Major Land Resource Area 010X
Central Rocky and Blue Mountain Foothills

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Description

This MLRA is characterized by gently rolling to steep hills, plateaus, and low mountains at the foothills of the Blue Mountains in Oregon and the Central Rocky Mountains in Idaho. The geology of this area is highly varied and ranges from Holocene volcanics to Cretaceous sedimentary rocks. Mollisols are the dominant soil order and the soil climate is typified by mesic or frigid soil temperature regimes, and xeric or aridic soil moisture regimes. Elevation ranges from 1,300 to 6,600 feet (395 to 2,010 meters), increasing from west to east. The climate is characterized by dry summers and snow dominated winters with precipitation averaging 8 to 16 inches (205 to 405 millimeters) and increasing from west to east. These factors support plant communities with shrub-grass associations with considerable acreage of sagebrush grassland. Big sagebrush, bluebunch wheatgrass, and Idaho fescue are the dominant species. Stiff sagebrush, low sagebrush, and Sandberg bluegrass are often dominant on sites with shallow restrictive layers. Western juniper is one of the few common tree species and since European settlement has greatly expanded its extent in Oregon. Nearly half of the MLRA is federally owned and managed by the Bureau of Land Management. Most of the area is used for livestock grazing with areas accessible by irrigation often used for irrigated agriculture. For further information, see "Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin (U.S. Department of Agriculture Handbook 296, 2006)" available online at: https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_053624

Ecological site keys

MLRA10X

I. Sites occurring in east of the Snake River.

A. Occurring on the Upper Snake River Lava Plains and Hills

B. Occurring the Footslopes and Plains of the Big and Little Wood Rivers

II. Sites occurring west of the Snake River.

A. Sites occurring on fluvial landforms including stream channels, terraces, secondary terraces, meadows, bottoms, swales, and fans.

These sites occur across LRU boundaries.

B. Not as above

1 Sites occurring in the Madras Plains LRU. Characterized by deeper soils on nearly level plateaus. Most areas are row cropped. The dominant area for this unit is the Agency Plain. The dominant soils are the Agency and Madras soil series. Surface texture is sandy loam or loam. The soils lack the strong volcanic ash influence typical of the Pumice Lava Plains LRU. Temperature regime is mesic; moisture regime is aridic.

2 Not as above

i. Sites occurring in the Pumice Lava Plains LRU. Characterized by moderately deep and shallow soils formed in ash from Mt. Mazama over basalt. Most areas are native rangelands or used for irrigated pasture or hayland. Slopes are nearly level to undulating. The dominant soils are Deschutes and Deskamp. Texture is sandy loam and loamy sand throughout the profile. Temperature regime is mesic; moisture regime is aridic.

ii. Not as above

a. Sites occurring in the John Day Sediments LRU. This unit is characterized by rangeland soils on hills or mountains associated with the John Day/Clarno Formation and/or basalt. Temperature regime is dominantly mesic; moisture regime is aridic and xeric. (warm climate).

b. Not as above

1) Sites occurring in the John Day Mountain Foothills LRU. Characterized by rangeland soils on hills or mountains associated with basalt. Temperature regime is frigid; moisture regime is xeric. (cool moist climate) Soils are commonly

influenced by Mt. Mazama ash in the surface. Textures are dominantly loams and clays.

2) Not as above

a) Sites occurring in the Snake River Mountain Foothills LRU. Characterized by rangeland soils on hills or mountains associated with basalt. Temperature regime is frigid; moisture regime is xeric. (cool moist climate) Textures are dominantly loams and silt loams or silty clay loams.

b) Not as above

(1) Snake River Warm Plains LRU. Located between Oregon's Blue and Wallowa Mountains and the northwestern Snake River Plain. Characterized by soils on hills and mountains associated with basalt and exposed tuffaceous sediments. Plants are subject to wide temperature ranges, high evapotranspiration, and high early-season moisture stress. Temperature regime is mesic and the moisture regime is aridic. Mean annual precipitation is 9 to 12 inches. (warm dry)

Fluvial Landforms

I. Sites occurring on high elevation fens ... R010XY032OR – Meadow Fen 14+ PZ

II. Not as above

A. Sites occurring along the active channel of a perennial or intermittent stream to riparian sites

1 Soil temperature regime is mesic

i. Site occupies depositional floodplains and gravel bars ... R010XY010OR – Coyote Willow Riparian

ii. Site occupies primary terraces ... R010XY011OR – Cottonwood-Willow-Riparian

2 Soil temperature regimes is mesic near frigid or cooler

i. Depth to alluvial sediments is 60 inches or greater ... R010XY225OR – Aspen Riparian 12-18 PZ

ii. Not as above

a. Soil temperature regime is mesic near frigid to frigid near mesic ... R010XY012OR – Booth-Yellow Willow Riparian

b. Soil temperature regimes is frigid to cryic ... R010XY013OR – Booth-Geyer-Yellow Willow Riparian

B. Not as above

1 Site occurs on floodplains of perennial streams and rivers, near channels occupying primary terraces to meadows

i. Soil temperature regime is mesic to frigid near mesic

a. Water table is within 12 inches of the soil surface March through July ... R010XY003OR – Wet Meadow

b. Water table is deeper than 12 inches of the soil surface March through July

1) Soil has sodic properties ... R010XY008OR – Sodic Meadow

2) Soil does not have sodic properties ... R010XY004OR – Meadow

ii. Soil temperature regime is frigid to cryic

a. Water table is within 12 inches of the soil surface March through July ... R010XY001OR – Cold Wet Meadow

b. Water table is deeper than 12 inches of the soil surface March through July

1) **Shrub component common, dominated by silver sagebrush ...** R010XY002OR – Cold Meadow

