sc ... Ocotillo - DO  
15B. Otherwise ... 16
- 16A. Buckwheat species in desert (PSEUDO22: ERIOG, ERWR, non-dominant ERFA2, ERDE9, ERMI4, ERHE, ERPL3, ERUM) in any combination have  $\geq 50\%$  sc ... Desert Buckwheat - DB  
16B. Otherwise ... 17
- 17A. Cottonthorn or Horsebrush species (PSEUDO13: TEAR, TEAX, TECA2, TEGL, TEST2) alone or in combination have  $\geq 50\%$  sc ... Cottonthorn (Horsebrush) - TM  
17B. Otherwise ... 18
- 18A. Burrobush or Cheesebush (HYSA) has  $\geq 50\%$  sc ... Burrobush (Cheesebush) - HS  
18B. Otherwise ... 19
- 19A. Scalebroom (LESQ) has  $\geq 50\%$  sc ... Scalebroom - LS  
19B. Otherwise ... 20
- 20A. Basin Sagebrush (PSEUDO25: ARTR2, ARTRT) has  $\geq 50\%$  sc ... Basin Sagebrush - BS  
20B. Otherwise ... 21
- 21A. Rabbitbrush species (PSEUDO18: CHRYS9, CHPA13, CHVI8, CHNAC3, ERNA10, CHAL9) alone or in combination have  $\geq 50\%$  sc ... Rabbitbrush - BR

21B. Otherwise ... 22

22A. Shadscale (ATCO) has  $\geq 50\%$  sc ... Shadscale - DS

22B. Otherwise ... 23

23A. Saltbush species (PSEUDO19: ATRIP, ATCA2, non-dominant ATCO, ATPO) alone or in combination have  $\geq 50\%$  sc ... Saltbush - BC

23B. Otherwise ... 24

24A. Bitterbrush (PSEUDO10: PUTR2, PUGL2) has  $\geq 50\%$  sc ... Bitterbrush - BB

24B. Otherwise ... 25

25A. Greasewood (CORA) has  $\geq 50\%$  sc ... Greasewood - BG

25B. Otherwise ... 26

26A. Indigo Bush species (PSEUDO24: PSORO, PSAR4, PSFR, PSPO, PSSC5) alone or in combination have  $\geq 50\%$  sc ... Indigo Bush - DI

26B. Otherwise ... 27

27A. Epehdra species (PSEUDO23: EPHED, EPNE, EPVI) alone or in combination have  $\geq 50\%$  sc ... Epehdra - FD

27B. Otherwise ... 28

28A. Shrub Willows (PSEUDO26: SASC, SALIX, SAEX, SALA6, SALU2) alone or in combination have  $\geq 50\%$  sc ... Shrub Willow - WL

28B. Otherwise ... 29

29A. Littleleaf Mountain Mahogany (CEIN7) has  $\geq 50\%$  sc ... Littleleaf Mountain Mahogany - BI

29B. Otherwise ... 30

30A. Desert Shrub Oaks alone or in combination have  $\geq 50\%$  sc (PSEUDO50: QUJO3, QUCO7) ... Tucker / Muller Shrub Oak - CT

30B. Otherwise ... 31

31A. Mountain Whitethorn (CECO) has  $\geq 50\%$  sc ... Mountain Whitethorn - CY

31B. Otherwise ... 32

Note: beginning of agriculture shrubs and non-dominant shrub mixtures

32A. Agricultural lands have  $\geq 50\%$  sc ... Vineyard – Shrub Agriculture - A2

32B. Otherwise ... 33

33A. An alluvial fan or dry wash condition where there is no clearly dominant species. The species mixture containing California Buckwheat, Prickly Pears and Cholla, Chaparral Yucca, White Sage, Sumacs, Fourwing Saltbush, California Juniper and/or Brittlebush is  $\geq 50\%$  sc (PSEUDO5: ATCA2, ENFA, ERFA2, JUCA7, LESQ, OPAC, OPOCL, OPUNT, PUGL2, RHUS, SAAP2, YUWH) ... Riversidean Alluvial Scrub - RS

