Interdunal Wetland (Global Rank G2?; State Rank S1)

Overview: Distribution, Abundance, Environmental Setting, Ecological Processes

Interdunal Wetland is an extremely rare natural community in Wisconsin, where it is restricted to a small number of sites on Great Lakes coasts. By definition, these communities are associated with and dependent on Great Lakes dunes in which wind, water, or currents have created hollows between the dunes or beach ridges that intersect the water table. Such sites are colonized by a distinctive assemblage of wetland plants, which include habitat specialists of high conservation significance because of their rarity, habitat needs, or limited distribution.

All Wisconsin occurrences are small, seldom encompassing more than 10 acres. Great Lakes shoreline environments are extremely dynamic, and interdunal wetlands will shift in size, shape, and location as the dunes themselves move. As long as the shoreline processes of sand movement, deposition, and erosion remain functional, new interdunal wetlands will be created as others are destroyed.

On Lake Superior, Interdunal Wetlands are associated with sandspits and baymouth bars, which may support low dunes of less than one to several meters in height. The configurations of these wetlands may change radically depending on Lake Superior water levels, and the frequency, severity, and approach direction of major storms. There is at least one Lake Superior site where human excavations on a sandspit have created an “artificial” Interdunal Wetland, leaving behind a wet “borrow pit.” The conservation significance of this site is interesting as it does support at least one rare plant species but also problematic as its long-term viability would depend on periodic, carefully planned and timed disturbance efforts by site managers.

On Lake Michigan, this wetland community is found at only a few locations: within the interior portions of coastal dunefields (such as those at Kohler-Andrae State Park) or as small parts of coastal ridge-and-swale systems.

Community Description: Composition and Structure

Characteristic herbs include Arctic rush (Juncus arcticus), twig-rush (Cladium mariscoides), little green sedge (Carex viridula), blue-joint grass (Calamagrostis canadensis), seven-angle pipewort (Eriocaulon aquaticum), water horsetail (Equisetum fluviatile), and horned bladderwort (Utricularia cornuta).

Shrub cover is very low (less than 10%) in Wisconsin occurrences but may include dogwoods (Cornus spp.), willows (Salix spp.), ninebark (Physocarpus opulifolius), Kalm’s St. John’s-wort (Hypericum kalmianum), and shrubby cinquefoil (Pentaphylloides floribunda).

Locations of Interdunal Wetland in Wisconsin. The deeper hues shading the ecological landscape polygons indicate geographic areas of greatest abundance. An absence of color indicates that the community has not (yet) been documented in that ecological landscape. The dots indicate locations where a significant occurrence of this community is present, has been documented, and the data incorporated into the Natural Heritage Inventory database.

Among the documented rarities are marsh grass-of-Parnassus (Parnassia palustris), slender bog arrow-grass (Tri- glochin palustris), Robbins’ spike-rush (Eleocharis robbinsii), and northeastern bladderwort (Utricularia resupinata). Other sedges, rushes, and grasses are usually present, along with marsh and beach plants such as water-shield (Brasenia schreberi), silver-weed (Argentina anserina), and several of the false foxgloves (Agalinis spp.).

Few data are available on the use of these wetlands by animals, but migratory birds, especially shorebirds, use these sites as well as the adjacent beach and dune habitats during their spring and fall migrations.

Conservation and Management Considerations

Conservation considerations are dependent first and foremost on maintenance of the shoreline processes that create and maintain Great Lakes beach and dune ecosystems. Disruption of the longshore movement of sand, shoreline “hardening” by the construction of seawalls, sand mining and outright destruction of the dunes themselves, dune stabilization, heavy and incompatible recreational uses, and
residential development and construction of associated infrastructure can all impact the physical environment and associated ecological processes upon which this somewhat ephemeral and fragile natural community depends. Invasive plants known to infest some occurrences of this community include purple loosestrife (*Lythrum salicaria*) and common reed (*Phragmites australis*).

Wisconsin's Interdunal Wetland communities could use better descriptive information as the type had been lumped with more widespread wetland types until quite recently. Sites selected as conservation projects need to be large enough to accommodate the dynamic nature of the coastal beach and dune ecosystems and permit recovery from periodic natural disturbances.

**Addtional Information**

For information on similar natural communities, see the descriptions of Great Lakes Dune, Great Lakes Beach, Inland Beach, and Emergent Marsh. Also see the brief description of Great Lakes Ridge and Swale Complex, a mosaic of natural communities restricted to Great Lakes shorelines.

In the U.S. National Vegetation Classification, Lake Michigan occurrences are analogous to CEGL005105 Interdunal Wetland (Shrubby-cinquefoil / Twig-rush – Baltic Rush – (Limestone Beaksedge) Herbaceous Vegetation (Faber-Langendoen 2001). On Lake Superior, however, the better fit is CEGL005115 *Calamagrostis canadensis* – *Carex viridula* – *Cladium mariscoides* - *Lobelia kalmii* Herbaceous Vegetation (no common name was given for this association).


For a list of terms used, please visit the **Glossary.**

For a reference list, please see the **Literature Cited.**