KEY TO ECOLOGICAL SITES
MLRA 34A – COOL CENTRAL DESERTIC BASINS AND PLATEAUS
ZONE 3 – 10-14" FOOTHILLS AND BASINS WEST (10-14" W)

1. Site in a lowland position that receives significant additional moisture from runoff of adjacent slopes or from intermittent/perennial streams or a water table *(HIGH Productivity Potential)*……....**Group I**
1. Upland site that does not receive additional moisture as above……..2
    2. Soil depth very shallow (<10"), shallow (10-20") OR moderately deep to deep (>20") reacting like shallow soils due to root restrictive layer or on south and west facing slopes *(LOW productivity potential)*……**Group II**
    2. Soil depth moderately deep to deep (>20") without root restricting layer that inhibits the productivity potential ……..….**Group III**

GROUP I – Sites that Receive Additional Moisture

1. Sites that are saline and/or alkaline, dominated by salt tolerant species (greasewood, inland saltgrass, alkali sacaton, alkali muhly)……2
    2. Water table within rooting depth of herbaceous species (20-40") during some or most of the growing season, dominated by grasses such as alkali sacaton, alkali muhly, alkali bluegrass, bearded wheatgrass (typically no shrubs present)…..……..……**Saline Subirrigated (SS)**
    2. Site not as above……..……3
        3. Site in a lowland position and water table usually >3 feet (within rooting depth of woody plants, but not within rooting depth of herbaceous plants), dominated by greasewood, inland saltgrass, basin wildrye (no big sage on this site)……..……..**Saline Lowland (SL)**
        3. Site may receive periodic overflow from adjacent slopes, may be in a lowland position but water is typically channeled into gullies so that plants are not receiving a lot of benefit from additional moisture, greasewood and Gardners saltbush common species, big sage may be present……...…**Saline Lowland, drained (SLdr)**
1. Sites that are not saline and/or alkaline……..……..……4
    4. Site poorly drained with water table above surface part of growing season, Nebraska sedge, water sedge, and willows common species……..……**Wetland (WL)**
    4. Site not as above……..5
        5. Water table within rooting depth of herbaceous species (typically above 20") during part of the growing season, tufted hairgrass, shrubby cinquefoil, some sedges, rushes, and willows may be present…..……..**Subirrigated (Sb)**
        5. Site not as above……..…6
            6. Site in a lowland position, adjacent to intermittent/perennial stream and water table usually >3 feet (within rooting depth of

woody plants, but not within rooting depth of herbaceous plants), cottonwoods or remnants thereof may be present, (gravel bars and pockets of bare gravel often present, rhizomatous wheatgrass, woods rose and other woody species common.....**Lowland (LL)**

6. Site not as above.....7

7. Site receives periodic overflow from adjacent slopes, but without a water table within rooting depth of woody plants, basin big sagebrush, silver sage, slender wheatgrass and/or canby Bluegrass common.....**Overflow (Ov)**

7. Site similar to above with heavy textured soils (finer portions of silty clay loams to sandy clay loams and clay loams), heavy presence of rhizomatous wheatgrass .....**Clayey Overflow (CyO)**

GROUP II – Upland Sites that are Very Shallow (<10") OR Shallow (10-20")

1. Soils very shallow (<10"), but may include areas of exposed bedrock and pockets of deep soil, often on steep (up to 55%) south and west facing slopes with VERY LOW productivity potential.....2

2. Bedrock igneous or volcanic, black sage may be present.....**Igneous (Ig)**

2. Bedrock not igneous or volcanic.....3

3. Bedrock is soft or hard clay shale bedrock that may be saline and/or alkaline in various degrees, Gardners saltbush common species, productivity very low.....**Shale (Sh)**

3. Site not as above, commonly on windswept ridges, fractured bedrock of various types, and Juniper occasionally found on at higher elevations, productivity very low (if productivity is high and coarse fragments are present, go to #7).....**Very Shallow (VS)**

1. Soils shallow (10-20"), but may include moderately deep to deep gravelly or cobbly soils, soils with a root restrictive layer, and/or south and west facing slopes that react like shallow soils, productivity potential is LOW.....4

4. Site with a highly calcareous subsoil OR underlain by soft calcareous materials 5

5. Moderately deep to deep soil (>20") with highly calcareous (violent effervescence) subsoil at 10 to 20", Black Sage common shrub species.....**Shallow Loamy, calcareous (SwLyca)**

5. Shallow soil (10-20") underlain by soft calcareous materials with many outcrops of sedimentary rock, Mountain Mahogany and Bluebunch Wheatgrass common .....**Rocky Hills (RH)**

4. Site without calcareous subsoil or bedrock, OR if lime horizon present, accompanied by high volume of coarse fragments.....6