2) **Not as above ...** R010XY033OR – Cold Moist Meadow

2 Not as above

i. Site occurs on floodplains of perennial streams and rivers, occupying secondary terraces to bottoms

a. Soil temperature regime is mesic to frigid near mesic

1) **Soil has sodic properties ...** R010XY007OR – Sodic Bottom

2) **Soil does not have sodic properties**

i) **Soils are sandy in the particle control section ...** R010XY009OR – Sandy Bottom

ii) **Soils are not sandy in the particle control section**

(a) **Soils are clayey in the particle control section ...** R010XY014OR – Clayey Bottom

(b) **Soils are loamy in the particle control section ...** R010XY005OR – Loamy Bottom

b. Soil temperature regime is frigid to cryic ... R010XY006OR – Mountain Loamy Bottom

ii. Not as above

a. Site occurs adjacent to and on floodplains or ephemeral streams, upper end of drainages to swales

1) **Soil temperature regime is mesic to frigid near mesic**

i) **Soil moisture regime is aridic ...** R010XY113OR – Swale 9-12 PZ

ii) **Soil moisture regime is xeric ...** R010XY116OR – Swale 12-16 PZ

2) **Soil temperature regime is frigid and mesic near frigid**

i) **Soil moisture regime is aridic ...** R010XY114OR – Cool Swale 9-12 PZ

ii) **Soil moisture regime is xeric**

(a) **Sites have higher available water holding capacities (8 to 10 inches). In the reference state, basin wildrye is the dominant grass species and has higher production than the Dry Mountain Swale site ...** R010XY117OR – Mountain Swale 12-16 PZ

(b) **Sites have lower plant available water (3 to 6 inches). In the reference state, Idaho fescue is the dominant grass and has lower production than the Mountain Swale sites ...** R010XY119OR – Dry Mountain Swale 12-16 PZ

b. Not as above

1) **Site occurs on mountain side slopes and plateaus in areas receiving additional subsurface moisture from ephemeral subsurface flows ...** R010XY230OR – Aspen Upland 12-18 PZ

2) **Not as above or sites occurring on alluvial fans**

i) **Precipitation 9 to 12 inches, aridic soil moisture regime**

(a) **Soil has sodic properties ...** R010XY126OR – Sodic Fan 9-12 PZ

(b) **Soil does not have sodic properties**

(1) **Typically occurring on lower fan toeslope or terrace positions, hydrologically connected to stream networks ...** R010XY120OR – Loamy Fan 9-12 PZ

(2) **Not as above**

(i) **Soils are clays with very fine particle size classes ...** R010XY121OR – Droughty Clayey Fan 9-12 PZ

(ii) Soils are typically loamy-skeletal (sometimes fine) particle size classes ... R010XY153OR – Droughty Fan 9-12 PZ

ii) Precipitation 12 to 16 inches, xeric soil moisture regime ... R010XY125OR – Gravelly Fan 12-16 PZ

Madras Plains LRU

I. Sites occurring on north aspect slopes

II. Not as above

A. Sites occurring on south aspect slopes ... R010XA007OR – Juniper Pumice South 9-12 PZ

B. Not as above or sites that are not influenced by aspect

1 Ecosites associated with buttes and often slopes greater than 40 percent ... R010XA014OR – Juniper Cinder Hills 10-12 PZ

2 Not as above

i) Sites associated with swales, fans, or terraces

a) Sites occur on slopes greater than 30 percent ... R010XA002OR – Juniper Shrubby Pumice Hills 8-10 PZ

b) Sites occur on slopes less than 15 percent ... R010XA003OR – Droughty 8-10 PZ

ii) Sites associated with plateaus and ridges

a) Particle size class is clayey to fine loamy but not skeletal or ashy ... R010XA001OR – Loamy 8-10 PZ

b) Particle size class is most often coarse to fine loamy or loamy skeletal but not clayey

1) Particle size class is often fine to fine loamy. Soils have a water holding potential of three to six inches leading to higher annual production and higher cover of western juniper compared to Shrubby Loam 8 to 12 precipitation zone sites ... R010XA018OR – Juniper Shrubby Loam 10-12 PZ

2) Particle size class is often coarse loamy to loamy skeletal. Soils have a water holding potential of two to four inches leading to lower annual production and lower western juniper cover than the Juniper Shrubby Loam 10 to 12 precipitation zone sites ... R010XA019OR – Shrubby Loam 8-12 PZ

Pumice Lava Plains LRU

I. Site is on a cinder butte. Soils are ash over scoriaceous cinders ... R010XA014OR – Juniper Cinder Hills 10-12 PZ

II. Not as above

A. Sites occurring on north aspect slopes

1 Soil temperature regime is mesic

i. Soils are less than 20 inches deep and contain more than 35 percent rock fragments ... R010XA025OR – Juniper Shallow North 10-12 PZ

ii. Soils are deeper than 20 inches

a. Soils are moderately deep between 20 and 40 inches ... R010XA024OR – Pumice North 8-10 PZ

b. Soils are deep between 40 and 60 inches ... R010XA083OR – Juniper Shrubby North 9-12 PZ

2 Soil temperature regime is frigid ... R010XA026OR – Juniper Pumice North 10-12 PZ

B. Not as above

1 Sites occurring on south aspect slopes. Soil temperature regime is mesic ... R010XA007OR – Juniper Pumice South 9-12 PZ

2 Not as above or sites that are not influenced by aspect

i. Soil temperature regime is mesic

a. Soils are very shallow or shallow

1 Soils are volcanic ash/pumice over exposed lava flows and lava blisters or small knolls dispersed across lava plains

i) Sites occur in eight to ten inch precipitation zones ... R010XA022OR – Juniper Lava Blisters 8-10 PZ

ii) Sites occur in 10 to 12 inch precipitation zones ... R010XA023OR – Juniper Shrubby Lava Blisters 10-12 PZ

