USDA Natural Resources Conservation Service

Ecological site F043BP602ID
Shallow Cool Woodland Group

Last updated: 3/01/2024
Accessed: 05/02/2024

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 southeast 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 GROUP/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 a 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

• Dominant Cover: Coniferous Forest
• Site does not receive any additional water
• Soils are
o Not saline or saline-sodic
o Not strongly or violently effervescent within surface mineral 4”
o Soil is shallow (less than 20in (50cm) to bedrock, lithic, or paralithic root restriction)
o Soil is not ashy or medial textural family
o Stones and/or boulders cover <15% surface area or fragmental textural class
• Soil surface texture variable (often loamy to sandy loam)
• Site Landform: mountain slope, ridges, cirques, escarpments
• Area of rugged mountain, hills, plateaus, and valleys of the Central Rocky Mountains in Central and SE Idaho.

• Parent material is variable
• Moisture Regime: udic (xeric)
• Temperature Regime: cryic (frigid)
• Elevation Range: 5800-6850
• Slope: 2-70% (typically less than 35%)

Associated sites

F043BP610ID	**Upland Cool Woodland Group**

Similar sites

F043BP604ID	**Shallow Warm Woodland Group**

Table 1. Dominant plant species

Tree	(1) *Abies lasiocarpa* (2) *Pinus albicaulis*
Shrub	(1) *Symphoricarpos albus* (2) *Spiraea*
Herbaceous	(1) *Calamagrostis rubescens* (2) *Arnica*

Physiographic features

Site is quite variable in slope from two to 70 percent however slope is rarely greater than 35 percent.

Table 2. Representative physiographic features

Landforms	(1) Mountains > Ridge (2) Mountains > Mountain slope (3) Mountains > Cirque (4) Mountains > Escarpment
Elevation	3,800–6,500 ft
Slope	2–70%
Aspect	W, NW, N, NE, E, SE, S, SW

Climatic features

The Central Rocky Mountains range in elevation from 6000 to 10000 feet above sea level with some peaks reaching over 12000 feet. The average annual precipitation, based on 10 long-term climate stations located within this grouping, is 38 inches. The annual average minimum is 31 and the annual average maximum recorded is 47 inches. The annual average temperature is 41.7 degrees Fahrenheit. The annual average low is 18.7 and the annual average high is 57.9 degrees F. The frost free period ranges from 74 to 119 days while the freeze free period ranges from 120 to 146 days.

Table 3. Representative climatic features

Frost-free period (characteristic range)	74-119 days
Freeze-free period (characteristic range)	120-146 days
Precipitation total (characteristic range)	38 in
Frost-free period (actual range)	63-130 days
Freeze-free period (actual range)	114-152 days
Precipitation total (actual range)	38 in

Frost-free period (average)	97 days
Freeze-free period (average)	133 days
Precipitation total (average)	38 in

