# Ecological site R010XY003ID
# Loamy 16-22 PZ PUTR2/FEID

Last updated: 9/23/2020
Accessed: 05/13/2025

## General information

**Provisional**. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

## Associated sites

| | |
|---|---|
| R010XY004ID | **South Slope Loamy 16-22 PZ ARTRX/PSSPS** |
| R010XY005ID | **North Slope Loamy 16-22 PZ ARTRV/FEID** |
| R010XY017ID | **South Slope Clayey 12-20 PZ ARAR8/PSSPS** |
| R010XY021ID | **Stony Loam 16-22 PZ ARTRT/PSSPS** |

## Similar sites

| | |
|---|---|
| R010XY007ID | **Loamy 12-16 PZ** |

**Table 1. Dominant plant species**

| | |
|---|---|
| Tree | Not specified |
| Shrub | Not specified |
| Herbaceous | Not specified |

## Physiographic features

This site occurs on benches, ridgetops and slopes that range from 4 to 30 percent. Elevation ranges from 3000-4000 feet (914-1219 m).

**Table 2. Representative physiographic features**

| | |
|---|---|
| Landforms | (1) Fan remnant<br>(2) Hill<br>(3) Mountain slope |
| Flooding frequency | None |
| Ponding frequency | None |
| Elevation | 914–1,219 m |
| Slope | 0–30% |
| Water table depth | 152 cm |
| Aspect | Aspect is not a significant factor |

## Climatic features

The elevation of MLRA 10 ranges from 1791 feet to 9236 feet, with a mean of 4602 feet. Overall, elevation increases from west to east. However, average annual precipitation decreases from west to east, ranging from

16.59 inches to 22.17 inches, with a mean of 19.56 inches, based on 7 long term climate stations throughout the MLRA. In general, precipitation peaks in December and January, with a steady decline to a low in July and August, then a steep increase during the autumn months. Most of the winter precipitation falls as snow, and maximum annual snowfalls of up to 82 inches have been recorded.
There is considerable variation in temperature throughout the year. Temperatures as low as -52° Fahrenheit and as high as 117° Fahrenheit are on record. Some areas have recorded the occurrence of more than 50 days with temperatures above 90° Fahrenheit. The average maximum annual temperature is 63 degrees F, while the average minimum temperature is 36.2 degrees F.The frost-free period can range from 128 to 152 days, while the freeze-free period can be from 164 to 189 days.
Both the average morning and average afternoon relative humidity values are lowest in July and August, and are below the national average. The number of clear, sunny days peaks during this same period, and is higher then the national average. During the Spring and Summer months high-intensity convective thunderstorms are not unusual.

**Table 3. Representative climatic features**

| | |
|---|---|
| Frost-free period (average) | 152 days |
| Freeze-free period (average) | 189 days |
| Precipitation total (average) | 559 mm |

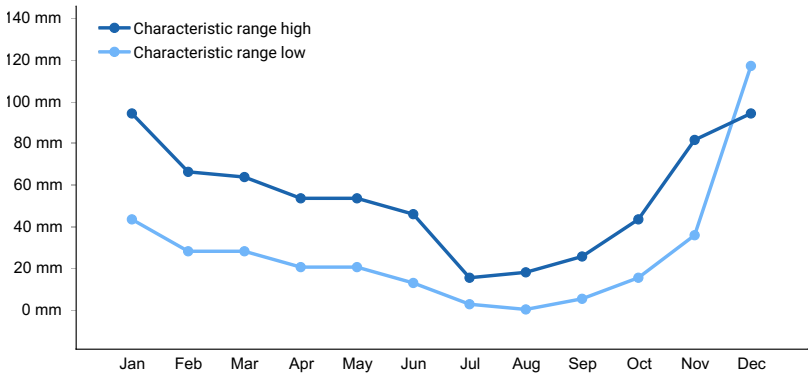



**Figure 1. Monthly precipitation range**

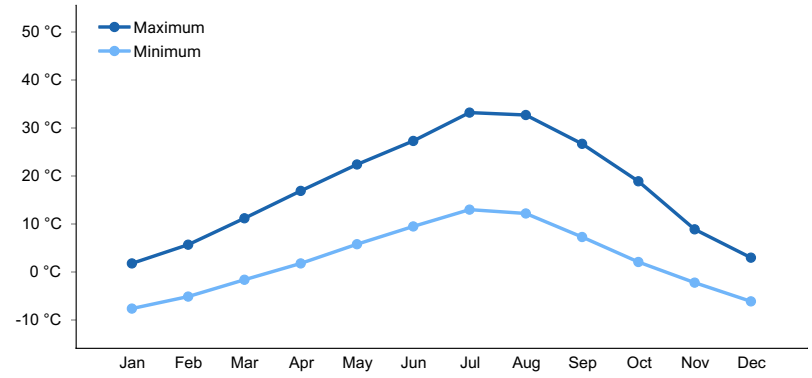



**Figure 2. Monthly average minimum and maximum temperature**

## Influencing water features

This site is not influenced by adjacent wetlands, streams or run on.