2 Not as above ... R010XA018OR – Juniper Shrubby Loam 10-12 PZ

b. Soils are moderately deep to deep

1 Soils are loamy with less than thirty-five percent clay and greater than fifteen percent sand

i) Particle size class is often coarse loamy to loamy skeletal. Soils have a water holding potential of two to four inches leading to lower annual production and lower western juniper cover than the Juniper Shrubby Loam 10 to 12 precipitation zone sites ... R010XA019OR – Shrubby Loam 8-12 PZ

ii) Particle size class is often fine to fine loamy. Soils have a water holding potential of three to six inches leading to higher annual production and higher cover of western juniper compared to Shrubby Loam 8 to 12 precipitation zone sites ... R010XA018OR – Juniper Shrubby Loam 10-12 PZ

2 Soils are sandy with less than eighteen percent clay and soil textures including sand or loamy sand

i) Sites occur in areas that receive eight to ten inches of precipitation annually ... R010XA027OR – Juniper Pumice Flat 8-10 PZ

ii) Sites occur in areas that receive ten to twelve inches of precipitation annually ... R010XA009OR – Juniper Shrubby Pumice Flat 10-12 PZ

ii. Soil temperature regime is frigid

a. Sites with surface fragment cover over 80 percent usually consisting of small channers ... R010XA675OR – Juniper Hills 8-11 PZ

b. Not as above

1 Sites usually found on gentler slopes associated with plains ... R010XA659OR – Juniper Pumice Plains 8-11 PZ

2 Sites occur on steeper slopes associated with hills

i) Sites usually occur below 4600 feet in elevation ... R010XA021OR – Juniper Shallow Pumice Hills 10-12 PZ

ii) Sites usually occur above 4600 feet in elevation ... R010XA673OR – Juniper Pumice Hills 8-11 PZ

John Day Sediments LRU

I Soil has an abrupt textural change within 10 inches of the surface (well-developed claypan) ... R010XB024OR – JD Warm Ashy Claypan 9-12 PZ

II Not as above

A Soil is very shallow over highly fractured bedrock, interspersed with areas of rock outcrop

1 Soil moisture regime is aridic ... R010XB057OR – JD Mahogany Rockland 9-12 PZ

2 Soil moisture regime is xeric ... R010XB058OR – JD Mahogany Rockland 12-16 PZ

B Not as above

1 Sites occurring on north aspect slopes and soil temperature regime is mesic

i. Soil moisture regime is aridic

a. Soils are very shallow ... R010XB065OR – JD Droughty Clayey North 9-12 PZ

b. Soils are shallow ... R010XB035OR – JD Shallow North 9-12 PZ

c. Soils are moderately deep to deep ... R010XB064OR – JD North 9-12 PZ

ii. Soil moisture regime is xeric

a. Soils are shallow ... R010XB033OR – JD Shallow North 12-16 PZ

b. Soils are moderately deep to deep ... R010XB070OR – JD North 12-16 PZ

2 Not as above

i. Sites occurring on south aspect slopes and soil temperature regime is mesic

a. Soil moisture regime is aridic

1 Soils are shallow

i) Soils have greater than 35 percent clay content ... R010XB051OR – JD Shallow South 9-12 PZ

ii) Soils have less than 35 percent clay content ... R010XB052OR – JD Droughty Shallow South 9-12 PZ

2 Soils are moderately deep to deep

i) Soils are skeletal ... R010XB041OR – JD Clayey South 9-12 PZ

ii) Soils are not skeletal

a) **Surface texture is a very cobbly clay loam over clay subsoils ...** R010XB043OR – JD Droughty Clayey South 9-12 PZ

b) **Surface texture is a loam or gravelly loam over clay subsoils ...** R010XB044OR – JD Droughty South 9-12 PZ

b. Soil moisture regime is xeric

1 Soils are shallow ... R010XB047OR – JD Shallow South 12-16 PZ

2 Soils are moderately deep to deep

i) Surface soils have a rock fragment volume below 35 percent

a) Sites predominately occur above 3500 feet. Soils are loamy with surface shale volume between fifteen and thirty-five percent. Rock fragment volume typically increases with depth ... R010XB046OR – JD Shrubby Mountain South 12-16 PZ

b) Sites predominately occur below 4000 feet. Soil surface textures are cobbly clay loams ... R010XB045OR – JD Clayey South 12-16 PZ

ii) Surface soils have a total cobble volume between 60 and 90 percent ... R010XB048OR – JD Loamy South 12-16 PZ

ii. Not as above or sites that are not influenced by aspect

a. Soil temperature regime is mesic

1 Soil moisture regime is aridic

i) Soils are shallow ... R010XB023OR – JD Shallow 9-12 PZ

ii) Soils are moderately deep to deep

a) Soils contain greater than 35 percent clay

1) Soil surface textures are clays with high shrink-swell potential ... R010XB019OR – JD Gumbo 9-12 PZ

2) Soils have higher fragment amounts. Surface textures are stony clay loam to loam ... R010XB022OR – JD Clayey 9-12 PZ

b) Soils contain less than thirty-five percent clay

1) Surface soil textures are fine to coarse sandy loams. Subsoils are often gravelly to very gravelly ... R010XB025OR – JD Sandy Loam 9-12 PZ

2) Surface soil textures are loams sometimes with an ash component ... R010XB034OR – JD Loamy 9-12 PZ

2 Soil moisture regime is xeric

i) Soils are shallow ... R010XB031OR – JD Shallow 12-16 PZ

ii) Soils are moderately deep to deep

a) Surface textures are silt loams

1) Surface texture is most often a silt loam with no ashy textures. In the reference state, antelope bitterbrush is the dominant shrub and Idaho fescue is the dominant grass ... R010XB013OR – JD Shrubby Loam 12-16 PZ

2) Surface texture is most often a loam sometimes with an ash influence. In the reference state, basin big sagebrush is the dominant shrub and bluebunch wheatgrass is the dominant grass ...

