

Ecological site RX141X210 Marsh Wetland Complex

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Accessed: 09/14/2026

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): 141X–Tug Hill Plateau

MLRA 141 is entirely in New York and makes up about 1,173 square kilometers (3,037 square kilometers). It consists of a relatively small but unique upland that lies just off the eastern end of Lake Ontario and west of the Black River Valley and Adirondack Mountain region. It is essentially a north- and east-facing glaciated cuesta scarp and is underlain by thick Wisconsin till and small areas of outwash. Most of the plateau is woodland, so forestry and recreation are the primary uses, but small isolated dairy operations and hobby farms are located around the perimeter. The area is bordered on the east by the Black River Valley, on the north by the St. Lawrence Lowland, on the west by the Ontario Lowland, and on the south by the Upper Mohawk Valley. The northern and eastern boundaries of MLRA 141 are distinct where they contact the physiographically dissimilar southwestern part of MLRA 142 (St. Lawrence-Champlain Plain). The western and southern boundaries are also distinct where they contact the physiographically dissimilar MLRA 101 (Ontario-Erie Plain and Finger Lakes Region)

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. Representative soils include: Carbondale, Carlisle, and Rifle. The variability in microtopography on this site results in a patchy mosaic of plant communities that may include trees, shrubs, and herbs. Diverse grasses and other herbaceous species indicate differences in soil wetness throughout the site due to slight variability in elevation above the water table. This site is subject to flooding and ice scour, which periodically removes woody species, maintaining the herbaceous component of the plant community. Beaver activity can alter reaches of this site by slowing the flow, which results in less flooding and scour. 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 below dams may have significant impact on this site. Further study is needed to better describe the properties and disturbances that define this site concept. There are likely more than one Marsh Wetland ecological sites in this MLRA. These freshwater emergent and/or submergent marshes are dominated by herbaceous vegetation. They are common throughout the northeastern United States and adjacent Canadian provinces. Freshwater marshes occur in closed or open basins that are generally flat and shallow. They are associated with lakes, ponds, slow-moving streams, and/or impoundments or ditches. The herbaceous vegetation does not persist through the winter. Scattered shrubs are often present and usually total less than 25% cover. Trees are generally absent and, if present, are scattered. The substrate is typically muck over mineral soil.

Associated sites

RX141X110	Floodplain Riparian Complex Marsh Wetland Complex sites may often be adjacent and intersect with Floodplain Riparian Complex sites and transition into one another as a semi-natural state.
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Similar sites

RX141X110	Floodplain Riparian Complex Marsh Wetland Complex sites may have similar composition of herbaceous vegetation and shrubs as Floodplain Riparian Complex sites.
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Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Alnus incana ssp. rugosa</i> (2) <i>Spiraea alba var. latifolia</i>
Herbaceous	(1) <i>Thelypteris palustris</i> (2) <i>Glyceria</i>

Legacy ID

F141XY210NY

Physiographic features

Table 2. Representative physiographic features

Landforms	(1) Swamp or marsh (2) Depression
Elevation	80 – 610 m
Water table depth	0 cm
Aspect	Aspect is not a significant factor

Climatic features

Throughout the year precipitation is evenly distributed around most of this area with slightly less rainfall occurring around the lower margins of the plateau. Rainfall occurs as high-intensity, convective thunderstorms during the summer. Lake-effect snowfall is heavy from late autumn to early spring with the summit of the plateau having the lowest temperatures and the shortest freeze-free periods.

Climate stations Watertown and Old Forge are adjacent to the MLRA and were used to tabulate additional representative climate data.

Table 3 Representative climatic features

Frost-free period (characteristic range)	90-120 days
Freeze-free period (characteristic range)	130-160 days
Precipitation total (characteristic range)	1,190-1,350 mm

Frost-free period (actual range)	90-130 days
Freeze-free period (actual range)	120-160 days
Precipitation total (actual range)	1,120-1,450 mm
Frost-free period (average)	110 days
Freeze-free period (average)	140 days
Precipitation total (average)	1,270 mm

- (1) BOONVILLE 4 SSW [USC00300785], Boonville, NY
- (2) CAMDEN [USC00301110], Camden, NY
- (3) WATERTOWN [USC00309000], Watertown, NY
- (4) OLD FORGE [USC00306184], Eagle Bay, NY

Influencing water features

This ecological site is associated with lakes, ponds, slow-moving streams, and/or impoundments or ditches. Due to its low-lying position, this site is susceptible to altered hydrology from beaver dams and man-made structures (e.g. roads). Increased ponding depth and duration results in a ponded phase dominated by emergent vegetation such as cattails. As ponding depth and duration returns to the natural regime due to dam/road removal (or over long periods of time the infilling of pond with sediment and debris) this site will transition through many short-lived marsh communities before eventually returning to dominance by those of the reference community.

Wetland description

This ecological site may be saturated or seasonally flooded to semi-permanently flooded freshwater emergent marshes, characterized by wetland herbs and shrubs.

Soil features

Representative soils include: Carbondale, Carlisle, and Rifle.

Table 4. Representative soil features

Parent material	(1) Organic material
Surface texture	(1) Muck (2) Gravelly sand
Drainage class	Very poorly drained
Permeability class	Slow to moderately slow

Depth to restrictive layer	180 cm
Soil depth	Not specified
Surface fragment cover <=3"	Not specified
Surface fragment cover >3"	Not specified
Available water capacity (Depth not specified)	40.64 – 53.34 cm
Soil reaction (1:1 water) (Depth not specified)	Not specified
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 2003) and localized associations provided by the New York Natural Heritage Program (Edinger et al. 2014).

This site is dominated by diverse graminoid, herb, and shrub species. Shrubs such as speckled alder tend to dominate the higher perimeter and mounds within the marsh site, while diverse sedges, bulrushes, grasses, and forbs dominate the wetter areas. Relatively small changes in soil wetness may alter the distribution of these species within the site, and further study is required to distinguish the relationship between hydrology and vegetation on this site.

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Artificial drainage of this site is yet to be observed.

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 (%)
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Table 6. Community 1.2 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 7. Community 2.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 8. Community 2.2 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 9. Community 2.3 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 10. Community 3.1 plant community composition

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

Christopher Mann

Approval

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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	09/14/2026
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:
