

Ecological site F043BP616ID

Ashy Cold Woodland Group

Last updated: 3/01/2024
Accessed: 04/19/2024

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.

MLRA notes

Major Land Resource Area (MLRA): 043B–Central Rocky Mountains

The Central Rocky Mountains (MLRA 43B) of Idaho exist primarily in central and southeastern portions of the state. The climate is extremely variable with precipitation lows of 9 to 100 inches per year and frost free days of less than 30 to over 110 days. The geology of the region is also highly variable. The combination of variable climate and geology create a complex relationship of plant communities. MLRA 43B elevations with most mountain peaks reach an elevation of 6,000 to 8,000 feet (1,830 to 2,440 meters), but peaks exceeding 10,000 feet (3,050 meters) are not uncommon.

LRU notes

LRU P: PES/PEG (Provisional Ecological Site or Group) A PROVISIONAL ECOLOGICAL SITE is a conceptual grouping of soil map unit components within a Major Land Resource Area (MLRA) based on the similarities in response to management. Although there may be wide variability in the productivity of the soils grouped into a Provisional site, the soil vegetation interactions as expressed in the state-and-transition model are similar and the management actions required to achieve objectives, whether maintaining the existing ecological state or managing for an alternative state, are similar. Provisional sites are likely to be refined into a more precise concept during the process of meeting the APPROVED ECOLOGICAL SITE DESCRIPTION criteria.

Classification relationships

This PROVISIONAL ECOLOGICAL SITE has been developed to meet the standards established in the National Ecological Site Handbook. The information associated with this ecological site does not meet the Approved Ecological Site Description Standard, but it has been through Quality Control and Quality Assurance processes to assure consistency and completeness. Further investigations, reviews and correlations are necessary before it becomes an Approved Ecological Site Description.

Ecological site concept

- Site does not receive any additional water
- Dominant Cover: Coniferous Forest
- Soils are
 - Generally not saline or saline-sodic
 - Soils not strongly or violently effervescent in surface mineral 18 cm
 - Moderately deep, deep, or very deep
 - Typically less than 5% stone and boulder cover (<15% max)
 - Soil ashy or medial textural family
- Soil surface texture is silt loam with ashy modifier
- Site Landform: ridges, swales, plateaus, moraines on cirque floors
- Area of rugged mountain, hills, plateaus, and valleys of the Central Rocky Mountains in central and southeastern

Idaho and southwest Montana.

- Parent material is volcanic ash over till (igneous derived) or loess and alluvium derived from tephra
- Moisture Regime: ustic to udic
- Temperature Regime: cryic
- Elevation Range: 4700-8300
- Slope: 8-80% (typically less than 45%)

Site Development and Testing Plan

This Provisional Ecological Site Description was developed to meet the criteria as defined in Soil Survey National Instruction part 306 (430-306-NI, April 2015) as interpreted by Regional Ecological Site Specialist. Information in this description are first approximations based on broad groupings of soil properties and vegetation characteristics associated with those groupings. Although this description has been through the quality control and quality assurance review process it has not been certified for use in conservation planning.

Associated sites

F043BP612ID	Limy Cold Woodland Group
F043BP609ID	Upland Cold Woodland Group

Similar sites

F043BP612ID	Limy Cold Woodland Group
F043BP609ID	Upland Cold Woodland Group

Table 1. Dominant plant species

Tree	(1) <i>Abies lasiocarpa</i> (2) <i>Pinus contorta</i>
Shrub	(1) <i>Alnus incana ssp. incana</i> (2) <i>Symphoricarpos oreophilus</i>
Herbaceous	(1) <i>Calamagrostis canadensis</i> (2) <i>Xerophyllum tenax</i>

Physiographic features

This ecological site exists on ridges, swales, plateaus, and moraines on cirque floors. Typically slopes are less than 45 percent; however, they may reach up to 80 percent in extremely limited areas.