R010XB030OR – JD Loamy 12-16 PZ

b) Surface textures are cobbly to stony loams. Subsurface soils are very cobbly to very stony ...

R010XB027OR – JD Clayey 12-16 PZ

b. Soil temperature regime is frigid. Soil moisture regime is xeric ... R010XB083OR – JD Shrubby Shallow 12-16 PZ

John Day Mountain Foothills LRU

I. Soil has an abrupt textural change within 10 inches of the surface (well-developed claypan)

A. Sites occurring on north aspect slopes ... R010XB081OR – Blue Mountain Foothills, Claypan North 12-16 PZ

B. Sites occurring on south aspect slopes ... R010XB096OR – Blue Mountain Foothills, Claypan South 12-16 PZ

C. Sites that are not influenced by aspect

1 Soil moisture regime is aridic ... R010XB029OR – Blue Mountain Foothills, Claypan 9-12 PZ

2 Soil moisture regime is xeric

i. The surface soil is often three to six inches thick over a non-fractured substratum. In the reference state, little sagebrush is the dominant shrub with very low cover of antelope bitterbrush and yellow rabbitbrush ... R010XB080OR – Blue Mountain Foothills, Claypan 12-16 PZ

ii. The surface soil is often five to ten inches thick over a fractured substratum. In the reference state, antelope bitterbrush is dominant with little sagebrush being subdominant ... R010XB082OR – JD Shrubby Claypan 12-16 PZ

II. Not as above

A. Soils are very shallow over highly fractured bedrock, interspersed with areas of rock outcrop ... R010XC059OR – SR Mahogany Rockland 12+ PZ

B. Not as above

1 Soils are very shallow over lithic bedrock

i. Sites occur below 4000 feet elevation. Surface fragment cover is typically around 60 percent and extremely gravelly subsoil ... R010XB032OR – JD Very Shallow 12-16 PZ

ii. Sites occur above 4000 feet elevation. Surface fragment cover is typically less than 30 percent ... R010XC039OR – SR Very Shallow 12-16 PZ

2 Not as above

i. Soils are very shallow over sediments ... R010XY015OR – Buckwheat Scabland 9-12 PZ

ii. Not as above

a. **Sites occurring on north aspect slopes**

1) **Soils are shallow ...** R010XC075OR – SR Mountain Shallow North 12-16 PZ

2) **Soils are moderately deep to deep**

i) **Surface soils have an ashy influence with textures being ashy loam to ashy loamy sand ...** R010XB085OR – JD Mountain North 12-16 PZ

ii) **Soil surface not ash influenced**

a) **Surface soils are often a shaly loam with very shaly loam to gravelly clay loam subsoils ...** R010XB071OR – JD Shrubby Mountain North 12-16 PZ

b) **Surface soil textures are silt loam to clay loam and subsoils are clay loams ...** R010XC066OR – SR Mountain North 12-16 PZ

b. **Not as above**

1) **Sites occurring on south aspect slopes**

i) **Soils are shallow ...** R010XC054OR – SR Mountain Shallow South 12-16 PZ

ii) **Soils are moderately deep to deep ...** R010XC047OR – SR Mountain South 12-16 PZ

2) **Not as above or sites that are not influenced by aspect**

i) **Soils are shallow**

a) **Soils are clayey. Surface textures are stony silt loams with clay loams and clays in subsoils ...** R010XC037OR – SR Mountain Shallow 12-16 PZ

b) **Surfaces are very gravelly to very stony and may be ashy. Soils are loamy formed predominately from tuffaceous materials ...** R010XB086OR – JD Shrubby Mountain Shallow 12-16 PZ

ii) **Soils are moderately deep to deep**

a) **Family particle size class is clayey**

(1) **Surface texture is a silt loam to silty clay loam ...** R010XC032OR – SR Mountain 12-16 PZ

(2) **Surface texture is gravelly loam to very stony loam ...** R010XB028OR – JD Shrubby Mountain 12-16 PZ

b) **Family particle size class is loamy**

(1) **Soils are moderately deep over fragmented tuffaceous bedrock. In the reference condition, curl-leaf mountain mahogany is the dominant shrub ...** R010XC082OR – SR Dry Pine 14-16 PZ

(2) **Soils are moderately deep over bedrock. In the reference state, mountain big sagebrush is the dominant shrub and western juniper may be present in low amounts ...** R010XC080OR – SR Mahogany Mountain Loam 14-18 PZ

Snake River Mountain Foothills LRU

I. Soil has an abrupt textural change within 10 inches of the surface (well-developed claypan) ... R010XB029OR – Blue Mountain Foothills, Claypan 9-12 PZ

II. Not as above

A. Soil is very shallow to moderately deep over highly fractured bedrock with surface soils of cobbly to stony loams. Areas interspersed with rock outcrops.

1 Sites occurring on moderate to very steep slopes of 12 to 60 percent on canyon walls and mountain side slopes. Western juniper is often the dominant tree species. ... R010XC059OR – SR Mahogany Rockland 12+ PZ

2 Sites occurring on nearly level to moderately steep slopes of 2 to 20 percent on tablelands and mountain plateaus. Ponderosa pine is often the dominant tree species. ... R010XC080OR – SR Mahogany Mountain Loam 14-18 PZ

B. Not as above

1 Soil is very shallow over lithic bedrock

i. Precipitation range is 12 to 16 inches

a. Soil temperature regime is mesic to frigid near mesic, precipitation range is 12 to 16 inches ... R010XC041OR – SR Very Shallow Rockland 12-16 PZ

b. Soil temperature regime is frigid to mesic near frigid.