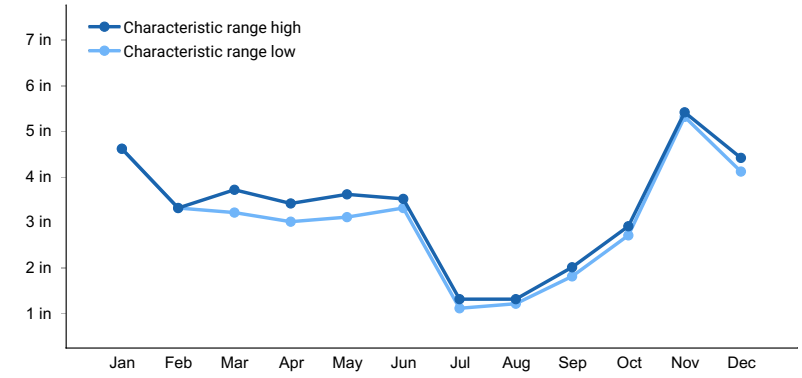

Figure 1. Monthly precipitation range

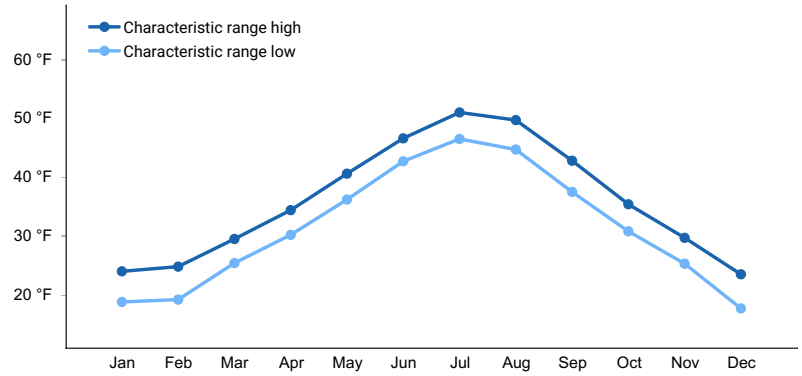

Figure 2. Monthly minimum temperature range

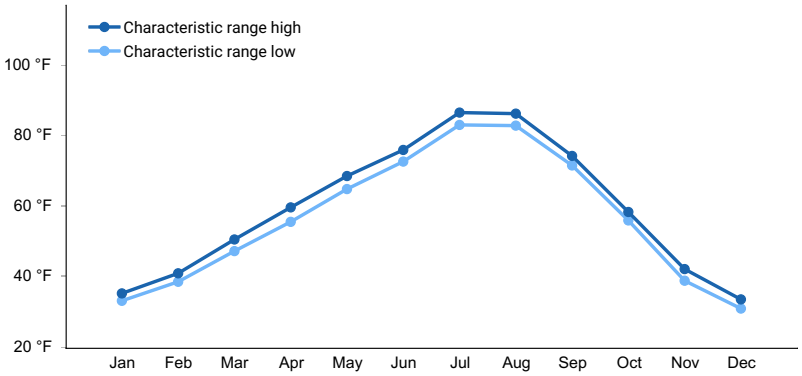

Figure 3. Monthly maximum temperature range

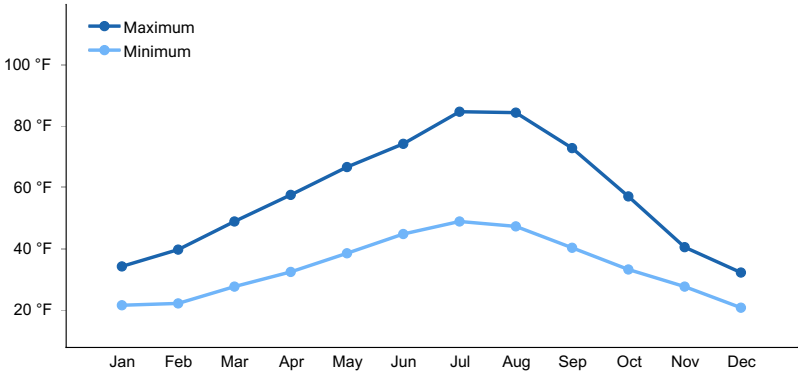

Figure 4. Monthly average minimum and maximum temperature

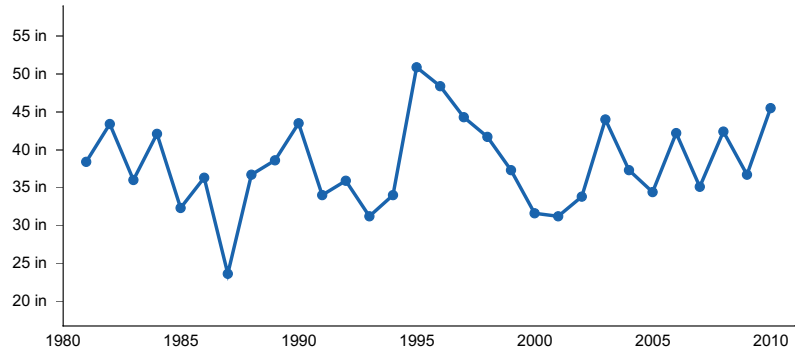

Figure 5. Annual precipitation pattern

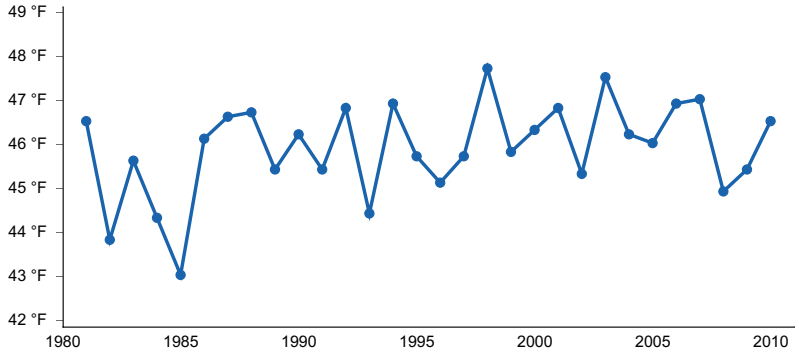

Figure 6. Annual average temperature pattern

Climate stations used

- (1) FENN RS [USC00103143], Elk City, ID
- (2) POWELL [USC00107320], Elk City, ID

Influencing water features

Site not associated with a water table.

Wetland description

Not Present

Soil features

Soil is formed as colluvium or residuum from variable local geology. Soil textures are often loamy or skeletal in texture with mixed amounts of rock fragments in soil profile.

