Chelmsford Street: Dune Walkway Profile

Site Assessments: February 21, 2024, July 25, 2024, and May 23, 2025

Structure Conditions and Observations	
Road to Beach	570 ft
Boardwalk Length	520 ft
End of boardwalk to beach	50 ft
Walkway Width	4.0 ft
Boardwalk Material	• Asphalt apron • Pressure treated wood connected by cable
Connected pathways**	2
Benches	1
Additional Features	Railings and viewing platform at crest of dune
**Human-made pathways connected to the municipal walkway*	

Ecological Conditions and Observations			
Community Types Present	**Rare Species**	**Other Native Species of interest**	**Species of Concern**
• Beachgrass grassland • Hudsonia maritime shrubland	• Wooly beach heather (*Hudsonia tomentosa*)[S2] • Tall wormwood (*Artermesia campestrus*)[S1]	• Beachgrass (*Ammophila breviligulata*) • Seaside goldenrod (*Solidago sempervirens*) • Northern Bayberry (*Myrica pennsylvanica*) • Beach plum (*Prunus maritima*)	• Asiatic bittersweet (*Celastrus orbiculatus*)[P] • Shrub honeysuckle (*Lonicera species*)[P] • Beach rose (*Rosa rugosa*)[W]
S1 = endangered in NH, S2 = threatened in NH, P = prohibited species in NH, W = NH invasive watch list			

Walkway Entrance

Landward Side

Seaward Side

Walkway Observations

Landward Side of Dune

- The initial portion of the walkway is flat and stable.
- A small section of the boardwalk near the dune crest appears to be shifting slightly to the right (Figure 1), resulting in an uneven and tilted walking surface.
- Dense vegetation is present at the walkway entrance, consisting primarily of crabgrass (*Digitaria* species) and other non-dune species, including invasive species (Figure 2).
- Some sparsely vegetated areas on the landward side of the dune.
- Nonnative pine trees are present on the site.

Figure 1: Boardwalk shifting near dune crest

Dune Crest

- There is a viewing platform that expands out from the walkway on the north and south sides. The walkway immediately leading up and just beyond the walk has railings on both sides of the walkway.
- The viewing platform contains one bench on the south side and two portable/temporary wicker chairs

Figure 2: Presence of invasive plant species

Seaward Side of Dune

- There are a few sections that have bowed or loose planks, which may pose a tripping hazard.
- Walkway buried by sand at the bottom toward the beach.
- There is one bench along the north side of the walkway, positioned parallel to it.
- The seaward side of the dune is well-vegetated (Figure 3).
- Earthstar mushrooms found at this site (likely *Astraeus hygrometricus)*.

Figure 3: Well vegetated seaward side of dune

Potential Action Items

- Reinforce or realign the boardwalk and stabilize to prevent further shifting.
- Install a Mobi Mat or similar ADA-compliant beach access mat at the end of the walkway to improve accessibility.

- Remove invasive species and revegetate the areas adjacent to the walkway near the road with native dune species.
- Seek positive confirmation of pine tree species.
- Revegetate and/or limit foot traffic in dune along the walkway to allow for reestablishment of sand dune vegetation.

Notes

The mushroom observed at this site is likely in the genus Astraeus – the false earthstars. They are often called the "Barometer Earthster" as the rays of the star open and close based on the humidity.

Figure 4: Earthstar mushrooms found at this site

Resources

- GoBotany – Native Plant Trust: https://gobotany.nativeplanttrust.org
- NH Comprehensive Invasive Plant list: https://www.agriculture.nh.gov/publications-forms/documents/nh-invasive-plant-list.pdf
- NH Guide to Upland Invasive Species: https://www.agriculture.nh.gov/publications-forms/documents/upland-invasive-species.pdf
- Planting Guide for Tidal Shoreline Erosion Management in New Hampshire (beach and dune sections): https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/tidal-erosion-planting-guide.pdf
- UNH Extension resources on invasive species: https://extension.unh.edu/natural-resources/forests-trees/invasive-species