



Maritime Pitch Pine Woodlands on Dunes

Community Code: CT2A1A1200

State Rank: S1



Concept: Scattered pitch pines on sand dunes, many with trunks at least partially buried. Open canopy, with bare ground and scattered shrubs, herbaceous plants, and patches of lichen.

Environmental Setting: Occurring as small patch communities on sand dunes on barrier beaches and other sandy shores, Maritime Pitch Pine Woodlands on Dunes tend to have linear occurrences on back dunes just beyond the reach of daily salt spray. The moderately stabilized back dunes, and thus the communities on them, are created and maintained by the movement of sand by wind; boundaries or an entire dune can change as sand is moved. During storms, back dunes receive windblown sand and salt that prune trees. The community appearance is open, with scattered, partially buried but living, pitch pine trees separated by bare sand with lichens and pine needles. On older, fairly stable dunes, a sedge lawn may cover the ground between trees. The pitch pine patches are in a mosaic of communities on dunes, with open dune communities in exposed areas, Maritime Juniper Woodland/Shrublands interdigitating in areas with more salt spray, denser deciduous shrublands and woodlands forming in stable moist swales, and open interdunal swales in exposed areas with regular active sand movement. The woodland communities are not in areas normally subject to saltwater flooding, which kills the pine trees.

Vegetation Description: Maritime Pitch Pine Woodland on Dunes is an open woodland community with short, scattered individuals of pitch pine (*Pinus rigida*) dominating the low tree layer. Pines that are very exposed may be short, with taller trees in more protected areas where grasses and sedges may cover the ground. Between the pines,



scattered beach heather (*Hudsonia tomentosa*) and bearberry (*Arctostaphylos uva-ursi*) form a patchy, very low shrub layer among areas of bare sand with lichens and earth star fungus.

Differentiating Occurrences: Maritime forests, woodlands, and shrublands on dunes grade into each other and into more open dry shrubby or shrubless dunes, as well as into wetland communities in interdunal swales. Differentiating between open-canopy Maritime Pitch Pine Woodland on Dunes and closed-canopy Pitch Pine - Oak Forests or Maritime Forests/Woodlands would be based on the canopy openness and dominance of pitch pine, and on the paucity of other species. Active sand movement would be much less in closed woodlands, which have little bare ground, more soil development, a litter layer composed of more than pine needles, and more species diversity. The pines having skirts is typical of the dune community; in more established woodlands, even if the pine trunks are partially buried, shaded lower branches are unlikely to remain alive. Related open communities include the Maritime Juniper Woodland/Shrubland, in which red cedar dominates with about 25-75% of the cover. Pitch pine and other widespread early successional shrubs and trees, such as red maple and black cherry, are usually present in lower abundances. Bare sand dominates Maritime Dune Communities that are only sparsely vegetated with very scattered patches of low shrubs, herbaceous plants, and grasses. Maritime Pitch Pine Woodland on Dunes occur in a complex of these and other barrier beach communities in a shifting mosaic as storm winds move sand, burying vegetation and restarting communities. Maritime Pitch Pine Woodland on Dunes intergrades and interdigitates with Maritime Juniper Woodland/Shrubland, Maritime Forest/Woodland (behind stable dunes in low protected interdunal moist areas), and Interdunal Swales. Occurrences of small patches within another community would be considered to be part of the variation of the other community. Areas of temporary stability allow succession to more mixed forests.

Associated Fauna: There are no animal species known to be restricted to maritime forests. The open pitch pine areas are particularly harsh and exposed, and support fewer animals than more closed communities. Generally, in more salt-influenced environments, fewer animals will be expected. As in all communities on peninsulas such as Cape Cod or on islands, the more remote occurrences have fewer species than those closer to the mainland sources. Moths, butterflies, and other insects of the southeastern oak-pine forest occur in maritime forests.

Public Access: Cape Cod National Seashore, Wellfleet; Sandy Neck Beach Conservation Area, Barnstable; Horseneck Beach State Reservation, Westport; Parker River National Wildlife Refuge, Newbury.

Threats: As with other communities on dunes, these communities are sensitive to disturbance and easily damaged even by foot traffic.

Management Needs:



USNVC/NatureServe:

Pinus rigida woodland alliance -- *Pinus rigida*/*Hudsonia tomentosa* Woodland [CEGL006117] *Pinus rigida* - *Quercus (coccinea, velutina)* Woodland Alliance -- *Pinus rigida* - *Quercus velutina*/*Hudsonia tomentosa* Woodland [CEGL006120].