Table 2. Representative physiographic features

Landforms	(1) Mountains > Ridge (2) Mountains > Swale (3) Mountains > Moraine (4) Mountains > Cirque floor
Elevation	4,800–9,900 ft
Slope	2–90%
Aspect	Aspect is not a significant factor

Climatic features

The climate of this site tends to be cold and wet; receiving up to 80 inches of precipitation with 10 to 60 frost free days. A majority of the precipitation on this site comes from winter snowfall

Table 3. Representative climatic features

Frost-free period (characteristic range)	1-35 days
--	-----------

Freeze-free period (characteristic range)	38-87 days
Precipitation total (characteristic range)	20-25 in
Frost-free period (actual range)	0-55 days
Freeze-free period (actual range)	35-115 days
Precipitation total (actual range)	17-26 in
Frost-free period (average)	20 days
Freeze-free period (average)	65 days
Precipitation total (average)	23 in

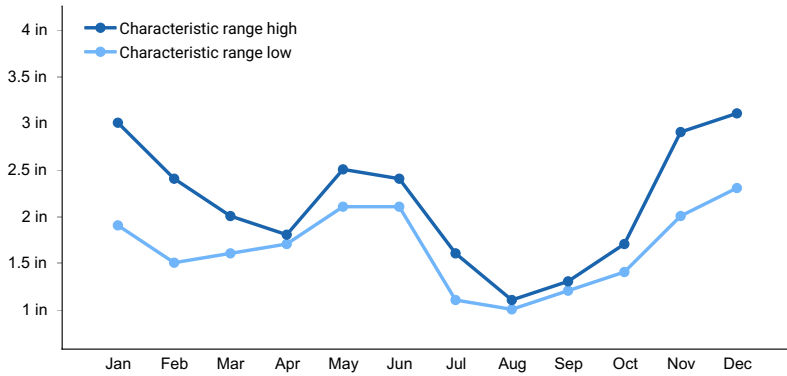


Figure 1. Monthly precipitation range

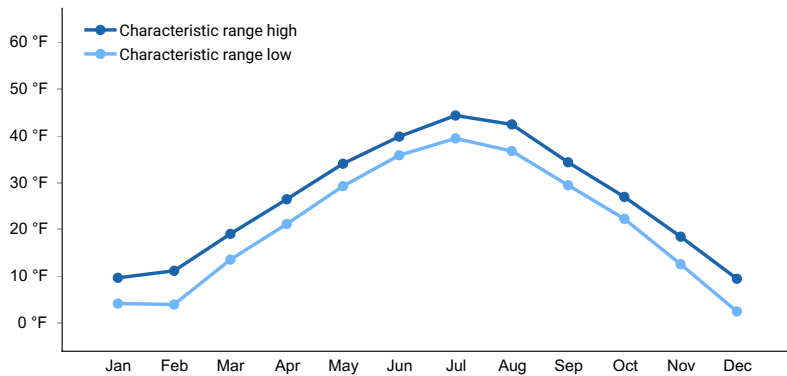


Figure 2. Monthly minimum temperature range

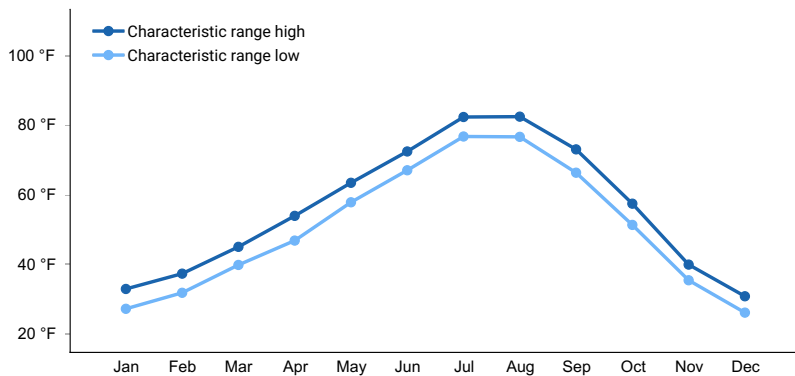


Figure 3. Monthly maximum temperature range

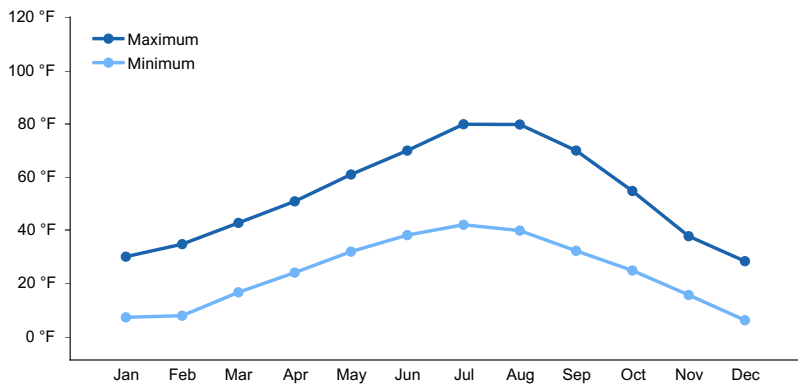


Figure 4. Monthly average minimum and maximum temperature

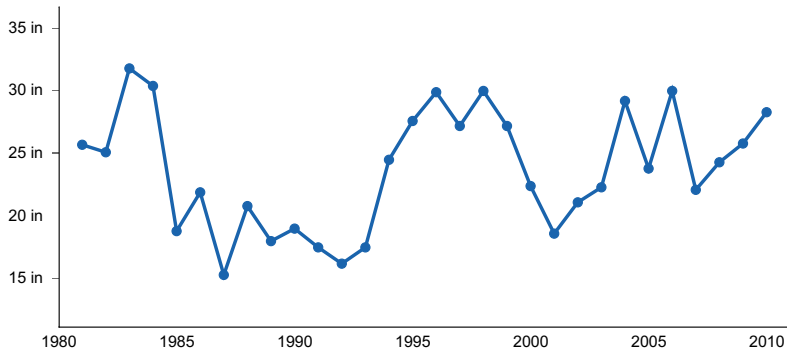


Figure 5. Annual precipitation pattern

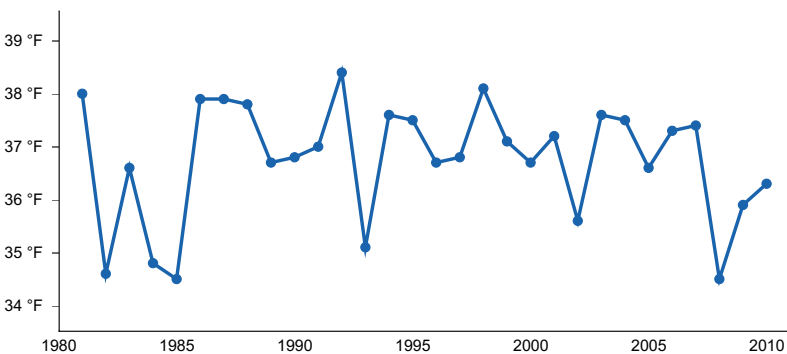


Figure 6. Annual average temperature pattern

Climate stations used

- (1) DIXIE [USC00102575], Elk City, ID
- (2) MIDDLE FORK LODGE [USC00105897], Stanley, ID
- (3) ISLAND PARK [USC00104598], Island Park, ID
- (4) WEST YELLOWSTONE [USC00248857], West Yellowstone, MT

Influencing water features

No water features associated with this site.

