**KEY TO ECOLOGICAL SITES**
**MLRA 32X – Northern Intermountain Desertic Basins**
**ZONE 7 – 10-14" Foothills & Basins East (10-14 E)**

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 deep (>20") on south and west facing slopes which react like shallow soils *(LOW productivity potential)*…..……**Group II**
    2. Soil depth moderately deep to deep (>20")…….**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 (typically 20-40") during some or most of the growing season, dominated by grasses such as alkali sacaton, Nuttall's alkaligrass, alkali bluegrass, alkali cordgrass, basin wildrye (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 alkali sacaton, greasewood, inland saltgrass, basin wildrye (no big sage on this site)……...**Saline Lowland (SL)**
        3. Site receives periodic overflow from adjacent slopes, but it 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 sometimes 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 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, basin wildrye, shrubby cinquefoil, 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, 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 wheatgrasses…..……**Clayey Overflow (CyO)**

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

1. Soils very shallow (<10"), but include areas of exposed bedrock and pockets of deep soil, often on steep (up to 55%) south and west facing slopes with LOW productivity potential
    2. Bedrock is soft or hard clay shale bedrock that may be saline and/or alkaline in various degrees, Gardner's saltbush common species, productivity very low.....……..**Shale (Sh)**
    2. Site not as above, commonly on windswept ridges, fractured bedrock of various types, and Juniper occasionally found on at higher elevations, productivity very low, bluebunch wheatgrass (if productivity is high and coarse fragments are present, go to 7)……....**Very Shallow (VS)**
1. Soils shallow (10-20") OR deep, gravelly and/or cobbly soils on south and west facing slopes that react like shallow soils ……..……3
    3. Coarse fragments common on surface and throughout profile (>35% by volume).Site occurs along terrace breaks or steep slopes 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 a variety of woody plants may be present, productivity very low……**Gravelly (Gr)**
    3. Soils not as above……..……4
        4. Silty clays or heavier textured soils over clay shale bedrock, birdfoot sage, winterfat & Gardner's saltbush.....**Shallow Clayey (SwCy)**
        4. Soils not as above……5
            5. Fine sandy loams or coarser textured soils over sandstone or sandy shale, needleandthread, Indian ricegrass & bluebunch dominant grass species on site…..…**Shallow Sandy (SwSy)**
            5. Very fine sandy loams to clay loam textured soils over various bedrock types (commonly limestone, siltstone, or shale)…..……..**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 common (if root restrictive layer present and production very low consider **Shale** site—Group II, 2) **Saline Upland (SU)**

2. Site receives periodic overflow from adjacent slopes, but water 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 sometimes 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 or steep slopes 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 low..……**Gravelly (Gr)**
      4. Site occurs in a variety of upland positions, coarse fragments found in abundance on surface, at least 35% volume of coarse fragments in top 20", generally increasing with depth, bluebunch wheatgrass, bitterbrush, and a variety of other shrubs, production higher……**Coarse Upland (CU)**
   3. Sites <u>without</u> high volume of coarse fragments……..5
      5. Sites in a lowland position that 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 more common, but sparse, with a lot of western wheatgrass……..…….**Clayey (Cy)**
            7. Heavy clay soils (silty clays or clays), silty clays or heavier textured soils over clay shale bedrock, birdfoot sage, winterfat & Gardner's saltbush ……..……...**Shallow Clayey (SwCy)**
         6. Soil textures not as above……..…8
            8. Soils fine sandy loams to loamy sands, light or dark colored, Needleandthread and Indian Ricegrass are abundant species……..9
               9. Productivity is low ……..….**Shallow Sandy (SwSy)**
               9. Productivity is high…….…….. **Sandy (Sy)**
            8. Soils very fine sandy loams to clay loams, good variety and even mix of grass species…….....…….10
               10. Productivity is low, low or early sage intermixed with big sage ……..……..……**Shallow Loamy (SwLy)**
               10. Productivity 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.