Major Land Resource Area 034A
Cool Central Desertic Basins and Plateaus

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Ecological site keys

Green River and Great Divide Basins (current if updated sites have not been developed)

I. 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)

A. Sites that are saline and/or alkaline, dominated by salt tolerant species (greasewood, inland saltgrass, alkali sacaton, alkali muhly)

1 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, saltgrass, wiregrass (typically no shrubs present) ... R034AY142WY – Saline Subirrigated Green River and Great Divide Basins (SS)

2 Site not as above

i. 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) ... R034AY138WY – Saline Lowland Green River and Great Divide Basins (SL)

ii. 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 Gardner’s saltbush common species, grey molly, seepweed ... R034AY140WY – Saline Lowland Drained Green River and Great Divide Basins (SLDr)

B. Sites that are not saline and/or alkaline

1 Site poorly drained with water table above surface part of growing season, Nebraska sedge, tufted hairgrass, water sedge, and willows common species ... R034AY178WY – Wetland Green River and Great Divide Basins (WL)

2 Site not as above

i. Sites with a water table

a. Water table within rooting depth of herbaceous species (typically above 20”) during part of the growing season, tufted hairgrass, some sedges, rushes, and willows may be present ... R034AY174WY – Subirrigated Green River and Great Divide Basins (Sb)

b. 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, Cottonwoods, rhizomatous wheatgrass, and other woody species ... R034AY128WY – Lowland Green River and Great Divide Basins (LL)

ii. Sites without a water table within rooting depth of woody plants receives extra intermittent water from periodic overflow from adjacent slopes; common plants basin big sagebrush, rubber rabbitbrush, Basin Wildrye, and sandberg bluegrass ... R034AY230WY – Overflow Foothills and Basins West (Ov)

II. Upland site that does not receive additional moisture as above

A. 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)

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

i. Soils are very fine textured and have a high concentration of exchangeable sodium throughout the profile, birdfoot sage and sandberg bluegrass ... R034AY118WY – Impervious Clay Green River and Great Divide Basins (IC)

ii. Site not as above

a. Site found in uplands, slopes typically 5-25%, with outcrops of clay shale bedrock that may be saline and/or alkaline in various degrees, gardners saltbush , squirreltail, Indian ricegrass ... R034AY154WY – Shale Green River and Great Divide Basins (Sh)

b. Site not as above, upland with steep slopes (25-50%), commonly on windswept ridges, fractured bedrock of various types, soil depth <10" in depth; bluebunch wheatgrass, Indian ricegrass and variety of woody shrubs (if rock fragments are present, gravelly) ... R034AY176WY – Very Shallow Green River and Great Divide Basins (VS)

2 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

i. Soils are very fine textured and have a high concentration of exchangeable sodium throughout the profile, birdfoot sage and sandberg bluegrass ... R034AY118WY – Impervious Clay Green River and Great Divide Basins (IC)

ii. Site not as above

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

1) 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 calcic horizon below 12 inches, bluebunch wheatgrass and variety of woody plants may be present ... R034AY112WY – Gravelly Green River and Great Divide Basins (Gr)

2) Site with fractured sedimentary bedrock at less than 20" with gravel, cobble, stone, and angular fragments on the surface and throughout soil profile, inclusions of very shallow to deep pockets of soil, Utah Juniper ... R034AY156WY – Shallow Breaks Green River and Great Divide Basins (SwBr)

b. Sites without a lot of coarse fragments

1) Silty clays or heavier textured soils, soil may develop large cracks when dry, early sage dominant shrub ... R034AY158WY – Shallow Clayey Green River and Great Divide Basins (SwCy)

2) Soils not as above

a) Fine sandy loams or coarser textured soils over sandstone or sandy shale, Indian ricegrass and needleandthread dominant grass species on site ... R034AY166WY – Shallow Sandy Green River and Great Divide Basins (SwSy)

b) Soil <20" in depth to limestone, dolomite or calcareous sandstone; common plants are Black sagebrush, and bluebunch wheatgrass ... R034AY163WY – Shallow Loamy, Calcareous Green River and Great Divide Basins (SwLyCa)

c) Sandy loams to clay loam textured soils over various bedrock types usually shale or siltstone; common plants are Wyoming big sage, sandberg bluegrass, thickspike wheatgrass bluebunch wheatgrass ... R034AY162WY – Shallow Loamy Green River and Great Divide Basins (SwLy)