Wetland description

N/A

Soil features

Soils are moderately deep to very deep and not strongly or violently effervescent in surface mineral 18 cm. Typically less than 15 percent stone or boulder cover (often less). Soil has andic properties formed by weathering of tephra or

parent material that has significant content of volcanic glass. Volcanic ash is typically the source for this volcanic glass in MLRA 43B in Idaho. Ashy or Medial textural families may be used in the taxonomic description of the soil. This means, among other properties, that there is greater than or equal to 5% volcanic glass in the horizon. Soil textures are often silt loams with the ashy modifier. Parent material in MLRA 43B will be volcanic ash over till (igneous derived) or loess and/or alluvium derived from tephra. pH of these soils tends to be moderately acidic to very strongly acidic with pH from 4.5 to 6.

Table 4. Representative soil features

Parent material	(1) Alluvium–volcanic rock (2) Loess–volcanic rock
Surface texture	(1) Ashy, gravelly silt loam (2) Ashy, gravelly sandy loam (3) Ashy fine sandy loam (4) Ashy coarse sandy loam
Family particle size	(1) Ashy (2) Medial over loamy-skeletal (3) Sandy
Drainage class	Well drained
Permeability class	Moderately slow to rapid
Depth to restrictive layer	20–40 in
Soil depth	20–100 in
Surface fragment cover <=3"	0–5%
Surface fragment cover >3"	0–15%
Available water capacity (0-40in)	2.7–7.2 in
Clay content (0-20in)	4–15%
Soil reaction (1:1 water) (0-20in)	4.5–6
Subsurface fragment volume <=3" (0-40in)	0–35%
Subsurface fragment volume >3" (0-40in)	0–35%

Ecological dynamics

1 Reference State

1.1 Subalpine fir dominated forest with limited Douglas fir and lodgepole pine. Community relatively resilient.

T1A Post disturbance includes stand replacement fire, insect pestilence and disease. Fire frequency is long but fire is intense.

2 Post Disturbance State

2.1 Post fire shrub dominant community (primarily alder and menziesia) with saplings of lodgepole pine being common. Fireweed dominant forb. Grasses may increase outside of fireweed patches

2.1A Time where trees start to re-establish

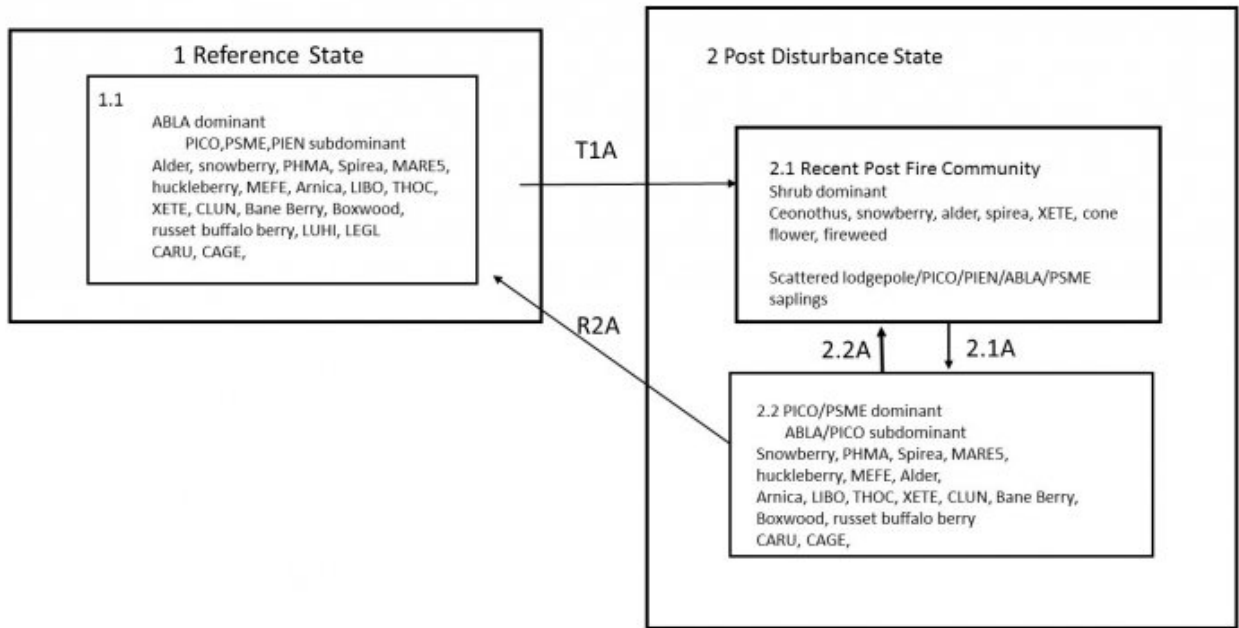
2.2 Post fire forest dominated by lodgepole pine with Douglas fir and Englemann's spruce increasing. Shrubs and grasses returning to pre-fire positions.