## Soil features

The soils supporting this site are shallow to very deep formed from fine grained igneous materials such as tuff, loess, and calcareous sediments. The soils are well drained, with slow to moderate permeability above bedrock. A duripan often occurs in the profile. Runoff is medium to very high. The erosion hazard is moderate to very severe by water. Some stones and gravels may occur throughout the profile but not in sufficient quantities to affect production, composition or management opportunities. The available water capacity is low to moderate. The surface texture is

loam with 30 percent stones on the surface at times. These soils are characterized by a xeric soil moisture regime. Soil temperature regime is mesic, except Ola is frigid.

Soil Series Correlated to this Ecological Site

Appledelia
Bakeoven
Brownlee
Jacknife
Mehlhorm
Meland
Midvale
Odermont
Ola

**Table 4. Representative soil features**

| | |
|---|---|
| Surface texture | (1) Stony loam<br>(2) Very stony clay loam<br>(3) Extremely stony sandy loam |
| Drainage class | Well drained |
| Permeability class | Slow to moderate |
| Soil depth | 51–152 cm |
| Surface fragment cover <=3" | 2–23% |
| Surface fragment cover >3" | 0–33% |
| Available water capacity (0-101.6cm) | 7.62–19.56 cm |
| Soil reaction (1:1 water) (0-101.6cm) | 6.1–7.8 |
| Subsurface fragment volume <=3" (Depth not specified) | 0–35% |
| Subsurface fragment volume >3" (Depth not specified) | 0–40% |

## Ecological dynamics

The dominant visual aspect of this site is basin big sagebrush and bunchgrass. Composition by weight is approximately 50-60 percent grasses, 15-25 percent forbs and 15-25 percent shrubs.

In the last few thousand years, this site has evolved in a semi-arid climate characterized by dry summers and cold, wet winters. Herbivory has historically occurred on this site at low levels of utilization. Herbivores include mule deer, Rocky Mountain elk, pronghorn antelope and lagomorphs.

Fire has historically occurred on the site at intervals of 20-50 years.

The Reference State (State 1), moves through many phases depending on the natural and man-made forces that impact the community over time. State 1, described later, indicates some of these phases. The Reference Plant Community Phase is Phase A. This plant community is dominated by Idaho fescue and bluebunch wheatgrass in the understory and basin big sagebrush in the overstory. Antelope bitterbrush is usually present. Subdominant species include prairie junegrass, Nevada bluegrass, arrowleaf balsamroot and penstemon. The plant species composition of Phase A is listed later under “Reference Plant Community Phase Plant Species Composition”.

Total annual production is 1400 pounds per acre (1555 kilograms per hectare) in a normal year. Production in a favorable year is 2000 pounds per acre (2222 kilograms per hectare). Production in an unfavorable year is 800

pounds per acre (888 kilograms per hectare. Structurally, cool season deep rooted perennial bunchgrasses are very dominant, followed by perennial forbs and tall shrubs being co-dominant while shallow rooted bunchgrasses are subdominant.

This site is well suited for big game in the late spring, summer and fall. It is also well suited for livestock and recreation use in the late spring, summer and fall.

Due to the relatively high rainfall and elevation on this site, it is fairly resistant to disturbances that can potentially degrade the site.

Due to the gentle topography, infiltration is normally high and runoff low. Runoff, when it does occur is non-erosive except during high intensity convection storms. Snow accumulates on the site due to high elevation and presence of tall shrubs.

Impacts on the Plant Community.

Influence of fire:

In the absence of normal fire frequency, basin big sagebrush and antelope bitterbrush increases. If the fire frequency is significantly less than historic levels (20-50 years) antelope bitterbrush becomes the dominant shrub. Grasses and forbs decrease as shrubs increase.

When fires become more frequent than historic levels (20-50 years), basin big sagebrush and bitterbrush are reduced significantly. With continued short fire frequency, big sagebrush and antelope bitterbrush can be completely eliminated along with many of the desirable understory species such as bluebunch wheatgrass and Idaho fescue. These species may be replaced by cheatgrass, medusahead, bulbous bluegrass along with a variety of annual and perennial forbs including noxious and invasive plants. These fine fuels will increase the fire frequency. Root sprouting shrubs such as rabbitbrush and gray horsebrush may increase.

Influence of improper grazing management:

Season-long grazing and/or excessive utilization can be very detrimental to this site. This type of management leads to reducing vigor of the bunchgrasses and possibly bitterbrush. With reduced vigor, recruitment of these species declines. As these species decline, the plant community becomes susceptible to an increase in basin big sagebrush and noxious and invasive species.

Continued improper grazing management influences fire frequency by increasing fine fuels. If cheatgrass and/or medusahead increase due to improper grazing management and they become co-dominant with Sandberg bluegrass and other annuals, fires become more frequent.

Proper grazing management that addresses frequency, duration, and intensity of grazing can also keep fine fuels from developing, thereby reducing fire frequency. This can lead to gradual increases in basin big sagebrush. A planned grazing system can be developed to intentionally accumulate fine fuels in preparation for a prescribed burn. Any brush management should be carefully planned, as a reduction in shrubs without a suitable understory of perennials can increase cheatgrass which will lead to more frequent fire intervals.

Weather influences:

Above normal precipitation in April, May and June can dramatically increase total annual production of the plant community. These weather patterns can also increase viable seed production of desirable species to provide for recruitment. Likewise, below normal precipitation during these spring months can significantly reduce total annual production and be detrimental to viable seed production. Overall plant composition is normally not affected when perennials have good vigor.

