Ecological site F144BY120ME
Small Floodplain Riparian Complex (reserved)

Last updated: 9/27/2024
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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): 144B–New England and Eastern New York Upland, Northern Part

This major land resource area (MLRA) is in Maine (56 percent), New Hampshire (22 percent), Vermont (14 percent), Massachusetts (6 percent), Connecticut (1 percent), and New York (1 percent). It makes up about 22,728 square miles (58,864 square kilometers). The MLRA consists of a relatively young landscape shaped by the Laurentide Ice Sheet, which covered the region from 35,000 to 10,000 years ago. Rolling hills of dense basal till converge on ridges of shallow bedrock that were scoured by glacial ice. River valleys that were flooded by melting glacial water or seawater house large expanses of glacial outwash and stratified drift in inland areas and, to a lesser extent, glaciomarine and glaciolacustrine sediment deposits in coastal areas. Organic bogs, ablation till, and alluvial flood plains make up the remaining portions of the MLRA. The soils in this region are dominantly Entisols, Spodosols, and Inceptisols. They commonly have a fragipan. The dominant suborders are Ochrepts, Orthods, Aquepts, Fluvents, and Saprists. The soils in the region dominantly have a frigid soil temperature regime with some cryic areas at higher elevation, a udic soil moisture regime, and mixed mineralogy. Most of the land is forested, and 98 percent is privately owned. Significant amounts of forest products are produced including lumber, pulpwood, Christmas trees, and maple syrup. Principal agricultural crops include forage and grains for dairy cattle, potatoes, apples, and blueberries. Wildlife habitat and recreation are important land uses. Stoniness, steep slopes, and poor drainage limit the use of many of the soils.

Classification relationships

NRCS: Land Resource Region: R—Northeastern Forage and Forest Region MLRA: 144B—New England and Eastern New York Upland, Northern PartMLRA resources Major Land Resource Area (MLRA): 144B–New England and Eastern New York Upland, Northern Part

Ecological site concept

This site occurs next to small rivers and streams and includes a complex of soils and landforms associated with floodplains. Poorly-drained banks occur nearest the channel, with broad, somewhat poorly to moderately well-drained floodplains behind. Side channels often carry large amounts of water into the floodplains at high flows, and the lowest areas of the floodplain, including poorly- and very poorly-drained oxbows and depressions, may be ponded at times. Soils are derived from alluvium, are typically silt loams to fine sands in texture, and may have gravel or sand layers from particular flooding events. Poorly-drained soils are often organic over alluvium. The variability in microtopography on this site results in a patchy mosaic of plant communities, but trees are typically lacking. Diverse grasses and herbs indicate differences in soil wetness throughout the site due to slight variability in elevation above the water table. This site is subject to flooding, but the most extensive disturbance is ice scour, which periodically removes woody species, maintaining the herbaceous dominance in the plant community. Beaver activity can alter reaches of this site by slowing the flow, which results in less scour and subsequently greater shrub dominance. These narrow landforms are nutrient rich with high water-holding capacity, but are too small for extensive cultivation. Much of this site occurs upstream of dams, though altered flow regimes may have significant impact on this site. Further study is needed to better describe the properties and disturbances that define this site concept.

Similar sites

F144BY110ME	**Broad Floodplain Riparian Complex** The BroadFloodplains site occurs next to large rivers and consists of broad, forested areas that are often cultivated

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site consists of complex microtopography associated with rivers, including: stream banks, floodplains, backswamps, stream terraces, etc. Slopes are gentle throughout this site, and minor changes in slope and elevation often correspond to major differences in flooding, ponding, and the resultant soil moisture and vegetation. This site is therefore considered a riparian complex of distinct soils and plant communities which occur together on distinctive but closely associated fluvial landforms.

Table 2. Representative physiographic features

Landforms	(1) Flood plain (2) Channel (3) Backswamp
Flooding duration	Brief (2 to 7 days) to long (7 to 30 days)
Flooding frequency	Rare to frequent
Ponding frequency	None to frequent
Elevation	0 – 760 m
Slope	0 %
Ponding depth	0 – 30 cm
Water table depth	0 – 30 cm
Aspect	Aspect is not a significant factor

Climatic features

The climate is humid and temperate and is characterized by warm summers and cold winters. Precipitation generally is evenly distributed throughout the year. Near the coast, it is slightly lower in summer. In inland areas, it is slightly higher in spring and fall. Rainfall occurs during high-intensity, convective thunderstorms in summer. In winter, most of the precipitation occurs as moderate-intensity storms (northeasters) that produce large amounts of rain or snow. Heavy snowfalls commonly occur late in winter. Temperatures and the length of the freeze-free period increase from north to south and closer to the coast.

This major land resource area (MLRA) covers four states and may have substantial climate variability among locations: Maine (56 percent), New Hampshire (22 percent), Vermont (14 percent), Massachusetts (6 percent), Connecticut (1 percent), and New York (1 percent).