2.2A Community phase shift is due to fire, insect pestilence and disease. Fire frequency is long but fire is intense.

R2A Restoration pathway where the site, over time, without fire, insect pestilence, or disease moves back to the reference state. Subalpine fir comes back in and shades out the other tree species. This process takes over 150 years.

State and transition model

43B Ashy Cold Woodland



1.1 Subalpine Fir dominated forest with limited Douglas fir and lodgepole pine. Community relatively resilient.

T1A Post Disturbance includes stand replacement fire, insect pestilence and disease. Fire frequency is long but fire is intense.

2.1 Post fire shrub dominant community (primarily alder and menziesia) with saplings of lodgepole being common. Fireweed dominant forb. Grasses may increase outside of fireweed patches

2.1A Time where trees start to re-establish

2.2A Community phase shift is due to fire, insect pestilence and disease. Fire frequency is long but fire is intense.

2.2 Post Fire forest dominated by lodgepole pine with Douglas fir and Englemann spruce increasing. Shrubs and grasses returning to pre-fire positions.

R2A Restoration pathway where the site, over time, without fire, insect pestilence, or disease moves back to the reference state. Subalpine fir comes back in and shades out the other tree species. This process takes over 150 years.

Animal community

This ecological site is considered important habitat for large wild game such as deer, elk, and moose; as well as, upland birds such as ruffed, dusky, and spruce grouse.

Typically this site is considered marginal for livestock grazing however if the tree canopy is open it is grazeable.

Recreational uses

Site frequently used by many outdoor recreationists such as bird watchers, campers, hikers, bikers, and hunters.

Other products

The dominant forest type is typically not suited to forest products however subordinate species such as Douglas fir and Lodgepole pine have many uses. Harvest of this site will prove challenging as this site is typically located on the middle to upper 1/3 of the landscape.

Inventory data references

Information was gathered from Forest Habitat Type guides and other reference material gathered historically by range and forest professionals.

Other references

Steele, Robert; Pfister, Robert D.; Ryker, Russell A.; Kittams, Jay A. 1981. Forest Habitat Types of Central Idaho. General Technical Report INT-114. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station. 138 p.

Steele, Robert; Cooper, Stephen V.; Ondov, David M.; Roberts, David W.; Pfister, Robert D. 1983. Forest habitat types of eastern Idaho-western Wyoming. Gen. Tech. Rep. INT-144. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station. 122 p.

Contributors

Grant Petersen
Bryan Christensen

Approval

Kirt Walstad, 3/01/2024

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.

Author(s)/participant(s)	
Contact for lead author	
Date	04/19/2024
Approved by	Kirt Walstad
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:**
-

2. **Presence of water flow patterns:**

3. **Number and height of erosional pedestals or terracettes:**

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

5. **Number of gullies and erosion associated with gullies:**

6. **Extent of wind scoured, blowouts and/or depositional areas:**

7. **Amount of litter movement (describe size and distance expected to travel):**

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

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:

Sub-dominant:

Other:

Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**

14. **Average percent litter cover (%) and depth (in):**

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

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:**

17. **Perennial plant reproductive capability:**
