

Ecological site F149BY004NY

Wet Lake Plain

Last updated: 9/11/2024
Accessed: 09/22/2026

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): 149B—Long Island-Cape Cod Coastal Lowland

149B—Long Island-Cape Cod Coastal Lowland MLRA 149B is in the Embayed Section of the Coastal Plain Province of the Atlantic Plain. It is part of the partially submerged coastal plain of New England. It is mostly an area of nearly level to rolling plains, but it has some steeper hills (glacial moraines). Ridges border the lower plains. The Peconic and Carmans Rivers are on the eastern end of Long Island. The parts of this area in Massachusetts and Rhode Island have no major rivers. This entire area is made up of deep, unconsolidated glacial outwash deposits of sand and gravel. A thin mantle of glacial till covers most of the surface. Some moraines form ridges and higher hills in this area of generally low relief. Sand dunes and tidal marshes are extensive along the coastline.

Classification relationships

USDA-NRCS (USDA, 2006): Land Resource Region (LRR): S—Northern Atlantic Slope Diversified Farming Region Major Land Resource Area (MLRA): 149B—Long Island-Cape Cod Coastal Lowland USDA-FS (Cleland et al., 2007): Province: 221 Eastern Broadleaf Forest Province Section: 221A Lower New England Subsection: 221Ab Cape Cod Coastal Lowland and Islands Subsection: 221An Long Island Coastal Lowland and Moraine

Ecological site concept

This site consists of very deep, poorly drained soils that formed in silty estuarine or glacio-lacustrine deposits on glacial lake plains. Representative soil is Raynham (coastal) Wallington, and Canadice. The reference community in this site is “red maple-swamp white oak” (Edinger et al. 2014). The dominant tree is swamp white oak with red maple. Other trees include pin oak, black gum, and green ash. Characteristic shrubs include winterberry holly, northern arrowwood. Groundcover is commonly ferns: cinnamon fern, royal fern, marsh fern; and sedges: Gray’s sedge, fringed sedge, hop sedge.

Associated sites

F149BY003MA	Well Drained Lake Plain Well-drained Lake Plain
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Similar sites

F149BY008MA	Very Wet Outwash Wet Outwash
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Table 1. Dominant plant species

Tree	(1) <i>Acer rubrum</i> (2) <i>Quercus bicolor</i>
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Shrub	(1) <i>Vaccinium corymbosum</i>
Herbaceous	Not specified

Physiographic features

The site occurs on nearly level to gently sloping soils in low-lying positions on glaciolacustrine and marine terraces.

Table 2. Representative physiographic features

Landforms	(1) Lake plain (2) Depression
Flooding frequency	None
Ponding frequency	None
Elevation	0 – 150 m
Slope	0 – 10 %
Water table depth	20 – 30 cm
Aspect	Aspect is not a significant factor

Climatic features

Coastal regions' climate generally considered maritime, experiences a more moderate climate than inland, i.e., cooler summers and warmer winters and delayed onset of spring. However, coastal regions do experience the brunt of extreme weather such as nor'easters and tropical storms, e.g., hurricanes.

Table 3 Representative climatic features

Frost-free period (characteristic range)	160-190 days
Freeze-free period (characteristic range)	210-230 days
Precipitation total (characteristic range)	1,190-1,250 mm
Frost-free period (actual range)	150-200 days
Freeze-free period (actual range)	190-230 days

Precipitation total (actual range)	1,190-1,270 mm
Frost-free period (average)	180 days
Freeze-free period (average)	220 days
Precipitation total (average)	1,220 mm

- (1) BRIDGEHAMPTON [USC00300889], Sag Harbor, NY
- (2) GREENPORT PWR HOUSE [USC00303464], Greenport, NY
- (3) MINEOLA [USC00305377], Mineola, NY
- (4) RIVERHEAD RSCH FM [USC00307134], Riverhead, NY

Influencing water features

These sites may be considered depressional or "perched" with seeps, hence maybe considered more minerally-enriched.

Wetland description

The National Wetlands Inventory (NWI) would classify these ecological sites as Palustrine. (Cowardin 1979).

Soil features

This site consists of shallow to very deep, somewhat poorly to poorly drained soils that formed in wind, water, or glacial lake deposits. Representative soils are Raynham, Wallington, and Canadice soils mapped within MLRA 149B.

Table 4. Representative soil features

Parent material	(1) Glaciolacustrine deposits (2) Eolian deposits (3) Alluvium
Surface texture	(1) Silt loam (2) Loam
Family particle size	(1) Coarse-silty (2) Fine
Drainage class	Poorly drained to somewhat poorly drained
Permeability class	Very slow
Depth to restrictive layer	50 – 180 cm

Soil depth	180 cm
Surface fragment cover <=3"	Not specified
Surface fragment cover >3"	Not specified
Available water capacity (0-101.6cm)	10.16 – 20.32 cm
Soil reaction (1:1 water) (0-101.6cm)	4.5 – 7.8
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, not yet validated with 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). Terrestrial ecological systems are specifically defined as a group of plant community types (associations) that tend to co-occur within landscapes with similar ecological processes, substrates, and/or environmental gradients. They are intended to provide a classification unit that is readily mappable, often from terrain and remote imagery, and readily identifiable by conservation and resource managers in the field. A given system will typically manifest itself in a landscape at intermediate geographic scales of tens-to-thousands of hectares and will persist for 50 or more years. A vegetation association is a plant community that is much more specific to a given soil, geology, landform, climate, hydrology, and disturbance history. It is the basic unit for vegetation classification and recognized by the US National Vegetation Classification (US FDGC 2008; USNVC 2017). Each association will be named by the diagnostic and often dominant species that occupy the different height strata (tree, shrub, and herb). Within the NatureServe Explorer database, ecological systems are numbered by a community Ecological System Code (CES) and individual vegetation associations are assigned an identification number called a Community Element Global Code (CEGL).

[*Caveat] The information presented is representative of very complex vegetation communities. Key indicator plants and ecological processes are described to help inform land management decisions. Plant communities will differ across the MLRA because of the naturally occurring variability in weather, soils, and geography. The reference plant community is not necessarily the management goal. The drafts of species lists are merely representative and are not botanical descriptions of all species occurring, or potentially occurring, on this site. They are not intended to cover every situation or the full range of conditions, species, and responses for the site.

The Wet Lake Plains ecological site occurs on poorly-drained flats and depressions in protected areas along the coast and is characterized mainly by coastal forests, and variants such as wet “sunken” forests. These wet coastal forests are highly varied and range from deciduous swamps dominated by red maple to sunken forests dominated by pin oak and swamp white oak to wet evergreen swamps dominated by Atlantic white cedar (*Chamaecyparis thyoides*). These wet lake plains in coastal settings are not well-described but may in part, include vegetation within the Northern Atlantic Coastal Plain Basin Swamp and Wet Hardwood Forest system (CES203.520) and in part by the Northern Atlantic Coastal Plain Basin Peat Swamp system (CES203.522) (NatureServe 2017).

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 3.1 plant community composition

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

Site Development and Testing Plan Future work is needed, as described in a 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.

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Contributors

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Approval

Nels Barrett, 9/11/2024

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	05/21/2020
Approved by	
Approval date	

Composition (Indicators 10 and 12) based on	Annual Production
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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:
