

Ecological site F043BP610ID Upland Cool Woodland Group

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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 (limited extent)
 - Moderately deep, deep, or very deep
 - Typically less than 5% stone and boulder cover (<15% max)
- Soil surface texture ranges from sandy loam to clay loam in surface mineral 4"
- Site Landform: mountain slopes, ridges, escarpments
- Area of rugged mountain, hills, plateaus, and valleys of the Central Rocky Mountains
- Parent material is colluvium, colluvium over residuum, residuum
- Moisture Regime: ustic to udic

- Temperature Regime: cryic
- Elevation Range: 3800-6850
- Slope: 0-70% (Typically less than 35%)

Associated sites

F043BP602ID	Shallow Cool Woodland Group
F043BP607ID	Subirrigated Cool Woodland Group

Similar sites

F043BP611ID	Upland, Warm Woodland Group
F043BP609ID	Upland Cold Woodland Group

Table 1. Dominant plant species

Tree	(1) <i>Pseudotsuga menziesii</i> (2) <i>Pinus contorta</i>
Shrub	(1) <i>Juniperus communis</i> (2) <i>Symphoricarpos albus</i>
Herbaceous	(1) <i>Calamagrostis rubescens</i> (2) <i>Arnica</i>

Physiographic features

Site exists on mountain slopes, ridges, and escarpments. Slopes vary from one to 70 percent with dominant slopes rarely exceeding 35 percent.

Table 2. Representative physiographic features

Landforms	(1) Mountains > Hillside or mountainside (2) Mountains > Ridge
Elevation	1,829–3,048 m
Slope	2–70%
Aspect	Aspect is not a significant factor

Climatic features

The site is located within frigid, cool to cryic temperature regime in the typic xeric to udic moisture regime with relative effective annual precipitation (REAP) quite variable from 20 to 45 inches. Frost Free days are 50 to 90.

Table 3. Representative climatic features

Frost-free period (characteristic range)	7-31 days
Freeze-free period (characteristic range)	49-81 days
Precipitation total (characteristic range)	508-635 mm
Frost-free period (actual range)	3-39 days
Freeze-free period (actual range)	43-90 days
Precipitation total (actual range)	483-660 mm
Frost-free period (average)	20 days
Freeze-free period (average)	65 days
Precipitation total (average)	584 mm