Table 4. Representative soil features

Parent material	(1) Colluvium–igneous, metamorphic and sedimentary rock (2) Residuum–igneous, metamorphic and sedimentary rock
Surface texture	(1) Gravelly, fine gravelly sandy loam (2) Very stony loam (3) Very gravelly, very stony loamy coarse sand (4) Very stony fine sandy loam
Family particle size	(1) Loamy (2) Loamy-skeletal (3) Sandy-skeletal
Drainage class	Well drained to excessively drained
Depth to restrictive layer	10–20 in

Soil depth	10–20 in
Surface fragment cover <=3"	0–5%
Surface fragment cover >3"	0–20%
Available water capacity (0-40in)	0.7–1.8 in
Clay content (0-40in)	5–25%
Soil reaction (1:1 water) (0-40in)	5.1–7.8
Subsurface fragment volume <=3" (0-40in)	0–35%
Subsurface fragment volume >3" (0-40in)	10–60%

Ecological dynamics

1.1 Subalpine fir and whitebark pine dominated forest with Douglas fir, lodgepole pine, Englemann’s spruce as minor components. Grasses and sedges tend to be limited. Forbs and shrubs dominate understory canopy.
T1A Post-disturbance includes stand replacement fire, insect pestilence and disease. Fire frequency is long but fire is intense.

2.1 Shrub dominant condition post-disturbance. Saplings of multiple trees present. Forbs increase in composition particularly colonizing species like fireweed and coneflower. Grasses increase (Mountain brome, Richardson’s needlegrass, Purple oniongrass, and Rough fescue)
2.1A Time where trees start to re-establish

2.2 Lodgepole pine dominant community with saplings of subalpine fir, whitebark pine, Douglas fir, Englemann's Spruce. Grasses decreasing, shrubs and forbs reduced slightly as light interception is reduced
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. Whitebark pine increases. This process can take over 150 years.

State and transition model

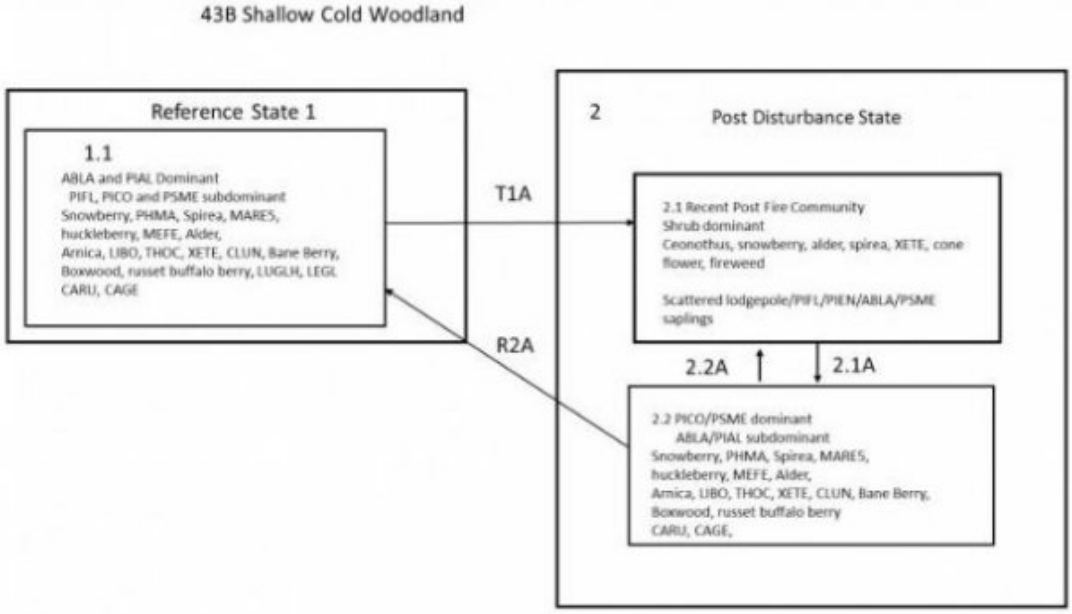

Figure 7.

1.1 Subalpine fir and Whitebark pine dominated forest with Douglas fir, Lodgepole, Englemann's Spruce as minor component. Grasses and sedges tend to be limited. Forbs and shrubs dominate understory canopy.
T1A Post Disturbance includes stand replacement fire, insect pestilence and disease. Fire frequency is long but fire is intense.

2.1 Shrub dominant condition post disturbance. Saplings of multiple trees present. Forbs increase in composition particularly colonizing species like fireweed and coneflower. Grasses increase (Mountain brome, Richardson's needlegrass, Purple oniongrass, and Rough fescue)
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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.

Wood products

The dominant forest type is typically not suited for 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 top 1/3 of the landform (mountain slopes).

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.

Contributors

Grant Petersen
Bryan Christenson

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	05/02/2024
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:

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17. **Perennial plant reproductive capability:**