33B. Otherwise ... 34

34A. A mixture of soft scrub or semiwoody species alone or hard, lower elevation chaparral and soft scrub species has at least 50% of the shrub cover. Type is often initiated by fire or other major disturbance. Less woody species commonly found are White Sage, California Buckwheat, Brittlebush, Hairy Yerba Santa, Interior, Cooper's or Cliff Goldenbush, Pinebush, and/or Deerweed (PSEUDO14: SAAP2, ERFA2, ENFA, ERTR7, ERLI6, ERCO23, ERCU7, ERPI7, LOSC). More woody, lower elevation chaparral shrub species include Manzanitas, Birchleaf Mountain Mahogany, shrubby Oaks, species of Ceanothus, Hollyleaf Redberry, and/or Sugar Bush may occur in the mixture (PSEUDO44: ARCTO3, ARGL3, ARGL4, CEBE3, QUERC, CEANO, CEGR, RHOV, RHIL) ... Soft Scrub - Mixed Chaparral - SQ  
34B. Otherwise ... 35

35A. A mixture of lower elevation hard chaparral species and Mojave and/or Colorado Desert shrub species. Hard chaparral species (PSEUDO44) have  $\geq 50\%$  sc. The warm desert indicator species, including succulents, have  $\geq 25\%$  sc and may include any of the following: Desert Almond or Apricot, Goldenbush, Mojave Yucca, species of Cholla or Prickly Pear and/or non-dominant species of Mormon Tea (PSEUDO6: PRFA, PRFR, ERLI6, ERCO23, ERCU7, YUSC, OPUNT, OPBI, OPAC, OPER, OPBA2, OPEN3, OPPH, EPHEd) ... Semi-Desert Chaparral - CZ  
35B. Otherwise ... 36

36A. A lower elevation mixture of common hard chaparral species combine to occupy  $\geq 50\%$  sc (PSEUDO44) and warm desert indicator species (PSEUDO6) have  $< 25\%$  sc ... Lower Montane Mixed Chaparral - CQ  
36B. Otherwise ... 37

37A. A mixture of desert scrub species having  $> 50\%$  sc, including some of the following: Creosote Bush, non-dominant Yucca shrubs, White Bursage, Brittlebush, Jojoba, Shrub Catclaw Acacia, Hopsage, Boxthorn, Rhatany, and/or Ocotillo (PSEUDO7: LATR2, YUCCA, YUSC, AMDU2, ENFA, SICH, ACGR, GRSP, LYCO2, KRAME, FOSP2). Minor amounts of succulents such as Barrel Cacti, Desert Agave, Strawberry Cactus or Cholla or Prickly Pears (PSEUDO8: FEROC, AGDE, MADI3, OPUNT, OPBI, OPAC, OPER, OPBA2, OPEN3, OPPH) may also be in the mixture but are not prominent in the mixture ... Desert Mixed Shrub - DX  
37B. Otherwise ... 38

38A. A mixture of non-dominant Great Basin shrub species: in combination (PSEUDO1SHB) have  $\geq 50\%$  shrub cover; and warm desert shrub species (PSEUDO7) have  $< 50\%$  shrub cover ... Great Basin Mixed Scrub - BQ  
38B. Otherwise ... 39

39A. Montane Chaparral species such as: Palmer's Oak, species of Snowberry, and/or Mountain Whitethorn in combination have  $\geq 25\%$  shrub cover (PSEUDO12: QUPA10, SYMPH, CECO), none dominant and Great Basin species (PSEUDO1SHB) in combination have  $\geq 25\%$  shrub cover ... Great Basin - Mixed Chaparral Transition - BX  
39B. Otherwise ... 40

40A. Combinations of Great Basin and Mojave Desert shrubs occur together. Great Basin species (PSEUDO1SHB) have  $\geq 25\%$  of the shrub cover. Warm desert shrub species: (PSEUDO7) singly or in combination have  $\geq 25\%$  of the shrub cover ... Great Basin - Desert Mixed Scrub - BZ  
40B. Otherwise ... 41