1 Underlying bedrock is highly fractured ... R010XC039OR – SR Very Shallow 12-16 PZ

2 Not as above ... R010XC042OR – SR Juniper Tableland 12-16 PZ

ii. Soil temperature regime is frigid, precipitation range is 16 to 20 inches ... R010XC040OR – SR Very Shallow 16-20 PZ

2 Not as above

i. Sites occurring on north aspect slopes. Sites have a frigid soil temperature regime and a xeric soil moisture regime.

a. Precipitation range is 12 to 16 inches

1 Soil is shallow ... R010XC075OR – SR Mountain Shallow North 12-16 PZ

2 Soil is moderately deep to deep ... R010XC066OR – SR Mountain North 12-16 PZ

b. Precipitation amount is greater than 16 inches

1 Site occurs above 5000 feet

i) Surface soil is a silt loam over a silt loam to stony clay loam subsoil. Often occurs above 6000 feet elevation. Sites associated with higher annual production and trees such as western juniper and ponderosa pine ... R010XC069OR – SR Mountain North 16-20 PZ

ii) Surface layer a loam to very gravelly loam over a very gravelly loam to gravelly sandy loam subsoil. Often occurring from 5000 to 6000 feet in elevation and not normally associated with tree species ... R010XC053OR – SR High Mountain Loam 18+ PZ

2 Site occurs below 5000 feet ... R010XC067OR – SR Shrubby Mountain North 16-20 PZ

ii. Not as above

a. Sites occurring on south aspect slopes

1 Soil temperature regime is mesic and soil moisture regime is aridic ... R010XC044OR – SR South Schist 9-12 PZ

2 Soil moisture regime is xeric.

i) **Soil temperature regime is transitional between mesic and frigid.**

a) **Soils are shallow to moderately deep ...** R010XC055OR – SR Mountain Shallow South 16-20 PZ

b) **Soils are moderately deep to deep**

1) **Precipitation range is 12 to 16 inches ...** R010XC047OR – SR Mountain South 12-16 PZ

2) **Precipitation range is 16 to 20 inches ...** R010XC049OR – SR Shrubby Mountain South 16-20 PZ

ii) **Soil temperature regime is frigid.**

a) **Site predominantly occurs on south exposures of canyon walls and the backslopes of tablelands and mountain plateaus ...** R010XC051OR – SR High Mountain South 16-20 PZ

b) **Site occurs on tops and shoulders of ridges as well as north-facing mountain back slopes. Slopes may be up to 60 percent but more often range from 2 to 35 percent ...** R010XC053OR – SR High Mountain Loam 18+ PZ

b. Not as above

1 Soil temperature regime is mesic and soil moisture regime is aridic ... R010XC030OR – SR Cool 9-12 PZ

2 Soil moisture regime is xeric

i) **Soil temperature regime is transitional between mesic and frigid.**

a) **Precipitation range is 12 to 16 inches**

1) **Sites occur below 4000 feet ...** R010XC033OR – SR Cool 12-16 PZ

2) **Sites occur above 4000 feet**

(i) **Surface texture is a silt or clay loam with very low, if any, surface fragment cover ...** R010XC028OR – SR Shrubby Cool 12-16 PZ

(ii) **Surface texture is a very cobbly, very stony, or gravelly loam with approximately 10 to 20 percent surface gravel cover and 4 to 27 percent surface cobble cover ...** R010XB028OR – JD Shrubby Mountain 12-16 PZ

b) **Precipitation range is 16 to 20 inches ...** R010XC034OR – SR Shrubby Mountain Loam 16-20 PZ

ii) **Soil temperature regime is frigid**

a) **Precipitation range is 12 to 16 inches**

1) **Soils are shallow ...** R010XC037OR – SR Mountain Shallow 12-16 PZ

2) **Soils are moderately deep to deep ...** R010XC032OR – SR Mountain 12-16 PZ

b) **Precipitation range is greater than 16 inches**

1) **Site typically occurs between 4000 and 5700 feet on tablelands and mountain plateaus ...** R010XC082OR – SR Dry Pine 14-16 PZ

2) Site typically occurs between 6000 and 7500 feet on mountain ridges and plateaus ...

R010XC070OR – SR Mountain 16-20 PZ

Snake River Warm Plains LRU

I. Soils are very shallow over highly fractured bedrock. Ecosite identified but not developed

II. Not as above

A. Soils are very shallow over lithic bedrock ... R010XC038OR – SR Very Shallow 9-12 PZ

B. Not as above

1 Soils are very shallow over paralithic contact ... R010XC057OR – SR Shallow Escarpment 9-12 PZ

2 Not as above

i. Sites occurring on north aspect slopes

a. Soil temperature regime is mesic. Soil moisture regime is aridic

1) Elevation typically between 3200 and 4500 feet with less than 100 frost free days. Soil temperature regime is mesic to near frigid ... R010XC065OR – SR Cool North 9-12 PZ

2) Not as above

i) Site predominately found on mid elevation terraces on droughty sites. Soil clay content between 18 and 35 percent ... R010XC063OR – SR Droughty North 9-12 PZ

ii) Soil clay content above 35 percent ... R010XC064OR – SR North 9-12 PZ

b. Soil temperature regime is transitional between cool mesic to frigid. Soil moisture regime is xeric ...

R010XC068OR – SR Cool Mountain North 12-16 PZ

ii. Not as above

a. Sites occurring on south aspect slopes, soil temperature regime is mesic and soil moisture regime is aridic

1) Soils range from shallow to deep, occur on unstable landscape positions and have little structural development ...