Below normal temperatures in the spring can have an adverse impact on total production, regardless of the precipitation. An early, hard freeze can occasionally kill some plants.

Prolonged drought adversely affects this plant community in several ways. Vigor, recruitment, and production are usually reduced. Mortality can occur. Prolonged drought can lead to reduction in fire frequency.

Influence of Insects and disease:

Outbreaks can affect vegetation health, particularly bitterbrush from western tent caterpillars (Malacosoma fragilis). Two consecutive years of defoliation by the tent caterpillar can cause mortality in bitterbrush. An outbreak of a particular insect is usually influenced by weather but no specific data for this site is available. Mormon cricket and grasshopper outbreaks occur periodically. Outbreaks seldom cause plant mortality since defoliation of the plant occurs only once during the year of the outbreak.

Influence of noxious and invasive plants:

Many of these species add to the fine-fuel component and lead to increased fire frequency. Many of the annual and perennial invasive species with deep root systems compete with desirable plants for moisture and nutrients. The result is reduced production and change in composition of the understory.

Influence of wildlife:

Big game animals use this site in the late spring, summer, and fall and in mild winters. Their numbers are seldom high enough to adversely affect the plant community. Herbivory can be detrimental to bitterbrush when livestock grazing and browsing by big game occurs at the same time and season. This will occur when both kinds of animal are using the plant in the late summer or fall. The adverse impact is excessive use of the current years' leader growth.

The deer mouse is beneficial to this site as it is the principal vector for planting bitterbrush seed.

Watershed:

Decreased infiltration and increased runoff occur with the increase in basin big sagebrush. Desired understory species can be reduced. The increased runoff also causes sheet and rill erosion. This composition change can affect nutrient and water cycles. Abnormally short fire frequency also gives the same results, but to a lesser degree. The long term effect is a transition to a different state.

Plant Community and Sequence:

Transition pathways between common vegetation states and phases:

State 1.
Phase A to B. Develops in the absence of fire and improper grazing management.
Phase A to C. Develops with fire.
Phase B to A. Develops with prescribed grazing and brush management.
Phase C to A. Develops with prescribed grazing and no fire.
Phase A to D. Develops with an abnormally long period with no fire.
Phase D to C. Develops with fire.
State 1 Phase C to State 2. Develops through frequent fire or improper grazing management. This site has crossed the threshold. It is not economically practical to return this plant community to State 1 with accelerated practices.

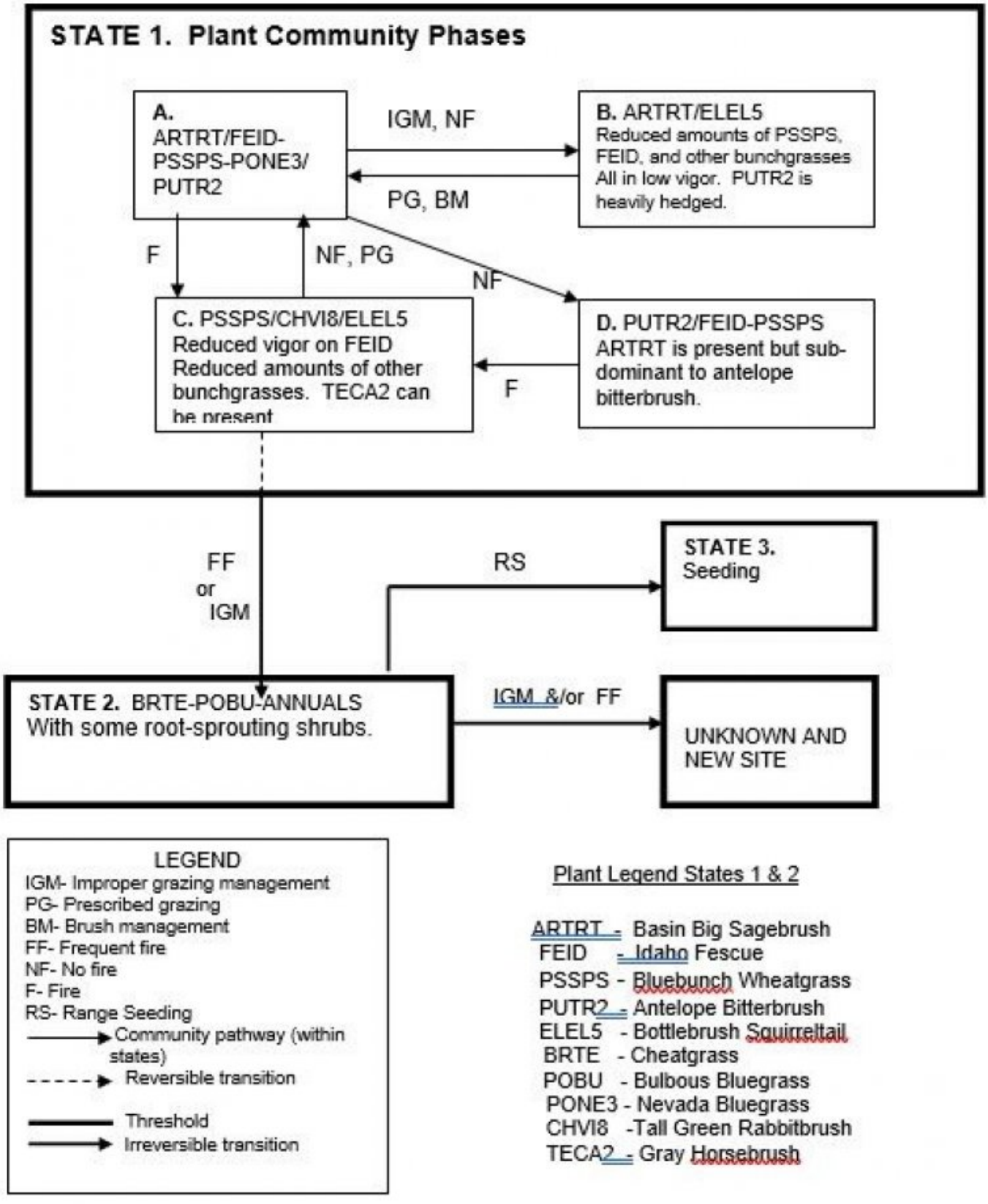
State 2 to State 3. Results from range seeding.

