



Great Lakes/Coastal: Coastal dune/beach

Description

The Coastal dune/beach feature is generally represented by areas associated with Great Lakes shorelines that have sand, gravel or cobble substrates. These areas include lakeshore beaches and open dunes. Beach communities can be divided into three separate areas with distinct vegetative associations, the lower, middle and upper beaches. The lower beach is hard-packed and under the constant influence of waves. The middle beach is influenced by waves only during storms. The upper beach is usually dry and highly influenced by blowing sand. Coastal sand dunes are found immediately inland from the beach. They are created, maintained, and influenced by water and wind erosion and the deposition of blowing sand. Dune communities include foredunes, perched dunes, blow outs, barrier dunes, Great Lakes barrens, interdunal wetlands, and wooded dune and swale complexes. Vegetation changes significantly across dune areas and over time as dunes stabilize. Dominant plants and community structure vary depending on the degree of sand deposition, sand erosion, and distance from the lake.

General Condition of Feature

About 55% of the coastal dune or beach area in the Eastern Upper Peninsula is considered to be in fair or good condition and about 10% is considered to be in excellent condition. The remaining areas are considered degraded or very degraded. Coastal dunes and beaches include natural communities that are rare, uncommon, or imperiled in the State.

Associated Natural Communities

Cobble Beach
Great Lakes Barrens
Interdunal Wetland

Open Dunes
Sand/Gravel Beach
Wooded Dune and Swale Complex

Associated Species of Greatest Conservation Need

SNAILS

eastern flat-whorl (*Planogyra asteriscus*)
tapered vertigo (*Vertigo elatior*)
pleistocene catinella (*Catinella exile*)

INSECTS

Lake Huron locust (*Trimerotropis huroniana*)
a tiger beetle (*Cicindela hirticollis rhodensis*)
dune cutworm (*Euxoa aurulenta*)

REPTILES

northern ringneck snake (*Diadophis punctatus edwardsii*)
western fox snake (*Elaphe vulpina*)
eastern hognose snake (*Heterodon platirhinos*)
eastern massasauga (*Sistrurus catenatus catenatus*)

BIRDS

Bald Eagle (*Haliaeetus leucocephalus*)
Piping Plover (*Charadrius melodus*)
Killdeer (*Charadrius vociferus*)
Caspian Tern (*Sterna caspia*)
Common Tern (*Sterna hirundo*)
Common Nighthawk (*Chordeiles minor*)
Northern Parula (*Parula americana*)
Prairie Warbler (*Dendroica discolor*)
Savannah Sparrow (*Passerculus sandwichensis*)

MAMMALS

deer mouse (*Peromyscus maniculatus gracilis*)

Associated Threats

HABITAT CONVERSION

- Industrial, residential, and recreational development
- Incompatible natural resource management: Diking posed a threat in these systems historically, though it has declined recently.

CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Removal of non-timber flora: Beach grooming may alter vegetation community composition.
- Mining practices: Sand mining impacts these systems.

NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Non-consumptive recreation: Uncontrolled ATV and ORV use may impact emergent wetlands. Human foot traffic and pets may degrade coastal dune communities. Transport of watercraft through these areas may impact them.

BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Accumulation of zebra mussel (*Dreissena polymorpha*) shells may impact these systems. Exotic plant species may be present in dune communities.

MICHIGAN'S WILDLIFE ACTION PLAN
TERRESTRIAL SYSTEMS: EASTERN UPPER PENINSULA

Conservation Actions Needed [Threats addressed]

LAND & WATER PROTECTION

- Expand conservation easement programs [variety of threats]
- Support and expand conservation purchase of high quality occurrences [variety of threats]

LAND, WATER & SPECIES MANAGEMENT

- Institute invasive species monitoring, prevention and control programs. [Invasive plants and animals]
- Work with land managers to develop priorities for coastal dune restoration and management. [Incompatible natural resource management]
- Where possible, motorized vehicle trails should be located a minimum of 100 feet (and preferably more than 500 feet) from rivers, streams, lakes and other wetlands except at designated crossings. [Non-consumptive recreation]
- Support Landowner Incentive Programs to foster conservation on private land [variety of threats]

LAW & POLICY

- Work with municipalities to promote planning and zoning insuring adequate protection for coastal dune systems. [Industrial, residential and recreational development]
- Develop and enforce regulations to curtail recreational activities that cause significant damage. [Non-consumptive recreation]

EDUCATION & AWARENESS

- Create awareness in the general public of the value of coastal dunes and natural vegetation communities to wildlife. [Removal of non-timber flora]

RECREATION

- Promote responsible ATV and ORV use. [Non-consumptive recreation]

LAND AND WATER PROTECTION

- Promote protection of significant coastal dune/beaches through purchase, easement or other economic incentives. [Industrial, residential and recreational development]

Research and Survey Needs

- Identify invasive species that may degrade the value of coastal beach/dunes for wildlife. Develop techniques to control invasive species.
- Identify and quantify sources of disturbance. How does recreational use impact dune and beach communities? What are the natural disturbance factors and what is their periodicity?
- Identify the characteristics of dune and beach systems that provide benefits to wildlife and which species may be affected by changes in these characteristics.
- Assess the impact of beach stabilization practices, such as plantings, on wildlife habitat quality of dune and beach communities.
- Evaluate the impact of sand mining on the value to wildlife of dune and beach communities.
- A better understanding is needed of the dynamic nature of the shoreline zone.
- Identify and evaluate restoration activities that are currently underway in dune and beach systems.

Monitoring

- Track the density and distribution of development in dune and beach systems with attention to differences between areas protected with critical dune designations and unprotected areas.
- Track the amount and density of coastal beaches and dunes.