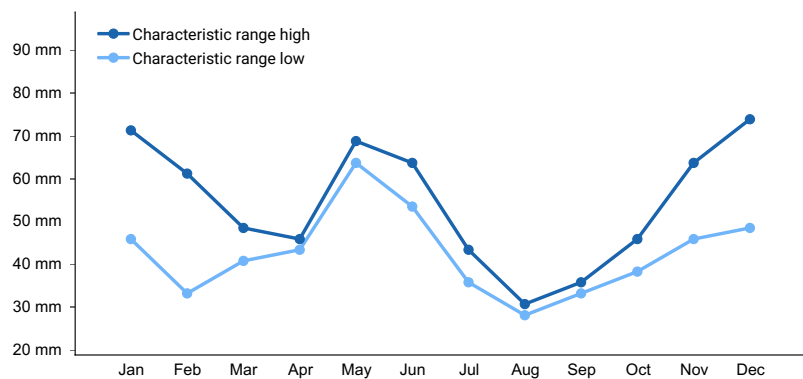


Figure 1. Monthly precipitation range

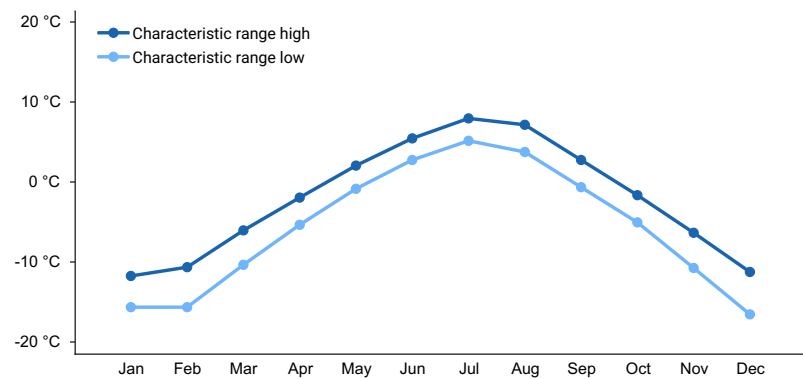


Figure 2. Monthly minimum temperature range

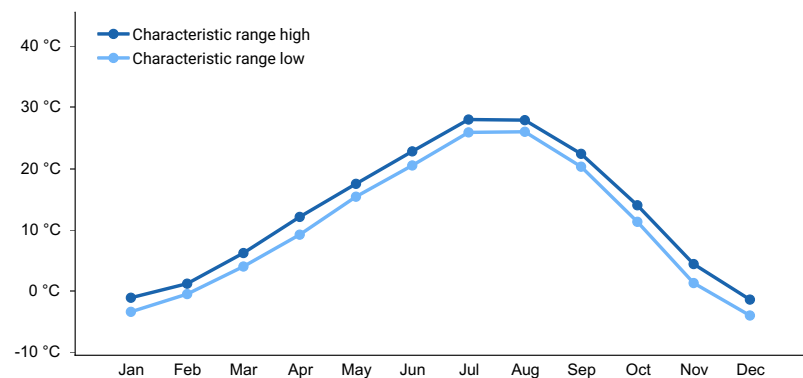


Figure 3. Monthly maximum temperature range

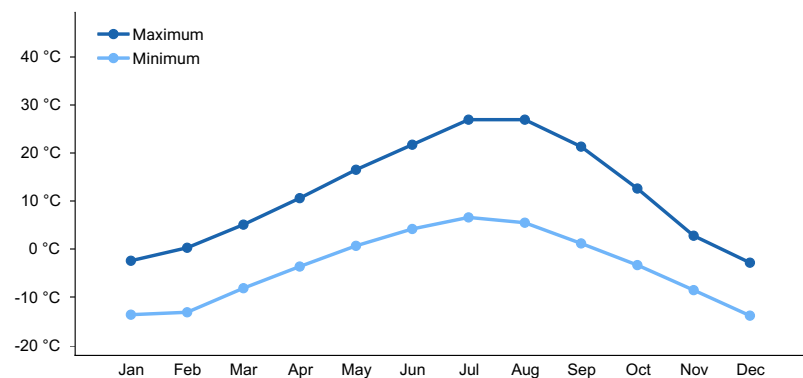


Figure 4. Monthly average minimum and maximum temperature

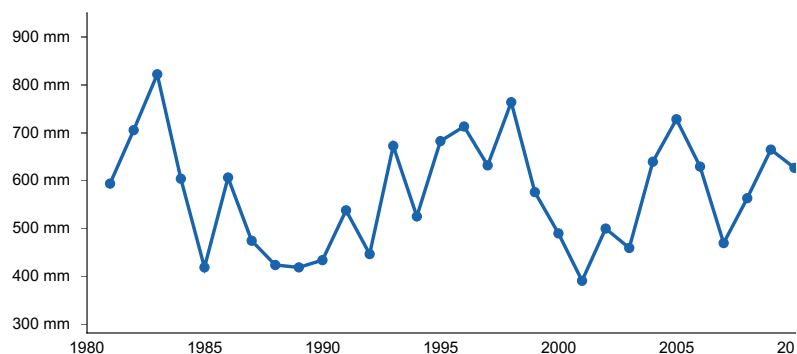


Figure 5. Annual precipitation pattern

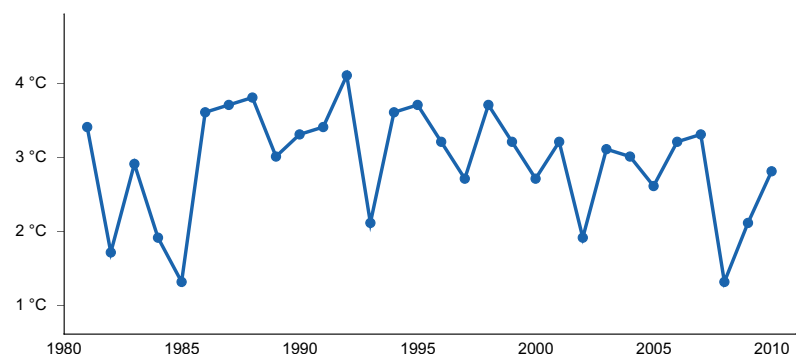


Figure 6. Annual average temperature pattern

Climate stations used

- (1) SWAN VALLEY 2 E [USC00108937], Swan Valley, ID
- (2) WEST YELLOWSTONE [USC00248857], West Yellowstone, MT
- (3) ISLAND PARK [USC00104598], Island Park, ID

Influencing water features

No water features are associated with this ecological grouping.

Wetland description

N/A

Soil features

Soil textures vary based on local geology; however, trend loamy. Parent material is colluvium, colluvium over residuum, and residuum.

Table 4. Representative soil features

Parent material	(1) Colluvium–igneous, metamorphic and sedimentary rock (2) Residuum–igneous, metamorphic and sedimentary rock
Surface texture	(1) Very cobbly, very gravelly loam (2) Fine gravelly sandy loam (3) Very stony, very bouldery coarse sandy loam (4) Ashy, gravelly silt loam (5) Clay loam
Family particle size	(1) Coarse-loamy (2) Fine-loamy (3) Loamy-skeletal (4) Sandy-skeletal

Drainage class	Well drained to somewhat excessively drained
Permeability class	Moderately slow to moderately rapid
Soil depth	51–254 cm
Surface fragment cover <=3"	0–25%
Surface fragment cover >3"	0–40%
Available water capacity (0-101.6cm)	3.05–20.83 cm
Clay content (0-101.6cm)	4–45%
Soil reaction (1:1 water) (0-101.6cm)	5.1–8.4
Subsurface fragment volume <=3" (0-101.6cm)	0–40%
Subsurface fragment volume >3" (0-101.6cm)	0–60%

Ecological dynamics

1.1 Douglas fir dominated forest with understory of shrubs and mixed grasses. Lodgepole pine and Englemann's spruce throughout the forest but sparsely spaced.