State 2 to unknown site. Excessive soil loss and changes in the hydrologic cycle caused by continued improper grazing management and/or frequent fire cause this state to cross a threshold and retrogress to a new site with reduced potential. It is not economically practical to return this plant community to State 1 with accelerated practices.

Practice Limitations.

No limitations exist on this site for implementing vegetative improvement or management practices. Usually this site is a key area for livestock management due to flatter slopes and non-stony soils. This site is suited to seeding if needed. Mechanical, chemical and fire are satisfactory methods of brush management on this site. No limitations exist on this site for implementing facilitating practices such as water developments, salting and fencing.

## State and transition model




**State 1**
**State 1 Phase A**

**Community 1.1**
**State 1 Phase A**

This plant community has basin big sagebrush in the overstory with Idaho fescue and bluebunch wheatgrass dominating the understory. Nevada bluegrass, prairie junegrass, arrowleaf balsamroot and penstemon are sub-

dominant in the understory. Antelope bitterbrush is normally present in the plant community. Natural fire frequency is 20-50 years.

**Table 5. Ground cover**

| | |
|---|---|
| Tree foliar cover | 0% |
| Shrub/vine/liana foliar cover | 0% |
| Grass/grasslike foliar cover | 0% |
| Forb foliar cover | 0% |
| Non-vascular plants | 0% |
| Biological crusts | 0% |
| Litter | 50-65% |
| Surface fragments >0.25" and <=3" | 0% |
| Surface fragments >3" | 0% |
| Bedrock | 0% |
| Water | 0% |
| Bare ground | 0% |

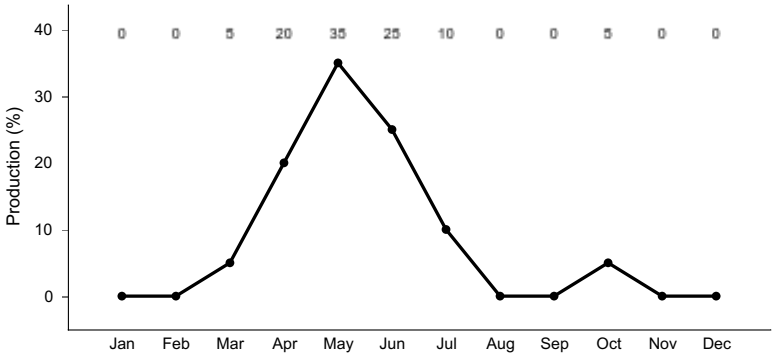



**Figure 3. Plant community growth curve (percent production by month). ID0201, B10 PUTR2 HCPC. State 1, HCPC.**

## State 2
## State 1 Phase B

## Community 2.1
## State 1 Phase B

This plant community is dominated by basin big sagebrush with reduced amounts of bluebunch wheatgrass and Idaho fescue. Antelope bitterbrush is heavily hedged with little to no recruitment occurring. Bottlebrush squirreltail has increased in the understory. All deep-rooted bunchgrasses are typically in low vigor. This state has developed due to improper grazing management and lack of fire. Some cheatgrass, bulbous bluegrass and/or medusahead may have invaded the site.

**Table 6. Ground cover**

| | |
|---|---|
| Tree foliar cover | 0% |
| Shrub/vine/liana foliar cover | 0% |
| Grass/grasslike foliar cover | 0% |
| Forb foliar cover | 0% |
| Non-vascular plants | 0% |
| Biological crusts | 0% |

| | |
|---|---|
| Litter | 50-65% |
| Surface fragments >0.25" and <=3" | 0% |
| Surface fragments >3" | 0% |
| Bedrock | 0% |
| Water | 0% |
| Bare ground | 0% |

