

**Habitats of note:** Great Lakes Coastal Wetlands.

**Species of Note:** Common Tern, Black Tern, Caspian Tern, Common Loon, American Bittern, Least Bittern, Black-crowned Night Heron, Yellow Rail, Northern Harrier, Osprey, Alga and Hill's Pond Weed, Flattened Rush, Moor Rush, Various Mussels and Snails, Breeding Fish habitat.

**Resources for finding Important Habitat and Species:**

Great Lakes Wetland Monitoring Program: Contains Index of Biological Integrity (a rating of the quality of the wetland). Also Includes Birds, Amphibian and Fish surveys for some wetlands. Bird surveys are sometimes incomplete. Also includes polygon map of all coastal wetlands. Requires login and request to get information. <http://www.greatlakeswetlands.org/Home.vbhtml>

Michigan Natural Features Inventory – Rare Species Explorer. Explore, but county, threatened and endangered species occurrences at the county level. Can request from MNFI more specifics for research purposes. <https://mnfi.anr.msu.edu/explorer/search.cfm>

US Fish and Wildlife - Additional Bird Surveys including Mid-Winter Waterfowl. This is one of the few sources for winter use of the straits area by waterfowl. Sometime the data does not capture the early winter use as the straits are frozen over by the time of the survey. Each winter around 5,000-10,000 Redhead use the straits as a wintering ground until ice over. [https://migbirdapps.fws.gov/mbdc/databases/db\\_selection.html](https://migbirdapps.fws.gov/mbdc/databases/db_selection.html)

Audubon Christmas Bird Count – A count takes place in the straits area as well as the Cedarville Area. Sometimes the straits area counts captures the large number of Redheads. <http://netapp.audubon.org/cbcobservation/>

Michigan Breeding Bird Atlas – Data is also incorporated into MNFI databases, but some of the data in this atlas is a bit more specific and gives accounts of the species and talks over concerning trends, such as species decline.

Audubon Important Bird Area (IBA). A map of Audubon designated important bird areas, and species that triggered the designation. No legal protections come with this designation, but it can be used. <http://www.audubon.org/important-bird-areas>

Attached are a 2 papers on Fish Assemblages and Biodiversity of some Les Cheneaux Area Wetlands:

1. *Habitat and Human Influences on Larval Fish Assemblages in Northern Lake Huron Coastal Marsh Bays*
2. *Biodiversity in protected coastal wetlands along the west coast of Lake Huron*

## **Ecosystem Services and Threats:**

Great Lakes Environmental Assessment and Mapping Project: A map of stressors, human benefits. Human benefits begins to touch on ecosystem services that are quantifiable.

<http://www.greatlakesmapping.org/home>

A Valuation Of Ecological Services In The Great Lakes Basin Ecosystem to Sustain Healthy Communities and a Dynamic Economy. A white paper from Ontario McMaster University. I can not attest to the papers accuracy or reliability. <http://www.eng.mcmaster.ca/civil/facultypages/krantz2.pdf>

A need for Great Lakes Ecosystem Services evaluation:

<http://www.sciencedirect.com/science/article/pii/S0380133017300412>

(I do not have access to this article, but you can read the abstract which details why this is a complicated issue)

Jobs, Economy and the Great Lakes – A MI Sea Grant Report on how much economic activity around jobs is generated in the Great Lakes. The following website lists a number of the reports from that study, as well as referencing a few additional reports. <http://www.miseagrant.umich.edu/explore/coastal-communities/economic-vitality-and-the-great-lakes/>

A review of selected ecosystem services provided by coastal wetlands of the Laurentian Great Lakes: See attached paper. A good overview of services.

3. *A review of selected ecosystem services provided by coastal wetlands of the Laurentian Great Lakes*