R010XC056OR – SR Terrace Escarpment 9-12 PZ

2) Soils are shallow

i) Soils are a stony loam to gravelly clay loam about six inches thick ... BX010X00C050 – Shallow South 9-12 PZ Snake River Warm Plains

ii) Soils are generally shallow with areas of rock outcrop. The surface layer is a channery loam about three inches thick with a very channery loam subsoil ... R010XC052OR – SR Shallow South Schist 9-12 PZ

3) Soils are moderately deep to deep ... R010XC043OR – SR South 9-12 PZ

b. Not as above or sites that are not influenced by aspect

1) Soil temperature regime is mesic. Soil moisture regime is aridic

i) Soils are shallow

(a) Sites occur on gentle slopes of 2 to 12 percent on terraces, tablelands, and rolling uplands

(1) Typically occurs between 2000 to 3500 feet in elevation ... R010XC035OR – SR Shallow 9-12 PZ

(2) Typically occurs between 3500 to 4200 feet in elevation ... R010XC036OR – SR Shallow Cool 9-12 PZ

(b) Sites occur on steep slopes of 2 to 40 percent on hillsides, escarpments, and eroded hills ...

R010XC057OR – SR Shallow Escarpment 9-12 PZ

ii) Soils are moderately deep to deep

(a) Soils are clayey. Typically, both the surface and subsoil are clays with high shrink well potentials. Soil churning is prevalent. ... R010XC018OR – SR Adobeland 9-12 PZ

(b) Soils are not as described above

(1) Soil clay above 35 percent

(i) Soil temperature regime is mesic to near frigid. Typical elevation between 2700 and 4400 feet. Site averages less than 100 frost free days. Plant communities are typically dominated by Wyoming big sagebrush and Idaho fescue. ... R010XC030OR – SR Cool 9-12 PZ

(ii) Soil temperature regime is mesic. Elevations range from 2000 to 3500 feet. Site averages approximately 140 frost free days per year. Plant communities are typically dominated by Wyoming big sagebrush and bluebunch wheatgrass ... R010XC021OR – SR Clayey 9-12 PZ

(2) Soil clay below 35 percent

(i) Soil clay above 18 percent

(a) Soils are made up of greater than 40 percent silt, often contain a cambic horizon, and coarse loamy particle size class. In the reference state, wild crab apple is present ...

R010XC020OR – SR Loamy 9-12 PZ

(b) Soils are made up of less than 40 percent silt, often contain an argillic horizon, and fine to fine loamy particle size class. In the reference state, wild crab apple is not present ...

BX010X00C022 – Silty 9-12 PZ Snake River Warm Plains

(ii) Soil clay below 18 percent ... R010XC025OR – SR Sandy 9-12 PZ

2) Soil temperature regime is transitional between mesic and frigid. Soil moisture regime is xeric ...

R010XC033OR – SR Cool 12-16 PZ

Areas east of the Snake River, on the Footslopes and Plains of the Big and Little Wood River

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I. Site Occurs on Uplands

A. Slopes greater than 30 percent on northerly aspects

1 Site occurs in greater than 20 inch precipitation zones, in areas of moisture accumulating topography ... R010XA016ID – Quaking Aspen 20+ PZ POTR5

2 Site is in 12 to 16 inch precipitation zones with elevation below 7000 feet

i. Soils are volcanic cinders

a. **Coarse cinder soils, little soil development, cryic soil temperature regime ...** R010XA043ID – Cinder North 12-16 PZ PIFL2/PUTR2

b. **Somewhat finer cinder soils, greater soil development, frigid soil temperature regime ...** R010XA047ID – Cindery North 12-16 PZ ARTRV-PUTR2/FEID-PSSPS

ii. **Soils are not volcanic cinders**

a. **Soils are extremely bouldery loams. Large boulders are common on the surface. ...** R010XA037ID – Shrubby Stony North 12-16 PZ ARTRV/FEID

b. **Soils are moderately deep to deep stony loams. ...** R010XA036ID – North Slope Stony 12-16 PZ ARTRX/PSSPS

3 **Site occurs in 16 to 22 inch precipitation zones**

i. **Soils are deep and loamy, site occurs at an elevation between 5000 to 8800 feet ...** R010XA008ID – North Slope Loamy 16-22 PZ

ii. **Soils are generally shallow to fractured bedrock or clay. Roots penetrate below 20 inches. ...** R010XA010ID – North Slope Fractured 16-22 PZ

iii. **Soils are very shallow to bedrock or clay ...** R010XA011ID – Clayey North 16-22 PZ

B. Slopes greater than 30 percent on southerly aspects

1 **Occurs in 16 to 22 inch precipitation zone**

i. **Slopes greater than 45 percent ...** R010XA014ID – Steep South Slope 16-22 PZ

ii. **Slopes less than 45 percent ...** R010XA015ID – South Slope Loamy 16-22 PZ

2 **Occurs in less than 16 inch precipitation zones**

i. **Soils are volcanic cinders**

a. **Coarse cinder soils, little soil development... R010XA045ID – Cinder South 12-16 PUTR2/HECO26 (Draft concept)**

b. **Somewhat finer cinder soils, greater soil development... R010XA048ID – Cindery South 12-16 PUTR2-ARTRV/PSSPS (Draft concept)**

ii. **Soils not volcanic cinders**

a. **Site occurs in association with rock outcrops and talus slopes ...** R010XA030ID – South Slope Channery 11-13 PZ ARTRX/PSSPS

b. **Not as above**

1) **Soils greater than 20 inches to bedrock**

a) **Coarse fragments greater than 35 percent throughout the soil profile ...** R010XA009ID – South Slope Gravelly 12-16 PZ

b) **Not as above ...** R010XA025ID – South Slope Loamy 11-13 PZ ARTRW8/PSSPS

2) **Soils less than 20 inches to fractured bedrock**

a) **Site occurs on exposed ridgetops... R010XA024ID – STONY WINDSWEPT RIDGE 8-16 (Draft concept)**

b) **Not as above ...** R010XA021ID – South Slope Fractured 12-16 PZ

3 Site occurs in greater than 20 inch precipitation zones, in areas of moisture accumulating topography ... R010XA016ID – Quaking Aspen 20+ PZ POTR5