T1A Post Disturbance includes stand replacement fire, insect pestilence, disease, and clear cut

2.1 Post fire shrub dominant community with saplings of lodgepole being common. Fireweed dominant forb. Grasses may increase outside of fireweed patches.

2.1A Over time lodgepole pine saplings increase with some Douglas fir and Englemann's spruce saplings increasing. Forbs and shrubs decrease as tree canopy increases.

2.2A Community Pathway includes stand replacement fire, insect pestilence, disease, and clear cut

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.

R2A Restoration pathway where the site, over time, without fire, insect pestilence, or disease moves back to the Reference State. Douglas fir comes back in and shades out lodgepole pine.

T2A: It occurs when intense precipitation events follow extreme stand replacement fires. Due to loss of seed source coupled with extreme surface erosion trees struggle to establish. Grasses and shrubs become dominant.

3.1 Stand Replacement Fire Plus Extreme Erosion State: This State is rare in its extent within the MLRA. It occurs when intense precipitation events follow extreme stand replacement fires.

State and transition model

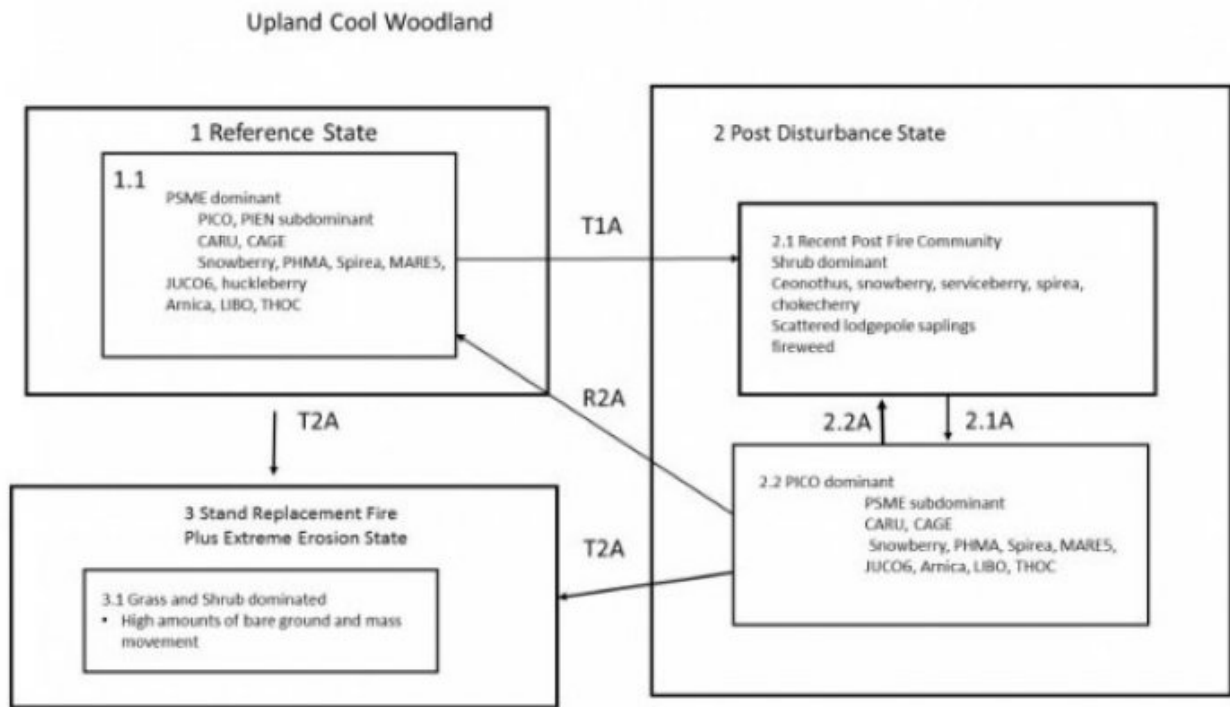


Figure 7.

43B Upland Cool Woodland Legend

1.1 Douglas fir dominated forest with understory of shrubs and mixed grasses. Lodgepole pine and Englemann's Spruce throughout the forest but sparsely spaced.

T1A Post Disturbance includes stand replacement fire, insect pestilence, disease, and clear cut

2.1 Post fire shrub dominant community with saplings of lodgepole being common. Fireweed dominant forb. Grasses may increase outside of fireweed patches.

2.1A Over time PICO saplings increase with some PSME and PIEN saplings increasing. Forbs and shrubs decrease as tree canopy increases.

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

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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 good for livestock grazing. If the tree canopy is open it will often contain grazeable forage.

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 suited to forest products of different types. Harvest of this site may prove challenging due to slope and remote location.

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

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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	05/13/2025
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:**
