

Ecological site R144AY045RI Subaqueous Freshwater Mineral Deposits

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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): 144A–New England and Eastern New York Upland, Southern Part

MLRA 144A: New England and Eastern New York Upland, Southern Part

The eastern half of the eastern part of this MLRA is in the Seaboard Lowland Section of the New England Province of the Appalachian Highlands. The western half of the eastern part and the southeastern half of the western part are in the New England Upland Section of the same province and division. The northwestern half of the western part is in the Hudson Valley Section of the Valley and Ridge Province of the Appalachian Highlands. This MLRA is a very scenic area of rolling to hilly uplands that are broken by many gently sloping to level valleys that terminate in coastal lowlands. Elevation ranges from sea level to 1,000 feet (0 to 305 meters) in much of the area, but it is 2,000 feet (610 meters) on some hills. Relief is mostly about 6 to 65 feet (2 to 20 meters) in the valleys and about 80 to 330 feet (25 to 100 meters) in the uplands.

This area has been glaciated and consists almost entirely of till plains and drumlins dissected by narrow valleys with a thin mantle of till. The southernmost boundary of the area marks the farthest southward extent of glaciation on the eastern seaboard. The river valleys and coastal plains are filled with glacial lake sediments, marine sediments, and glacial outwash. The bedrock in the eastern half of the area consists primarily of igneous and metamorphic rocks of early Paleozoic age. Granite is the most common igneous rock, and gneiss, schist, and slate are the most common metamorphic rocks. In the parts of the MLRA in northeastern Pennsylvania and in eastern and southeastern New York, Devonian- to Pennsylvanian-age sandstone, shale, and limestone bedrock is dominant. Carbonate rocks, primarily dolomite and limestone, are the dominant kinds of bedrock in the part of this MLRA in northwestern Connecticut.

Ecological site concept

The site consists of subaqueous soils permanently submerged beneath 0 to about 3 meters of water on submerged landscapes of freshwater ponds, lakes, and reservoirs. Slope ranges from 0 to 5 percent. Representative soils are Aquapaug, Burlingame, and Shannock.

Aquapaug soils formed in over 100 cm of sandy outwash material. Burlingame soils formed in mixed lacustrine material overlying till. They are typically underlain by supraglacial meltout or lodgement till. Shannock soils formed in a thick mantle of recent lacustrine sediments over glacial lacustrine and/or glaciofluvial sediments.

Areas of this soil are used for recreational fishing, swimming, and aquatic wetland habitat. Vegetation includes waterseed (*Elodea canadensis*), bladderwort (*Utricularia* spp.), fanwort (*Cabomba caroliniana*), variable milfoil (*Myriophyllum heterophyllum*), white water lily (*Nymphaea odorata*), and yellow water lily (*Nuphar variegatum*).

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	(1) <i>Elodea canadensis</i>

Physiographic features

Climatic features

Influencing water features

Soil features

The site consists of subaqueous soils permanently submerged beneath 0 to about 6 feet of water on submerged landscapes of freshwater ponds, lakes, and reservoirs. Slope ranges from 0 to 5 percent. Surface textures include loamy sand, sandy loam, and mucky fine sandy loam. Drainage class is subaqueous. Representative soils are Aquapaug, Burlingame, and Shannock.

Table 2. Representative soil features

Parent material	(1) Glaciofluvial deposits–granite (2) Till–gneiss (3) Lacustrine deposits–schist
Surface texture	(1) Loamy sand (2) Sandy loam (3) Mucky fine sandy loam
Surface fragment cover <=3"	0–5%
Surface fragment cover >3"	1–20%

Ecological dynamics

Vegetation includes waterweed (*Elodea Canadensis*), bladderwort (*Utricularia* spp.), fanwort (*Cabomba caroliniana*), variable milfoil (*Myriophyllum heterophyllum*), white water lily (*Nymphaea odorata*), and yellow water lily (*Nuphar variegatum*).

State and transition model

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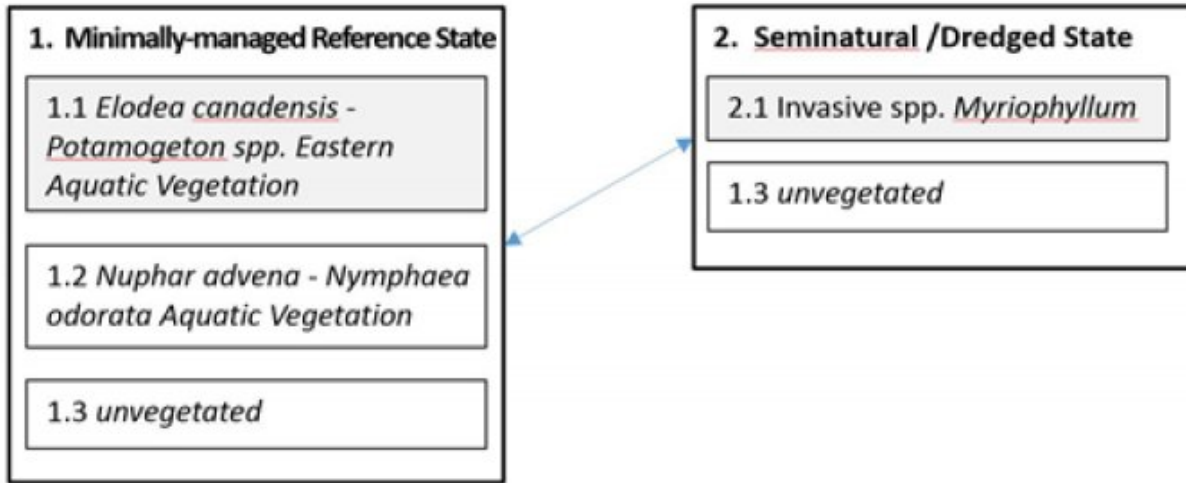


Figure 1. STM_144AY045_Subaqueous_Freshwater_Mineral_Deposit

Transition	Drivers/practices
T1-2	Dredging
R2-1	Fill and aquatic planting

Figure 2. STM_144AY045_Subaqueous_Freshwater_Mineral_Deposit

Other references

REFERENCES

Bradley, M.P. and Stolt, M.H., 2003. Subaqueous soil-landscape relationships in a Rhode Island estuary. *Soil Science Society of America Journal*, 67(5)_1487-1495.

Ditzler, C.A., Ahrens, R.J., Rabenhorst, M.C., Stolt, M., Hipple, K., and Turenne, J. s.d. Classification, Mapping, and Interpretation of Subaqueous Soils. Unpubl. Manuscript.

Stolt, M., Bradley, M., Turenne, J., Payne, M., Scherer, E., Cicchetti, G., Shumchenia, E., Guarinello, M., King, J., Boothroyd, J. and Oakley, B., 2011. Mapping shallow coastal ecosystems: a case study of a Rhode Island lagoon. *Journal of Coastal Research*, 27(6A)_1-15.

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):**

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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:

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:**
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