

Ecological site F146XY051ME

Rockland

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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.

Ecological site concept

This site is characterized by 25 to 75 percent exposed bedrock, interspersed with pockets of shallow soil supporting mostly herbaceous species. It typically occurs on moderate or very steep sloping terrain with many rock fragments on the surface and throughout the soil profile.

Soils formed in mostly slate and phyllite parent materials which were deposited over bare bedrock as glaciers receded. Although this site receives similar precipitation amounts as nearby forests, the impermeability of bedrock and steep slopes generate significant runoff, resulting in dry soil and site conditions for most of the growing season. The plant community is composed of diverse lichens, shrubs, and herbaceous species, with some stunted balsam fir and other small trees. The plant community dynamics of this site are poorly understood, and require further study.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs mostly on ridges, cliffs, and surrounding areas where bedrock is exposed at the soil surface and interspersed with small pockets of shallow soil. This site generates large amounts of runoff due to steep slopes and impermeability of bedrock, resulting in extremely dry soil/site conditions.

Table 2. Representative physiographic features

Landforms	(1) Ridge (2) Hill (3) Cliff
Flooding frequency	None
Ponding frequency	None
Elevation	61–762 m
Slope	15–100%
Aspect	Aspect is not a significant factor

Climatic features

The climate of this site is characterized by cold, snowy winters, and cool summers. Annual precipitation ranges from 34 to 51 inches. Precipitation is nearly equally distributed throughout the year, with slightly more moisture falling in June–October. During winter months, and sometimes fall and spring, cold winds from the north bring severe

weather events.

Due to the lack of tree cover, this site may experience high wind speeds, which in the winter may cause some snow-drifts that influence microclimate and species distribution within the site.

Table 3. Representative climatic features

Frost-free period (average)	100 days
Freeze-free period (average)	129 days
Precipitation total (average)	1,016 mm

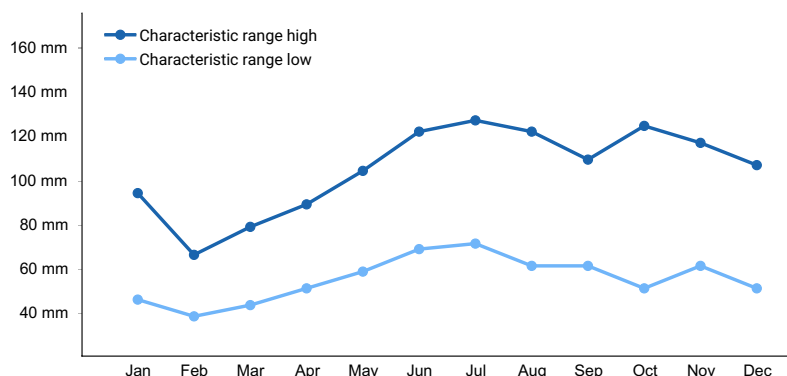


Figure 1. Monthly precipitation range

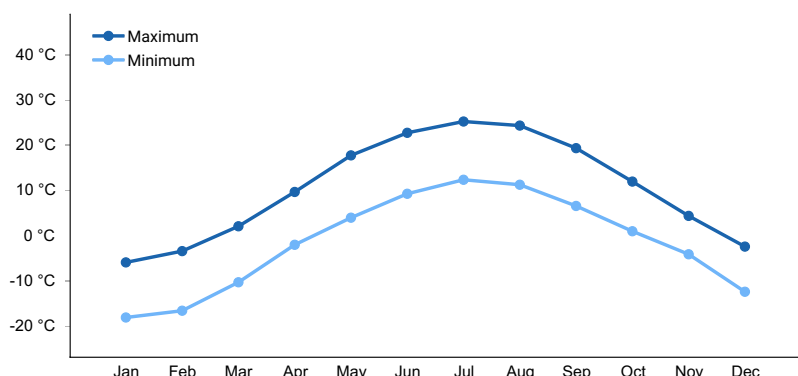


Figure 2. Monthly average minimum and maximum temperature

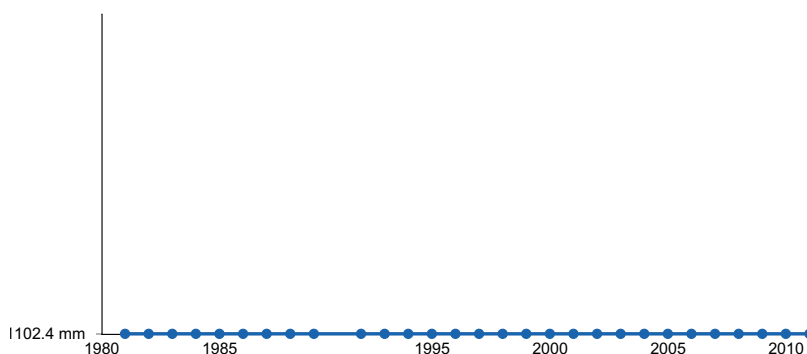


Figure 3. Annual precipitation pattern

Climate stations used

- (1) ALLAGASH [USC00170200], Saint Francis, ME
- (2) CARIBOU MUNI AP [USW00014607], Caribou, ME
- (3) BRIDGEWATER [USC00170833], Bridgewater, ME
- (4) FT KENT [USC00172878], Fort Kent, ME

- (5) HOULTON 5N [USC00173944], Houlton, ME
- (6) PRESQUE ISLE [USC00176937], Presque Isle, ME
- (7) HOULTON INTL AP [USW00014609], Houlton, ME

Influencing water features

Due to its landscape position, this site is not influenced by streams or wetlands.

Soil features

This site consists of 25 to 75 percent exposed bedrock, interspersed with pockets of shallow soil. Soils formed in mostly slate and phyllite parent materials which were deposited on bedrock as glaciers receded. Pockets of accumulated organic matter may also support patches of vegetation. Rock fragments are typically abundant on the surface and throughout the soil. Water-holding capacity is low and drainage is excessive, resulting in dry soil conditions for plant establishment. The soil temperature regime is frigid, and the soil moisture regime is udic.

Table 4. Representative soil features

Parent material	(1) Melt-out till–slate (2) Organic material–phyllite
Surface texture	(1) Very channery silt loam
Drainage class	Excessively drained
Soil depth	0–51 cm
Surface fragment cover ≤3"	0–30%
Surface fragment cover >3"	0–10%
Available water capacity (0–101.6cm)	4.06–11.43 cm
Calcium carbonate equivalent (0–101.6cm)	0%
Electrical conductivity (0–101.6cm)	0 mmhos/cm
Sodium adsorption ratio (0–101.6cm)	0
Soil reaction (1:1 water) (0–101.6cm)	3.6–6
Subsurface fragment volume ≤3" (Depth not specified)	30–40%
Subsurface fragment volume >3" (Depth not specified)	10–20%

Ecological dynamics

This site concept includes various plant communities, composed of diverse lichens, shrubs, and herbaceous species, with some stunted balsam fir and other small trees. The plant community dynamics of these rockland sites are poorly understood, and require further study.

State and transition model

Contributors

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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	
Approved by	
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:**