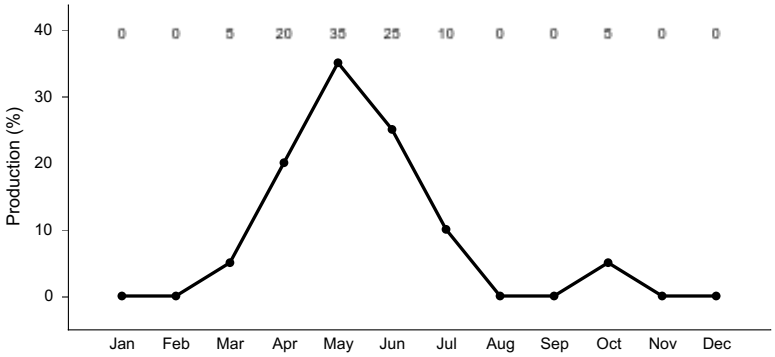



**Figure 4. Plant community growth curve (percent production by month). ID0201, B10 PUTR2 HCPC. State 1, HCPC.**

## State 3
## State 1 Phase C

## Community 3.1
## State 1 Phase C

This plant community is dominated by bluebunch wheatgrass with some tall green rabbitbrush. Idaho fescue can be lost or its vigor reduced due to fire. Bottlebrush squirreltail has increased. Forbs remain about in the same proportion as Plant Community A. Basin big sagebrush and antelope bitterbrush have been reduced significantly due to wildfire. Some cheatgrass, bulbous bluegrass and/or medusahead may have invaded the site. This plant community is the result of wildfire.

**Table 7. Ground cover**

| | |
|---|---|
| Tree foliar cover | 0% |
| Shrub/vine/liana foliar cover | 0% |
| Grass/grasslike foliar cover | 0% |
| Forb foliar cover | 0% |
| Non-vascular plants | 0% |
| Biological crusts | 0% |
| Litter | 50-65% |
| Surface fragments >0.25" and <=3" | 0% |
| Surface fragments >3" | 0% |
| Bedrock | 0% |
| Water | 0% |
| Bare ground | 0% |

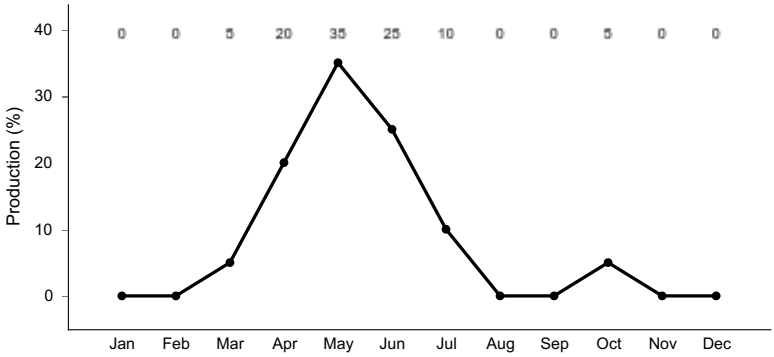



**Figure 5. Plant community growth curve (percent production by month). ID0201, B10 PUTR2 HCPC. State 1, HCPC.**

## State 4
## State 1 Phase D

## Community 4.1
## State 1 Phase D

This plant community is dominated by mature and over-mature antelope bitterbrush. Basin big sagebrush is present but is sub-dominant to antelope bitterbrush. Due to the abundance of shrubs in the plant community, grasses and forbs are slowly declining. This plant community is the result of no fire well beyond the historic fire frequency.

**Table 8. Ground cover**

| | |
|---|---|
| Tree foliar cover | 0% |
| Shrub/vine/liana foliar cover | 0% |
| Grass/grasslike foliar cover | 0% |
| Forb foliar cover | 0% |
| Non-vascular plants | 0% |
| Biological crusts | 0% |
| Litter | 50-65% |
| Surface fragments >0.25" and <=3" | 0% |
| Surface fragments >3" | 0% |
| Bedrock | 0% |
| Water | 0% |
| Bare ground | 0% |

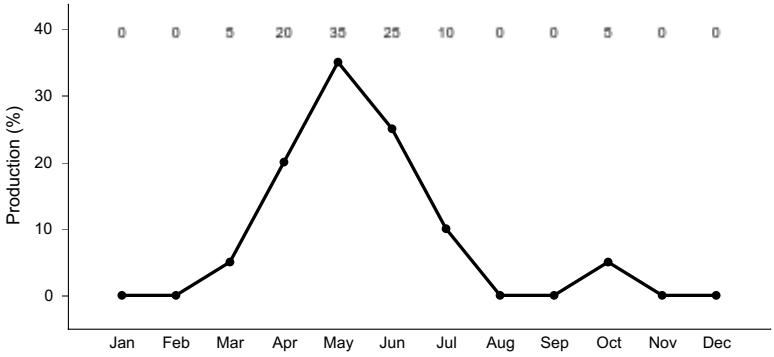



**Figure 6. Plant community growth curve (percent production by month). ID0201, B10 PUTR2 HCPC. State 1, HCPC.**

## State 5

## State 2

## Community 5.1
## State 2

This plant community is dominated by cheatgrass, bulbous bluegrass and /or other annuals. Medusahead may also be present. Root sprouting shrubs such as rabbitbrush and gray horsebrush can be present, dependent upon, how frequent, fire has occurred. Some soil loss has occurred. This state has developed due to frequent fires or improper grazing management. The site has crossed the threshold. It is not economically practical to return this plant community to State 1 with accelerating practices.