6. Coarse fragments common on surface and throughout profile (>35% by volume in top 20").....7

7. Site occurs along terrace breaks, steep slopes, or stream terraces with coarse fragments up to 10" diameter covering 50-75% of surface and making up 40-50% volume in top 20", may have lime horizon below 12

inches, bluebunch wheatgrass and variety of woody plants may be present, productivity potential VERY LOW……..**Gravelly (Gr)**

7. Fractured sedimentary bedrock at 10-20” with gravel, cobble, stone, and angular fragments on the surface and throughout soil profile, inclusions of very shallow to deep pockets of soil, commonly on south and west facing slopes, juniper common woody species, (productivity potential higher than **Very Shallow (VS)** site) ……..**Shallow Breaks (SwB)**

6. Soils without high amount of coarse fragments……8

8. Medium to fine textured soils over igneous or volcanic bedrock, bitterbrush common ……..**Shallow Igneous (SwI)**

8. Soils not as above……9

9. Silty clays or heavier textured soils OR root restricting clay subsoil layer with coarse to fine textures above, soil may develop large cracks when dry, early sage dominant shrub.....**Shallow Clayey (SwCy)**

9. Soils not as above……..10

10. Fine sandy loams or coarser textured soils over sandstone or sandy shale, needleandthread and Indian ricegrass dominant grass species ……**Shallow Sandy (SwSy)**

10. Very fine sandy loams to clay loam textured soils over various bedrock types (commonly limestone, siltstone, or shale), low sage intermixed with big sage…….**Shallow Loamy (SwLy)**

GROUP III – Upland Sites that are Moderately Deep to Deep (>20”)

1. Sites that are saline and/or alkaline,.....2

2. Gardners saltbush, winterfat, bud sage common (if root restrictive layer present and productivity very low consider **Shale** site—Group II, 3)…….**Saline Upland (SU)**

2. Site may receive periodic overflow from adjacent slopes, may be in a lowland position but water is typically channeled into gullies so that plants are not receiving a lot of benefit from additional moisture, greasewood and Gardners saltbush common species, big sage may be present.……**Saline Lowland, drained (SLdr)**

1. Sites that are not saline and/or alkaline ……3

3. Sites with a high volume of coarse fragments in top 20” (>35% by volume) ……4

4. Site occurs along terrace breaks, steep slopes or along stream terraces with coarse fragments up to 10” diameter covering 50-75% of surface and making up 40-50% volume in top 20”, may have lime horizon below 12 inches, bluebunch wheatgrass and variety of woody plants may be present, productivity potential VERY LOW……**Gravelly (Gr)**

4. Site occurs in a variety of upland positions, boulders found in abundance on surface, at least 35% volume of coarse fragments in top 20", generally increasing with depth, bluebunch wheatgrass, bitterbrush, and big sage common, productivity high ……**Coarse Upland (CU)**

3. Sites without high volume of coarse fragments……..5
   5. Sites in a lowland position that may receive additional runoff, basin big sage, silver sage common……**Group I**
   5. Sites not as above……..6
      6. Soil textures are heavy, slight to severe soil cracking in dry conditions…….....……7
         7. Soil textures range from silty clay through finer silty and sandy clay loams, soil cracking common during dry summer months, though not severe, big sagebrush common, but sparse, with a lot of western wheatgrass……..……..**Clayey (Cy)**
         7. Heavy clay soils (silty clays or clays), low or early sage common……..8
            8. Silty clays or heavier textured soils OR root restricting clay subsoil layer with coarse to fine textures above, soil may develop large cracks when dry, early sage dominant shrub..…….....**Shallow Clayey (SwCy)**
            8. Heavy clay soils with severe soil cracking in dry conditions, very sticky when wet, (slick spot), low sage common ……..**Dense Clay (DC)**
      6. Soil textures not as above……..…9
         9. Soil textures are very coarse (loamy sand to sand), sometimes as dunes, dark or light colored, needleandthread and Indian ricegrass are dominant species, basin big sage may occur……..…**Sands (Sa)**
         9. Soil textures range from very fine sandy loam to clay loam……..……10
            10. Soils fine sandy loams to loamy sands, needleandthread and Indian ricegrass are dominant species……..……11
                11. Productivity potential is low ……..…**Shallow Sandy (SwSy)**
                11. Productivity potential is high …….. **Sandy (Sy)**
            10. Soils very fine sandy loams to clay loams, a good variety and even mix of grass species…….....…….12
                12. Productivity potential is low, low sage intermixed with big sage ……..……**Shallow Loamy (SwLy)**
                12. Productivity potential is high ……**Loamy (Ly)**

Note: Plant species should not be used as sole criteria for ecological site identification as they may not be present or may have been removed from the plant community. An ecological site is based on specific soil characteristics that result in its ability to produce distinctive kinds and amounts of vegetation and responds similarly to disturbance.