B. Soil depth moderately deep to deep (>20") without root restricting layer that inhibits the productivity potential

1 Sites that are saline and/or alkaline

i. Alluvial flats and alluvial drains that may receive periodic overflow from adjacent slopes, but water table is deeper than 6'; greasewood, Gardner's saltbush, squirreltail and Indian ricegrass ... R034AY140WY – Saline Lowland Drained Green River and Great Divide Basins (SLDr)

ii. Site not as above

a. Soils are very fine textured and have a high concentration of exchangeable sodium throughout the

profile, birdfoot sage common woody species ... R034AY118WY – Impervious Clay Green River and Great Divide Basins (IC)

b. Gardners saltbush (heavy clay soils and natric) and/or winterfat (calcic) and/ shadscale (coarser soils) (if root restrictive layer present and productivity very low consider Shale site) ... R034AY144WY – Saline Upland Green River and Great Divide Basins (SU)

2 Sites not saline and/or alkaline

i. 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 calcic horizon below 12 inches, bluebunch wheatgrass and variety of woody plants may be present ... R034AY112WY – Gravelly Green River and Great Divide Basins (Gr)

ii. Soils without high volume of coarse fragments

a. Soils textures are heavy and range from silty clay to heavy clay, slight to severe soil cracking in dry conditions

1) Soil textures range from silty clay through finer silty and sandy clay loams, soil cracking common during dry summer months, though not severe, soils can be lighter in texture when clay size carbonates are present - Wyoming big sagebrush, Gardner's saltbush and winterfat ... R034AY104WY – Clayey Green River and Great Divide Basins (Cy)

2) Heavy clay soils (silty clays or clays) at the surface or in a subsurface layer, low or early sage common

a) Silty clays or heavier textured soils; with root restricting clay subsoil layer with coarse to fine textures above within 20" from surface, soil may develop large cracks when dry, early sage, sandberg bluegrass and squirreltail ... R034AY158WY – Shallow Clayey Green River and Great Divide Basins (SwCy)

b) Heavy clay soils with severe soil cracking in dry conditions, very sticky when wet, (slick spot), low sage common ... R034AY110WY – Dense Clay Green River and Great Divide Basins (DC)

b. Soil textures not as above

1) Soil textures are very coarse (loamy sand to sand), sometimes as dunes (psamments), dark or light colored, spiny hopsage, Basin Big Sage, needleandthread and Indian ricegrass are dominant species ... R034AY146WY – Sands Green River and Great Divide Basins (Sa)

2) Soil textures range from very fine sandy loam to clay loam

a) Soils fine sandy loams to loamy sands, needleandthread and Indian ricegrass are abundant species

(1) Productivity potential is low and restrictive feature (calcic, rock layer or both) within 20" of surface of the soil or sandy-skeletal; and common plant species Indian ricegrass, Wyoming big sagebrush and needleandthread ... R034AY166WY – Shallow Sandy Green River and Great Divide Basins (SwSy)

(2) Productivity potential is high; common plant species are: Wyoming big sagebrush, spiny hopsage, needleandthread and Indian ricegrass are dominant species ... R034AY150WY – Sandy Green River and Great Divide Basins (Sy)

b) Soils sandy loams to clay loams, a good variety and even mix of grass species

(1) Heavy white calcic and may have a rock fragments within 20" of surface or be a skeletal soil; common plants are black sage, Indian ricegrass and sandberg bluegrass ... R034AY163WY – Shallow Loamy, Calcareous Green River and Great Divide Basins (SwLyCa)

(2) Not as above

(a) Productivity is low, acting shallow soil with restrictive features (rock layer, calcic or both with 20" of surface) or loamy-skeletal has Wyoming Big Sage intermixed with early/low sagebrush, Indian ricegrass, sandberg bluegrass, and mock goldenweed ... R034AY162WY – Shallow Loamy Green River and Great Divide Basins (SwLy)

(b) Productivity potential is high when have a sandy loam surface and fine-loamy soil; common plants; Wyoming big sage, Indian ricegrass, needleandthread, and Sandberg bluegrass. Common plants without sandy loam surface and lower productivity than sandy surface version– Wyoming big sagebrush, Indian ricegrass, sandberg bluegrass, and thickspike wheatgrass ... R034AY122WY – Loamy Green River and Great Divide Basins (Ly)