**Table 9. Ground cover**

| | |
|---|---|
| Tree foliar cover | 0% |
| Shrub/vine/liana foliar cover | 0% |
| Grass/grasslike foliar cover | 0% |
| Forb foliar cover | 0% |
| Non-vascular plants | 0% |
| Biological crusts | 0% |
| Litter | 50-65% |
| Surface fragments >0.25" and <=3" | 0% |
| Surface fragments >3" | 0% |
| Bedrock | 0% |
| Water | 0% |
| Bare ground | 0% |

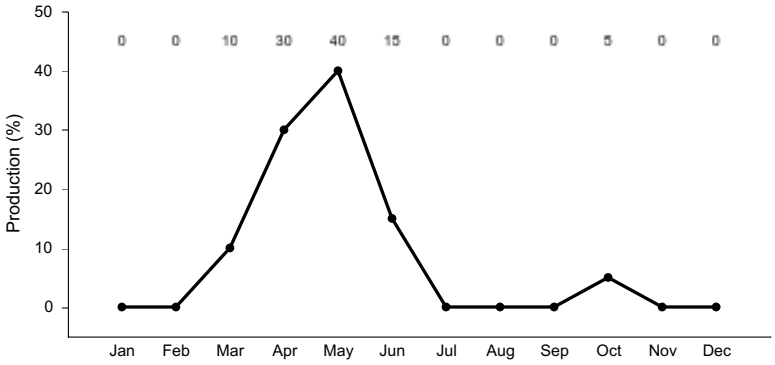



**Figure 7. Plant community growth curve (percent production by month). ID0202, B10 PUTR2 Early Seral. State 2.**

## State 6
## State 3

## Community 6.1
## State 3

This plant community results from range seeding. The seeding may be introduced species or it may be made up of native species that attempt to mimic the historic plant community.

**Table 10. Ground cover**

| | |
|---|---|
| Tree foliar cover | 0% |
| Shrub/vine/liana foliar cover | 0% |
| Grass/grasslike foliar cover | 0% |

| | |
|---|---|
| Forb foliar cover | 0% |
| Non-vascular plants | 0% |
| Biological crusts | 0% |
| Litter | 50-65% |
| Surface fragments >0.25" and <=3" | 0% |
| Surface fragments >3" | 0% |
| Bedrock | 0% |
| Water | 0% |
| Bare ground | 0% |

### State 7
### State 4

### Community 7.1
### State 4

**Table 11. Ground cover**

| | |
|---|---|
| Tree foliar cover | 0% |
| Shrub/vine/liana foliar cover | 0% |
| Grass/grasslike foliar cover | 0% |
| Forb foliar cover | 0% |
| Non-vascular plants | 0% |
| Biological crusts | 0% |
| Litter | 50-65% |
| Surface fragments >0.25" and <=3" | 0% |
| Surface fragments >3" | 0% |
| Bedrock | 0% |
| Water | 0% |
| Bare ground | 0% |

## Additional community tables

## Animal community

Wildlife Interpretations.
Animal Community – Wildlife Interpretations
This plant community provides a mixture of grasses, forbs and shrubs offering suitable habitat for native invertebrates. Mule deer, elk and antelope are the large herbivores using the site. The site provides seasonal habitat for resident and migratory animals including sagebrush lizard, shrews, bats, ground squirrels, mice, coyote, red fox, badger, Ferruginous hawk, prairie falcon, Brewers sparrow, sage-grouse, horned lark and western meadowlark. Encroachment of noxious and invasive plant species (cheatgrass and medusahead) in isolated areas can replace native plant species which provide feed, brood-rearing and nesting cover for a variety of native wildlife. Water features are sparse provided by seasonal streams, artificial water catchments and springs.
State 1 Phase 1.1 – Basin Big Sagebrush/ Idaho Fescue/ Bluebunch Wheatgrass/ Antelope Bitterbrush Reference Plant Community (RPC): This plant community provides a diversity of grasses, forbs and shrubs, used by native insect communities that assist in pollination. An extensive array of forbs and shrubs are in bloom throughout the growing season leading to a diverse native pollinator community. Many avian and mammal species utilize this habitat based on the availability of invertebrate prey species. The reptile community is represented by leopard lizard, short horned lizard, sagebrush lizard, western skink and western rattlesnake. Native shrub-steppe obligate

avian species including Brewer's sparrow, sage sparrow, sage-grouse and sage thrasher use this site. This site can provide nesting and brood rearing habitat for sage-grouse. The plant community provides year round forage and thermal cover for mule deer and elk. Antelope bitterbrush provides preferred winter forage for mule deer and fair forage for elk. Small mammals utilizing the site include golden-mantled ground squirrels, chipmunks, jackrabbits and yellow-bellied marmots. Pygmy rabbits may use these sites. The deer mouse is beneficial to this site as it is the principal vector for planting bitterbrush seed.