C. Slopes generally less than 30 percent, occurring on all aspects

1 Site associated with recent lava flows

i. Soils 10 to 20 inches deep over fractured basalt ... R010XA020ID – Mixed Shrub 12-16 PZ

ii. Soils less than 10 inches to basalt or lava bedrock ... R010XA050ID – Very Shallow Loam 12-16 PZ ARAR8/POSE

iii. Soils greater than 20 inches deep

a. Site nearly devoid of vegetation, coarse cinder soils, little soil development ... R010XA046ID – Cinder Garden 12-16 PZ EROVD-LERE7

b. Somewhat finer cinder soils, greater soil development, cryic soil temperature regime ... R010XA044ID – Cinder 12-16 PZ PIFL2/ARTRV

c. Soils with greater soil development than on Cinder 12 to 16. Increased fine soil particles within the profile...

R010XA049ID – Gravelly Loam 12-16 ARTRV/PUTR2/PSSPS (Draft concept)

2 Not as above

i. Soils are 20 inches or less

a. Site occurs on exposed ridgetops... R010XA024ID – STONY WINDSWEPT RIDGE 8-16 (Draft concept)

b. Not as above

1) Surface texture is generally loam to silt loam but may be finer ... R010XA007ID – Shallow Stony Loam 8-16 PZ

2) Surface texture is generally clay loam to silty clay but may be coarser ... R010XA038ID – Stony Clayey 8-16 PZ ARAR8/PSSPS

ii. Soils are greater than 20 inches deep

a. Soils are sandy ... R010XA022ID – Sandy Loam 12-16 PZ

b. Soils are clayey to loamy

1) Site has large boulders on or near surface

a) Site is below 5000 feet elevation ... R010XA032ID – Bouldery 11-13 PZ ARTRX/PSSPS

b) Site is above 5000 feet elevation ... R010XA031ID – Bouldery Loam 12-16 PZ ARTRV/FEID

2) Not as above

a) Soils are 20 to 40 inches to a duripan

(1) Sites occur in 12 to 16 inch precipitation zones, root restricting clayey subsurface at 14 to 18 inches ... R010XA001ID – Clayey 12-16 PZ ARARL/FEID

(2) Sites occur in 10 to 12 inch precipitation zones ... R010XA034ID – Claypan 10-12 PZ ARTR4/PSSPS-ACTH7

b) Not as above

(1) Site occurs in 11 to 13 inch precipitation zones

(a) Sites occur on slopes of 1 to 15 percent at elevations 4250 to 5000 feet. Soils are moderately deep. Textures are loams and silt loams. ... R010XA033ID – Loamy 11-13 PZ ARTRX/PSSPS

(b) Sites occur on slopes of 5 to 25 percent and elevations from 4000 to 5500 feet. Soils are moderately deep. Textures are loams and silt loams. ... R010XA026ID – Loamy 11-13 PZ ARTRW8/PSSPS

(2) Site occurs in 12 to 16 inch precipitation zones

(a) Sites occur on slopes from 1 to 30 percent and elevations from 4500 to 6500 feet. Soils are moderately deep to deep. Textures are loams, silt loams and gravelly silt loams ... R010XA004ID – Loamy 12-16 PZ ARTRV/FEID-PSSPS

(b) Sites occur on slopes from 1 to 20 percent and elevations from 4000 to 5500 feet. Soils are moderately deep to deep. Surface soils are silt loams. Subsoils are silty clay loam to clay loam. ... R010XA023ID – Loamy 12-16 PZ ARTR4/FEID

(3) Site occurs in greater than 20 inch precipitation zone, in areas of moisture accumulating topography ... R010XA016ID – Quaking Aspen 20+ PZ POTR5

II. Site occurs on bottomlands with slopes less than 8 percent

A. Water table usually not present. ... R010XA042ID – Loamy Bottom 12-16 PZ LECI4

B. Water table present for most of the growing season.

1 Water standing at or above the surface into late summer... R010XA040ID MARSH TYLA-SCAC3 (Draft concept)

2 Water at or near the surface at beginning of growing season and down to 10 to 20 inches at the end of the growing season. ... R010XA039ID – Wet Meadow Carex/Juncus

3 Water at or near the surface at beginning of growing season and down to 20 to 40 inches at the end of the growing season ... R010XA027ID – Meadow DECA18-CANE2

4 Water at or near the surface at beginning of the growing season and greater than 40 inches at the end of the growing season. ... R010XA028ID – Dry Meadow 8-15 PZ PONE3-PHAL2

Areas east of the Snake River, on the Upper Snake River Lava Plains and Hills

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I. Site occurs on uplands.

A. Slopes greater than 30 percent on northerly aspects

1 Soils derived from granite

i. Site occurs in 12 to 16 inch precipitation zones at 3000 to 4500 feet elevation ... R010XY014ID – North Slope Granitic 12-16 PZ ARTRX/FEID

ii. Site occurs in 16 to 22 inch precipitation zones at 4000 to 5500 feet elevation ... R010XY013ID – North Slope Granitic 16-22 PZ ARTRV/FEID

2 Soils not derived from granite

i. Site occurs in 12 to 16 inch precipitation zones at 2100 to 4000 feet elevation. Soils are moderately deep to deep loams and silt loams ... R010XY001ID – North Slope Loamy 12-16 PZ FEID-PSSPS

ii. Site occurs in 16 to 22 inch precipitation zones at 3000 to 5500 feet elevation. Soils are deep silt loams ... R010XY005ID – North Slope Loamy 16-22 PZ ARTRV/FEID

iii. Site occurs in 16 to 20 inch precipitation zones at 2700 to 5800 feet elevation. Soils are excessively drained coarse sandy loams to fine gravelly sandy loams over 20 inches deep ... R010XY027ID – North Slope Brush 16-20 PZ PREM/ELGLG