41A. Alkaline conditions in which Cacti species (PSEUDO8) have < 10% shrub cover. Combinations of non-dominant Atriplex species, Greasewood, Iodine Bush, Budsage, Molly, Bush Seepweed, Winterfat, and/or Hopsage (PSEUDO16: ATRIP, ATCA2, ATCO, ATPO, SAVE4, ALOC2, ARSP5, KOCHI, SUMO, KRLA2, GRSP) have  $\geq$  50% shrub cover ... Alkaline Mixed Scrub - NA

41B. Otherwise ... 42

42A. Riparian shrub species singly or in combination have  $\geq$  50% sc, including species of Shrub Willows, California Blackberry, Interior Rose, Silver Sagebrush, and/or Blue Elderberry (PSEUDO17: SASC, SALIX, SAEX, SALA6, SALU2, RUUR, ROWO, ARCA13, SAMBU, SAME5) ... Riparian Mixed Shrub - NM

42B. Otherwise ... 43

43A. A desert species mixture that is often on alluvial fans in this area. The following are present in a combination having  $\geq$  50% shrub cover: Indigo Bush, Blackbush, Yellow Rabbitbrush, Green Ephedra, Other Ephedras, and/or Spiny Menodora. Mixture may also include minor amounts of Horsebrush, Greasewood, and/or Hopsage (PSEUDO27: PSORO, PSAR4, PSFR, PSPO, PSSC5, CORA, CHVI8, EPVI, EPHED, MESP2, TETRA3, TEAR, TEAX, TECA2, TECO2, TEDI, TEGL, TEST2, SAVE4, GRSP). The following are often absent or have < 10% shrub cover in combination: [Creosote (LATR2), White Bursage (AMDU2) and Cacti (PSEUDO8) ... High Desert Mixed Scrub - NQ

43B. Otherwise ... 44

44A. California Sagebrush and California Buckwheat combined have  $\geq$  50% sc. Other shrubs in the mixture may include Deerweed, California Encelia, Brittlebush, White Sage, species of Yerba Santa, species of Goldenbush, and minor amounts of Chamise (PSEUDO28: ARCA11, ERFA2, LOSC, ENCA, SAAP2, ERIOD, ERICA, ADFA) ... California Sagebrush - SS

44B. Otherwise ... 45

45A. Non-native or ornamental cultivated shrubs  $\geq$  50% sc ... Non-Native/Ornamental Shub - IS

45B. Otherwise ... Unknown Shrub - XS

## V. Key to Grasses and Forbs

hbg = herbaceous canopy cover

1A. Habitat is seasonally flooded, saturated, or is in a landscape position that occasionally transports or collects surface water ... 2

1B. Habitat is not seasonally flooded ... 5

2A. Hydrophytic grasses and grass-like species: [Sedges (**CAREX**), Rushes (**JUNCU**), Nutsedges (**CYPER**), Spikerushes or Bulrushes (**ELEOC**)] in mixture with hydrophytic perennial herbaceous species: [Mat Muhly (**MURI**), (False Hellebore (**VECA2**), Clovers (**TRIFO**), and/or Seep Monkey Flower (**MIGU**), etc.] growing partially in organic soils have  $\geq$  50% hbg ... **Wet Meadows - HJ**

2B. Otherwise ... 3

3A. Marshes adjacent to perennial fresh water sources containing mixtures of: [Tule (**SCAC**), Great Basin Bulrush (**SCNE**), Southern Cattail (**TYDO**) and/or Broad-leaved Cattail (**TYLA**)] rooting below the water's surface have  $\geq$  50% hbg. Other genera such as Sedges (**CAREX**), Spikerush (**ELEOC**) and invasive forbs such as Loosestrife (**LYTHR**) may be included in the mixture ... **Tule - Cattail-HT**

