Sandplain Heathland

Community Code: CT2B2B0000

State Rank: S1

Concept: An open, shrub-dominated, coastal community often in the zone receiving salt spray from storms, sharing many species with Sandplain Grasslands. Some heathlands have sparse clumps of plants with bare soil or lichen cover between the vascular plants.

Environmental Setting: Sandplain Heathlands are disturbance-dependent communities occurring on sandy/gravelly outwash plains and moraines near the coast. Plant cover in these nearly treeless shrublands ranges from nearly continuous to sparse with bare soil or lichen between clumps of plants. The rugged environment has extreme daily and seasonal temperature variations, nutrient-poor droughty soil, intense sunlight, and salt-laden winds. Although coastal heathlands are natural communities, until the late 19th century human activities increased their size and distribution with land clearing, grazing, and fires. Pre-European settlement occurrences were likely small patches in successional mosaics on drought-prone soils near the coast, where they were maintained by burning near Native American villages or by salt spray from coastal winds. Other occurrences may be maintained in frost pockets on outwash sandplains where unpredictable late season frosts inhibit growth of many species, including most trees.

Vegetation Description: Many of the dominant species in Sandplain Heathlands are low-growing woody shrubs, which if dominant are considered to be indicators of the community: black huckleberry (*Gaylussacia baccata*), bearberry (*Arctostaphylos uva-ursi*), and broom crowberry (*Corema conradii*). Other typical shrubs include lowbush blueberries (*Vaccinium angustifolium* and *V. pallidum*), bayberry (*Morella pensylvanica*), and scrub oak (*Quercus ilicifolia*). Less dominant but usual species include golden

heather (*Hudsonia ericoides*), chokeberry (*Aronia arbutifolia*), dwarf chinquapin oak (*Q. prinoides*), sweetfern (*Comptonia peregrina*), dewberry (*Rubus flagellaris*), little bluestem (*Schizachyrium scoparium* var. *scoparium*), and Pennsylvania sedge (*Carex pensylvanica*). The tall shrubland association particularly includes non-ericaceous shrubs such as beaked hazelnut (*Corylus cornuta*) and beach plum (*Prunus maritima* var. *maritima*). Many plants that are uncommon in Massachusetts occur in the Sandplain Heathlands, including sandplain flax (*Linum intercursum*), sandplain blue-eyed grass (*Sisyrinchium fuscatum*), eastern silvery aster (*Symphyotrichum concolor*), purple cudweed (*Gamochaeta purpurea*), butterfly weed (*Asclepias tuberosa*), and broom crowberry (*Corema conradii*).

Differentiating Occurrences: When bearberry and black huckleberry are dominant, they are considered to be indicators of Sandplain Heathlands. Sandplain Heathlands are in a continuum with openings in Pitch Pine - Scrub Oak Communities, Scrub Oak Shrublands, and maritime shrublands, woodlands, and forests. Their structure and species composition overlap with Maritime Dune Communities and Sandplain Grasslands. In mapping, as in defining, the edges are not always clear. Sandplain Heathlands and Sandplain Grasslands share about 70% of their dominant species: it is the proportion of the species and the resultant structure that separates the types. Sandplain Heathlands look shrubby and appear taller and have fewer vascular plant species than do grasslands. The communities are not distinct at some sites; in that case, the dominant one is named. Sandplain Heathlands are structurally similar to Maritime Dune Communities in that each has low shrub, herbaceous, and grassy growth, with patches of bare soil. Dune communities are on dunes and are often dominated by beach grass and beach heather, which occur less abundantly with more other species in Sandplain Heathlands. These communities may overlap along dune edges necessitating arbitrary assignment based on land form or the prevailing community type. Sandplain Heathlands and Maritime Shrubland Communities are shrublands; the Maritime Shrubland community is much denser, taller and more diverse. Maritime Juniper Woodland/Shrubland and Maritime Pitch Pine Woodland on Dunes are dominated by trees, although they may be scattered. Very small patches of any type within another community should be considered to be part of the variation of the main community. Sandplain Heathlands - Inland Variant are located inland at distances away from maritime influences. Ridgetop Heathlands are on bedrock.

Associated Fauna: Only a few bird species nest in Sandplain Heathlands, including Horned Lark (*Eremophila alpestris*), Savannah Sparrow (*Passerculus sandwichensis*), and Vesper Sparrow (*Pooecetes gramineus*). Short-eared Owls (*Asio flammeus*) are rare breeders in Massachusetts; one of their main food sources is the voles that live in heathlands. Birds of prey (or raptors) that may be seen hunting over the heathlands include Red-tailed Hawk (*Buteo jamaicensis*), American Kestrel (*Falco sparverius*), Merlin (*F. columbarius*), Peregrine Falcon (*F. peregrinus*), and Northern Harrier (*Circus cyaneus*). Other animals that can be found in heathlands include red-bellied snakes (*Storeria occipitomaculata*), meadow voles (*Microtus pennsylvanicus*), short-tailed shrews (*Blarina brevicauda*), and such common insects as monarchs

(*Danaus plexippus*) and pearl crescents (*Phyciodes tharos*). Several state-protected species of insects are also found in Sandplain Heathlands, including the chain-dotted geometer (*Cingilia catenaria*), the coastal heathland cutworm (*Abagrotis nefascia*), the barrens buckmoth (*Hemileuca maia*) and the purple tiger beetle (*Cicindela purpurea*). Before its extirpation from Massachusetts, the regal fritillary butterfly (*Speyeria idalia*) inhabited Sandplain Heathlands.

Public Access: Wasque Reservation (The Trustees of Reservations), Martha's Vineyard; Middle Moors (Nantucket Conservation Foundation), Nantucket; frost pockets in Myles Standish State Forest and Sly Ponds WMA, Plymouth.

Threats: The heathland community is considered to be vulnerable throughout its range. It has been estimated that about ninety per cent of coastal heathland in the northeastern United States has been lost since the middle of the nineteenth century, but other heathlands have been created by grazing and clearing. Reasons for this loss include suppression of fires, cessation of grazing by livestock in the affected areas, development of land, coastal erosion, and succession by trees and non-heathland shrubs. Excessive foot traffic and the use of off-road vehicles also threaten heathlands. Damage can be done by just one vehicle passing over the habitat; fifty passes of a vehicle will devegetate the surface. Prescribed burning and controlled grazing are being used to maintain remaining heathlands. Some exotic species such as black pine (*Pinus thunbergiana*) and Scotch broom (*Cytisus scoparius*) are issues. Fragmentation and development. Domestic pets and feral predators are problems for ground-nesting bird species, such as Short-eared Owl (*Asio flammeus*).

Management Needs: Selective tree removal, fire, and grazing are often required. Fire management plans should be produced and implemented to reintroduce fire. Remove exotics where a problem. Control foot and vehicular traffic.

USNVC/NatureServe: NVC System: Northern Atlantic Coastal Plain Heathland and Grassland (CES203.895) especially *Gaylussacia baccata - Vaccinium angustifolium - Arctostaphylos uva-ursi/Schizachyrium littorale* Dwarf-shrubland (CEGL006066, G3).