State 1 Phase 1.2- Basin Big Sagebrush/ Bottlebrush Squirreltail Plant Community: This state has developed due to improper grazing management and lack of fire. An increase in canopy cover of sagebrush and bitterbrush contributes to a sparse herbaceous understory. Available pollinator habitat is reduced as is the diversity and numbers of insects with the reduction of grasses and forbs. The reptile community is represented by leopard lizard, short horned lizard, sagebrush lizard, western rattlesnake and western skink. The reduction of grasses and forbs in the plant community would reduce the available prey species and cover for these resident reptile species. Fewer prey species and less understory cover results in limited food, brood-rearing and nesting habitat for bird species. Shrub-steppe obligate bird species; Brewer's sparrow, sage sparrow and sage thrasher may benefit from the increase in sagebrush. A reduction of herbaceous understory will lower the quality of sage-grouse habitat. Seasonal (spring, summer and fall) forage habitat for mule deer and elk would be reduced due to poor vigor and amounts of herbaceous vegetation. Thermal cover and young of year cover for deer and elk would be provided at this site. Quality of winter habitat for mule deer and elk would be reduced due to low vigor and quality of antelope bitterbrush. Small mammal population would be similar to Phase 1.1. The deer mouse is beneficial to this site as it is the principal vector for planting bitterbrush seed.

State 1 Phase 1.3 –Bluebunch Wheatgrass/ Tall Green Rabbitbrush/ Bottlebrush Squirreltail Plant Community: This plant community is the result of wildfire. The plant community, dominated by herbaceous vegetation with little to no sagebrush or antelope bitterbrush would provide less vertical structure for animals than in Phase 1.1 or 1.2. Insect diversity would be reduced with the loss of sagebrush and antelope bitterbrush but a diverse native forb plant community would still support select pollinators. An increase in rabbitbrush would provide late season pollinator habitat. The reptiles, including short horned lizard and sagebrush lizard would be limited or excluded due to the loss of sagebrush. The dominance of herbaceous vegetation with little sagebrush canopy cover would prevent use of these areas as nesting habitat by sage-grouse, Brewer's sparrow, sage sparrow and sage thrasher. This plant community provides limited brood-rearing habitat for sage- grouse if adjacent sagebrush cover is provided. The dominant herbaceous vegetation improves habitat for grassland avian species (horned lark and western meadowlark). Mule deer and elk would use this site for seasonal (spring, summer and fall) forage needs but the site would offer little thermal cover and young of year cover. The reduction of shrub cover would allow higher predation of small mammals and would favor grass seed eating mammal species.

State 1 Phase 1.4 –Antelope Bitterbrush/ Idaho Fescue/ Bluebunch Wheatgrass Plant Community Plant Community: This plant community is the result of no fire well beyond the historic fire frequency. An increase in the canopy cover of bitterbrush contributes to a sparse herbaceous understory. Available pollinator habitat is reduced as is the diversity and numbers of insects with the reduction of grasses, forbs and sagebrush. The reptile community is represented by leopard lizard, short horned lizard, sagebrush lizard, western rattlesnake and western skink. The reduction of grasses, forbs and sagebrush in the plant community would reduce the available prey species and cover for these resident reptile species. Fewer prey species and less understory cover results in limited food, brood-rearing and nesting habitat for bird species including Brewer's sparrow, sage sparrow, sage-grouse and sage thrasher. The decrease in sagebrush would reduce the quality of habitat for these birds. Brood-rearing habitat quality for sage-grouse would be lowered due to reduction of understory vegetation and insects. Seasonal (spring, summer and fall) forage habitat for mule deer and elk would be reduced due to poor vigor and amounts of herbaceous vegetation. Thermal cover and young of year cover for deer and elk would be provided at this site. Quality of winter habitat for mule deer and elk would be reduced due to poor quality of antelope bitterbrush. Small mammal population would be similar to Phase 1.1. The deer mouse is beneficial to this site as it is the principal vector for planting bitterbrush seed.

State 2 – Cheatgrass/ Bulbous Bluegrass Plant Community:
This state has developed due to frequent fires or improper grazing management. Invasive herbaceous plants and patches of root sprouting shrubs like rabbitbrushes can be present and provide limited pollinator habitat. If rabbitbrush is present it would enhance fall seasonal pollinator habitat. Native reptile species identified in Phase 1are not supported with food, water or cover. This plant community does not support the habitat requirements for

sage thrasher, Brewer’s sparrow, sage-grouse or sage sparrow. Diversity of grassland avian species is reduced due to poor cover and available food. Birds of prey including hawks and falcons may range throughout these areas looking for prey species. Mule deer and elk may utilize the herbaceous vegetation in the early part of the year when invasive annuals (cheatgrass) are more palatable. At other times of the year large mammals would not regularly utilize these areas due to poor food and cover conditions. Poor cover for small mammals would allow more predation and the plant community would favor grass seed eating mammal species.

State 3 - Range Seeding Plant Community: The proposed seeding mixture (native or non-native) would determine the animal species that would utilize the area. A diverse seed mixture of grasses and forbs would provide similar habitat conditions as in the herbaceous plant community described in State 1 Phase 1.3. A diverse seed mixture of grasses, forbs and shrubs would provide similar habitat conditions as described in State 1 phase 1.1, 1.2 or 1.4. A monoculture of non-native grass species would not support diverse populations of native insects, reptiles, birds or mammals. Sagebrush obligate animal species would not be supported with a monoculture of grass species. Grassland animal species including western meadowlark, horned lark, savannah sparrow, deer mouse, kangaroo rat and elk would utilize this site for nesting and/or foraging. Birds of prey including hawks and falcons may range throughout these areas looking for prey species.

