

Ecological site R144AY048RI

Subaqueous Haline Low Energy Basins

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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

The site consists of very deep, subaqueous soils that are permanently submerged beneath 10 through 300 cm of tidal estuarine water in lagoon bottoms and lagoon channels, mainland coves, bays, and submerged stream valleys. Slope ranges from 0 through 3 percent. Representative soils are Billington, Fort Neck, and Pishagqua. Billington soils are formed in silty or coarse loamy marine and estuarine deposits over buried organic material. Organic materials are mainly derived from woody fresh water environments or herbaceous tidal peat and occur within 40 through 100 cm of the soil surface. The Fort Neck soils are formed in coarse-loamy estuarine deposits over submerged sandy or loamy Pleistocene materials or sandy estuarine deposits. The Pishagqua soils formed beneath 50 through 300 cm of tidal estuarine water in fine-silty marine or estuarine deposits.

The site occurs in low energy areas (affected very little by wave energy, deposition of sandy material, or storm events). The site is used for recreational boating, fishing, and swimming. Commercial uses include shell fishing, marinas, mooring fields, and aquaculture. Benthic fauna such as tubeworms, clams, juvenile blue crabs, scallops and juvenile finfish are associated with this soil. Native vegetation includes rooted and floating algae, eelgrass (*Zostera marina*) and widgeon grass (*Ruppia maritima*). Vegetative cover ranges from 0 through 100 percent.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

Climatic features

Influencing water features

Soil features

Ecological dynamics

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State and transition model

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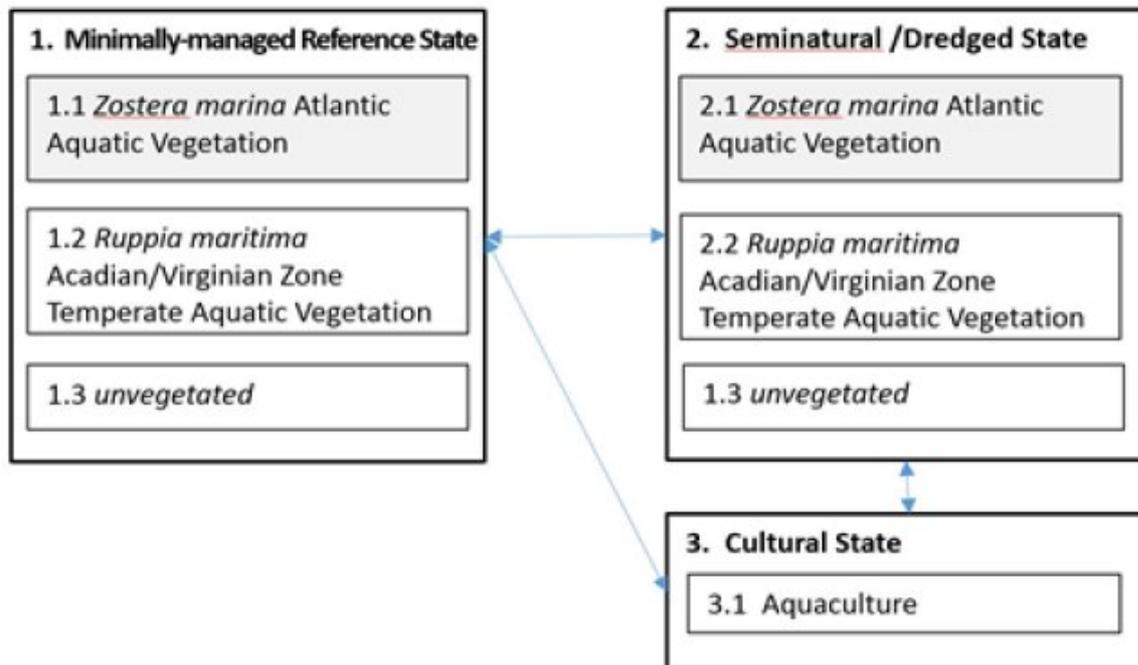


Figure 1. STM_144AY048_Subaqueous_Haline_Low_Energy_Basin

Transition	Drivers/practices
T1-2, T3-1	Dredging
T1-3, T2-3	Aquacultural practices
R2-1, R3-1	Fill and seagrass planting

Figure 2. STM_144AY048_Subaqueous_Haline_Low_Energy_Basin

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):**

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:**