B. Slopes greater than 30 percent on southerly aspects

1 Soils are not stony

i. Soils derived from granite

a. Site occurs in 12 to 16 inch precipitation zones at 3000 to 5000 feet elevation. Soils are moderately deep and coarse textured ... R010XY008ID – South Slope Granitic 12-16 PZ PUTR2/PSSPS

b. Site occurs in 16 to 20 inch precipitation zones at 3000 to 6000 feet elevation. Soils are moderately deep to deep coarse sandy loams ... R010XY028ID – South Slope Granitic 16-20 PZ ARTRX/PSSPS

ii. Soils not derived from granite

a. Site occurs in 12 to 16 inch precipitation zones at 3000 to 4800 feet elevation. Soils are loamy derived from acid igneous alluvial or lacustrine deposits and are moderately deep to deep ... R010XY019ID – South Slope Loamy 12-16 PZ ARTRX/PSSPS

b. Site occurs in 16 to 22 inch precipitation zones at 3000 to 5000 feet elevation. Soils are deep silt loams to silty clay loams derived from colluvium, tuff, rhyolite, basalt, and siltstone ... R010XY004ID – South Slope Loamy 16-22 PZ ARTRX/PSSPS

c. Site occurs in 12 to 16 inch precipitation zone at 2600 to 3900 feet elevation. Soils are deep, sand to sandy loams formed from lacustrine deposits ... R010XY031ID – South Slope Sandy 12-16 PZ

2 Soils are stony

i. Soil depth is moderately deep to deep

a. Site occurs in 12 to 16 inch precipitation zones at 2000 to 3500 feet. Textures are stony loams ... R010XY011ID – South Slope Stony 12-16 PZ ARTRT/PSSPS

b. Site occurs in 16 - 22 inch precipitation zones at 3500 to 4500 feet. Textures are stony to extremely stony loams ... R010XY021ID – Stony Loam 16-22 PZ ARTRT/PSSPS

ii. Soil depth is shallow

a. Site occurs in 12 to 16 inch precipitation zones at 3000 to 4500 feet. Textures are stony loams to clay loams ... R010XY016ID – Shallow South Stony 12-16 PZ ARTRX/PSSPS

b. Site occurs in 14 to 18 inch precipitation zones at 2400 to 5000 feet. Textures are very stony loams to very gravelly clay loams ... R010XY018ID – Shallow South Stony 14-18 PZ PSSPS-POSE

c. Site occurs in 12 to 20 inch precipitation zones at 4000 to 7500 feet. Textures are cobbly and stony clay loams. Soil depths range from 10 to 40 inches ... R010XY017ID – South Slope Clayey 12-20 PZ ARAR8/PSSPS

C. Slopes less than 30 percent on all aspects (non-aspect)

1 Soils are not stony

i. **Site occurs in 12 to 16 inch precipitation zones at 2500 to 4500 feet. Textures are loamy ...** R010XY007ID – Loamy 12-16 PZ

ii. **Site occurs in 12 to 16 inch precipitation zones at 2500 to 3200 feet. Textures are loamy fine sand to very fine sandy loam ...** R010XY032ID – Loamy 12-16 PZ

iii. **Site occurs in 16 to 20 inch precipitation zones at 3000 to 4000 feet elevation. Textures are sandy loams to clay loams ...** R010XY003ID – Loamy 16-22 PZ PUTR2/FEID

iv. **Site occurs in 16 to 22 inch precipitation zones at 3000 to 5000 feet. Textures are coarse sandy loams derived from granite ...** R010XY022ID – Granitic 16-22 PZ PSSPS-FEID

v. **Site occurs in 8 to 16 inch precipitation zones at 2000 to 3000 feet. Textures are clay and deep vertisols ...** R010XY006ID – Churning Clay 8-16 PZ ARTRX/PSSPS

2 Soils are stony

i. **Soil depth is moderately deep to deep**

a. **Site occurs in 12 to 16 inch precipitation zones at 2500 to 4500 feet. Textures are stony loams ...** R010XY009ID – Stony Loam 12-16 PZ ARTRT/PSSPS

b. **Site occurs in 16 to 22 inch precipitation zones at 3500 to 4500 feet. Textures are deep, stony to extremely stony, loams ...** R010XY021ID – Stony Loam 16-22 PZ ARTRT/PSSPS

ii. **Soil depth is very shallow to shallow**

a. **Site occurs in 12 to 20 inch precipitation zones at 2500 to 4000 feet. Soils are very shallow, stony to extremely stony loams to clay loams ...** R010XY002ID – Very Shallow 12-20 PZ ARRI2/POSE

b. **Site occurs in 12 to 20 inch precipitation zones at 2500 to 4500 feet. Soils are shallow, very stony loams to very gravelly clay loams ...** R010XY025ID – Shallow Stony Loam 12-20 PZ ARTRX/PSSPS

II. Site occurs on bottomlands with slopes less than five percent.

A. **Water standing at or above the surface into late summer ...** R010XY030ID – Marsh TYLA-SCAC3

B. **Water at or near the surface at beginning of growing season and down to 10 to 20 inches at the end of the growing season ...** R010XY029ID – Wet Meadow Carex-Juncus

C. **Water at or near the surface at beginning of growing season and down to 20 to 40 inches at the end of the growing season ...** R010XY023ID – Meadow DECA18-CANE2

D. **Water at or near the surface at beginning of the growing season and greater than forty inches at the end of the growing season ...** R010XY024ID – Dry Meadow PONE3-PHAL2