Grazing Interpretations.

This site is best suited for grazing by domestic livestock in late spring, summer and fall.
Estimated initial stocking rate will be determined with the landowner or decision-maker. They will be based on the inventory which includes species, composition, similarity index, production, past use history, season of use and seasonal preference. Calculations used to determine estimated initial stocking rate will be based on forage preference ratings

## Hydrological functions

Soils on this site are in hydrologic group C. When hydrologic condition of vegetation cover is good, natural erosion hazard is slight.

## Recreational uses

This site has many spring and summer blooming forbs and shrubs. Hunting for small game, big game and upland game birds is good to excellent. Snowmobiling has good potential during most winter seasons.

## Wood products

None

## Other products

None

## Other information

Field Offices

Weiser, ID
Emmett, ID
Mountain Home, ID
Meridian, ID
Cascade, ID

## Inventory data references

Information presented here has been derived from NRCS clipping and other inventory data. Also, field knowledge of range-trained personnel was used. Those involved in developing this site description include:
Dave Franzen, co-owner, Intermountain Rangeland Consultants, LLC
Jacy Gibbs, co-owner, Intermountain Rangeland Consultants, LLC
Jim Cornwell, Range Management Specialist, IASCD
Brendan Brazee, State Rangeland Management Specialist, NRCS, Idaho
Lee Brooks, Range Management Specialist, IASCD
Leah Juarros, Resource Soil Scientist, NRCS, Idaho

## Type locality

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|---|
| Location 1: Washington County, ID |

## Other references

Hironaka, M., M.A. Fosberg, A. H. Winward. 1983. Sagebrush- Grass Habitat Types of Southern Idaho. University of Idaho. Moscow, Idaho. Bulletin Number 35
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USDA, NRCS.2001. The PLANTS Database, Version 3.1 (http://plants.usda.gov.). National Plant Data Center, Baton Rouge, LA 70874-4490 USA
USDA, Forest Service, Fire Effects Information Database. 2004. www.fs.fed.us/database.
USDI Bureau of Land Management, US Geological Survey; USDA Natural Resources Conservation Service, Agricultural Research Service; Interpreting Indicators of Rangeland Health. Technical Reference 1734-6; version 4-2005.

## Approval

Kendra Moseley, 9/23/2020

## Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

| | |
|---|---|
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| Contact for lead author | Brendan Brazee, State Rangeland Management Specialist USDA-NRCS 9173 W. Barnes Drive, Suite C, Boise, ID 83709 |
| Date | 03/24/2008 |
| Approved by | Kendra Moseley |
| Approval date | |
| Composition (Indicators 10 and 12) based on | Annual Production |

## Indicators

1. **Number and extent of rills:** rarely occur on this site. If rills are present they are likely to occur on slopes greater than 15 percent and immediately following wildfire. Rills are most likely to occur on soils with surface textures of silt loam and

clay loam.

2. **Presence of water flow patterns:** rarely occur on this site. When they occur they are short and disrupted by cool season grasses and tall shrubs and are not extensive.

3. **Number and height of erosional pedestals or terracettes:** rare on this site. In areas where slopes approach 15 percent and where flow patterns and/or rills are present, a few pedestals may be expected.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** data is not available. On sites in mid-seral status bare ground may range from 35-50 percent.

5. **Number of gullies and erosion associated with gullies:** do not occur on this site.

6. **Extent of wind scoured, blowouts and/or depositional areas:** usually not present. Immediately following wildfire some soil movement may occur on lighter textured soils.

7. **Amount of litter movement (describe size and distance expected to travel):** fine litter in the interspaces may move up to 2 feet following a significant run-off event. Coarse litter generally does not move.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Values should range from 4 to 6 but needs to be tested.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** the A or A! horizon is typically 3 to 9 inches thick. Structure ranges from weak very fine and fine granular to medium thin platy. Soil organic matter (SOM) ranges from 1 to 6 percent.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** bunchgrasses, especially deep-rooted perennials, slow run-off and increase infiltration. Tall shrubs accumulate snow in the interspaces.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** not present.

12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

Dominant: cool season deep-rooted perennial bunchgrasses.

Sub-dominant: perennial forbs = shrubs> shallow rooted bunchgrasses.

Other:

Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** basin big sagebrush and antelope bitterbrush will become decadent in the absence of fire and ungulate grazing. Grass and forb mortality will occur as tall shrubs increase.

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14. **Average percent litter cover (%) and depth ( in):** additional litter cover data is needed but is expected to be 20-25 percent to a depth of 0.2 inches. Under mature shrubs litter is >0.5 inches deep and is 90-100 percent ground cover.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** is 1400 pounds per acre (1555 kilograms per hectare) in a year with normal temperatures and precipitation. Perennial grasses produce 50-60 percent of the total production, forbs 15-25 percent and shrubs 15-25 percent.

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16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:** include bulbous bluegrass, whitetop, leafy spurge, rush skeletonweed, musk and scotch thistle and diffuse and spotted knapweed. Cheatgrass and medusahead may invade at lower elevations of site.

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17. **Perennial plant reproductive capability:** all functional groups have the potential to reproduce in most years.

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