Table 3 Representative climatic features

Frost-free period (characteristic range)	120-140 days
Freeze-free period (characteristic range)	140-170 days
Precipitation total (characteristic range)	1,070-1,220 mm
Frost-free period (actual range)	100-150 days
Freeze-free period (actual range)	130-180 days
Precipitation total (actual range)	1,020-1,370 mm
Frost-free period (average)	130 days
Freeze-free period (average)	160 days
Precipitation total (average)	1,170 mm

- (1) ACADIA NP [USC00170100], Bar Harbor, ME
- (2) BELFAST [USC00170480], Belfast, ME
- (3) CORINNA [USC00171628], Corinna, ME
- (4) DOVER-FOXCROFT WWTP [USC00171975], Dover Foxcroft, ME
- (5) FARMINGTON [USC00172765], Farmington, ME
- (6) GARDINER [USC00173046], Gardiner, ME
- (7) JONESBORO [USC00174183], Addison, ME
- (8) LEWISTON [USC00174566], Auburn, ME
- (9) MADISON [USC00174927], Anson, ME
- (10) NEWCASTLE [USC00175675], Newcastle, ME
- (11) ORONO [USC00176430], Old Town, ME
- (12) WATERVILLE TRTMT PLT [USC00179151], Waterville, ME
- (13) WEST ROCKPORT 1 NNW [USC00179593], Rockport, ME
- (14) AUGUSTA STATE AP [USW00014605], Augusta, ME
- (15) BANGOR INTL AP [USW00014606], Bangor, ME
- (16) PORTLAND INTL JETPORT [USW00014764], Portland, ME

Influencing water features

This site occurs next to small perennial rivers and streams that, when in reference condition, regularly overtop their banks, depositing sediment and nutrients on small floodplains dominated by shrubs and herbs. Small changes in elevation above the water table may result in large variability in soil moisture and plant community.

Wetland description

Wetland Description: Cowardin
System: Riverine
Subsystem: Upper Perennial
Class: Unconsolidated Shore

Soil features

The soils of this site include well-drained high terraces and mounds, moderately well- to somewhat-poorly drained floodplains, and poorly- to very-poorly drained oxbows and depressions. All of these soils are formed in alluvium, with some of the wetter areas having a thick organic cap. Textures are typically silt loams to sandy loams and may include lenses of distinctive textures or gravels from particular flooding events. These soils are deep, nutrient rich, however, they are typically too small to be extensively cultivated.

Table 4. Representative soil features

Parent material	(1) Alluvium – metasedimentary rock (2) Organic material
Surface texture	(1) Silt loam (2) Fine sandy loam (3) Very fine sandy loam
Drainage class	Very poorly drained to well drained
Soil depth	0 – 150 cm
Surface fragment cover <=3"	Not specified
Surface fragment cover >3"	Not specified
Available water capacity (Depth not specified)	11.18 – 36.07 cm
Calcium carbonate equivalent (Depth not specified)	Not specified
Electrical conductivity (Depth not specified)	Not specified
Sodium adsorption ratio (Depth not specified)	Not specified

Soil reaction (1:1 water) (Depth not specified)	3.6 – 7.3
Subsurface fragment volume <=3" (Depth not specified)	Not specified
Subsurface fragment volume >3" (Depth not specified)	Not specified

Ecological dynamics

[Caveat: The vegetation information contained in this section and is only provisional, based on concepts, and future projects support validation through field work. *] The vegetation groupings described in this section are based on the terrestrial ecological system classification and vegetation associations developed by NatureServe (Comer et al., 2003) and localized associations provided by the New York Natural Heritage Program (Edinger et al., 2014), Maine Natural Areas Program (Gawler and Cutko, 2010), New Hampshire Natural Heritage Program (Sperduto and Nichols, 2011), and Massachusetts Division of Fisheries and Wildlife (Swain, 2020).

This site is a complex of plant communities occurring on small floodplains and associated landforms. The stream banks tend to support water-loving graminoids and forbs, while the floodplains typically have some combination of herbaceous and shrubby species. Depressions, oxbows and other low-lying areas are dominated by water-loving herbs and graminoids, and typically have organic soils. All of these varied communities are closely associated and form the riparian plant community complex.
The small size of these rivers and streams make them susceptible to beaver influences. Beaver dams (or other structures that moderate flow and flooding intensity) favor more shrubby species (alder, willows, etc.), while the absence of impediments to flooding and ice-scour favor more herbaceous species. These small floodplains are not extensively cultivated due to their size.

This site includes the following state natural heritage program types:
• Twisted Sedge Riverbank (Sperduto and Nichols 2004)
• Herbaceous channel (Sperduto and Nichols 2004)
• Alder Floodplain (Sperduto and Nichols 2004)
• Bluejoint-goldenrod riverbank (Sperduto and Nichols 2004)
• Alder Floodplain (Gawler and Cutko 2010)
• Tallgrass Meadow (Gawler and Cutko 2010)
• Rivershore grassland (Thompson and Sorenson 2000)
• Alluvial Shrub Swamp (Thompson and Sorenson 2000)

State and transition model

Additional community tables

Table 5. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)

Table 6. Community 1.2 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)

Inventory data references

Future work is needed, as described in a future project plan, to validate the information presented in this provisional ecological site description. Future work includes field sampling, data collection and analysis by qualified vegetation ecologists and soil scientists. As warranted, annual reviews of the project plan can be conducted by the Ecological Site Technical Team. A final field review, peer review, quality control, and quality assurance reviews of the ESD are necessary to approve a final document.

Other references

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Contributors

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Approval

Nels Barrett, 9/27/2024

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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	06/29/2020
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):**

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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:

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

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

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

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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:**

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17. **Perennial plant reproductive capability:**