3B. Otherwise ... 4

4A. Agricultural lands have  $\geq 50\%$  hbg in row crops and are flooded in certain seasons ... **Flooded Row Crop Agriculture - A5**

4B. Otherwise ... 5

Note: areas below are not consistently or deliberately flooded

5A. Annual grasses such as Oats (**AVENA**), Bromes (**BROMU**), Foxtail Fescue (**VUMY**) and Kentucky Bluegrass (**POPR**) mixed with annual and/or perennial forbs such as Filaree (**ERODI**), California Chickory (**RACA**), species of Spineflower (**CHORI2**), etc. which generally have limited surface or subsurface moisture in midsummer having  $\geq 50\%$  hbg ... **Annual Grasses and Forbs - HG**

5B. Otherwise ... 6

6A. 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. Includes some of the following: both native and introduced Bluegrass species (**POA**), the natives Indian Ricegrass (**ACHY**), Pine Needlegrass (**ACPI2**), Thingrass (**AGPA8**), Great Basin Wild Rye (**LECI4**) and Squirreltail (**ELEL5**); the non-native Tall Wheatgrass (**ELEL6**), and Quackgrass (**ELRE4**) and native perennial forbs such as Glaucous Willowherb (**EPGL**) and Desert Biscuitroot (**LOFO**) ... **Perennial Grasses and Forbs - HM**

6B. Otherwise ... 7

7A. A mixture of alkaline-tolerant herbaceous species, including the following annual and perennial forbs: Western Miterwort (**NIOC2**); Alkali Weed (**CRTR5**); Poverty Weed (**IVAX**); invasive weeds such as Halogeton (**HAGL**) and Oakleaf Goosefoot (**CHGL3**); Torrey's Blazing Star (**METO2**); Salt Heliotrope (**HECU3**); Alkali Sacaton (**SPAI**) and salt-tolerant grasses such as Saltgrass (**DISP**) that have  $\geq 50\%$  hg ... **Alkaline Mixed Grasses and Forbs - HA**

7B. Otherwise ... 8

8A. Agricultural lands have  $\geq 50\%$  hbg in row crops and are not usually flooded ... **Pastures and Crop Agriculture - A6**

8B. Otherwise ... 9

9A. Agricultural lands have  $\geq 50\%$  hbg ... **Agriculture - AG**

9B. Otherwise ... 10

10A. Non-native cultivated grasses and herbaceous cover ... **Non-Native/Ornamental Grasses - IG**

10B. Otherwise ... **Unknown Grass - XG or XJ**

## VI. Key to Sparsely Vegetated and Desert Types

IA. If vascular vegetation is  $< 5\%$  of plot or area ... VII. Key to Non-Vegetated Types

1B. If vascular vegetation is  $\geq 5\%$  of plot or area ... go back to I. Key to Lifeforms using  $\geq 5\%$  absolute canopy cover values for each lifeform, keeping relative canopy cover values as given

## VII. Key to Non-Vegetated Types

nvc = non-vegetated cover

1A. Dry urbanized or developed lands have  $\geq 50\%$  nvc ... **Urban-related Bare Soil - IB**

1B. Not as above ... 2

2A. Urban or otherwise developed landscapes (highways, etc.) have  $\geq 50\%$  nvc ... **Urban or Developed - UB**

2B. Not as above ... 3

3A. Dry agricultural lands have  $\geq 50\%$  nvc ... **Tilled Earth - A3**

3B. Not as above ... 4

4A. Wet agricultural lands have  $\geq 50\%$  nvc ... **Agricultural Ponds or Surface Water - A7**

4B. Not as above ... 5

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

5B. Not as above ... 6

6A. Playas, dry alkaline lake beds and other alkaline flats occupy  $\geq 50\%$  nvc ... **Alkaline Flats - AK**

6B. Otherwise ... 7

7A. Naturally barren landscapes (cliffs, bedrock, etc.) occupy  $\geq 50\%$  nvc ... **Barren - BA**

7B. Otherwise ... **Unknown Non-Vegetated - XZ**