



Lake Huron Grasshopper



Photo: © Allan Harris

Scientific name

Trimerotropis huroniana

Taxon

Arthropods

COSEWIC Status

Threatened

Canadian range

Ontario

Reason for Designation

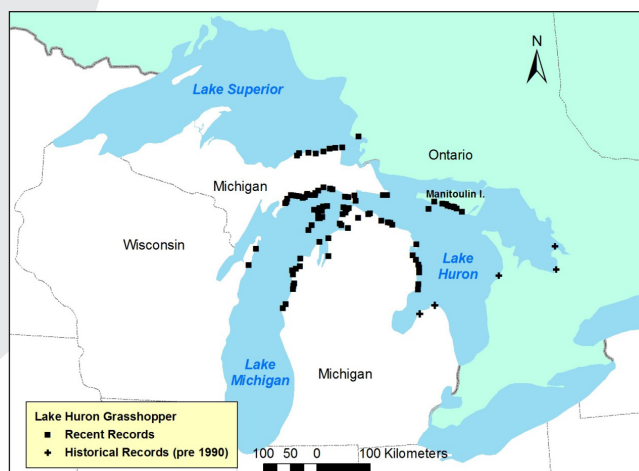
This globally rare grasshopper is endemic to the Great Lakes region of Ontario, Michigan, and Wisconsin where it is restricted to dunes along the shores of lakes Huron, Michigan, and Superior. In Canada, it is known from 11 dune sites: one location on the east shore of Lake Superior, and seven on Lake Huron at the south shore of Manitoulin Island and Great Duck Island. Formerly, it occurred at three additional sites on Lake Huron but these subpopulations appear to have become extirpated in the 1990s, likely as a result of residential and commercial development combined with intensive recreational use which damaged much of the dune habitat. While recreational use by pedestrians and off-road vehicles continue to threaten some dunes, other sites have undergone recent improvements under dune stewardship programs. Additional threats to dune environments include invasive plants and changes in lake levels related to climate change, natural cycles, or lake level management.

Wildlife Species Description and Significance

Lake Huron Grasshopper is silver-grey to brownish with variable speckles and colours to blend in with its sandy habitat. In flight, the hind wings are exposed to show clear or pale yellow areas at the base, a black band across the middle, and clear or smoky tips. The females (29 to 40 mm) are larger than the males (24 to 30 mm). It is one of a few species endemic to the Laurentian Great Lakes area.

Distribution

Lake Huron Grasshopper is endemic to the Great Lakes region of Ontario, Wisconsin and Michigan. The species is found exclusively on dunes along the shores of lakes Huron, Michigan and Superior. In Canada, it occurs at 11 dune sites: one location on the east shore of Lake Superior, and seven locations on Lake Huron at the south shore of Manitoulin Island and Great Duck Island. Historically it was also found at Giant's Tomb Island and Wasaga Beach in Georgian Bay, and at Sauble Beach (Southampton) on the east shore of Lake Huron. The species is now considered extirpated from these sites.



Global distribution map of Lake Huron Grasshopper (*Trimerotropis huroniana*) showing present and historical occurrences.

Habitat

Great Lakes dunes cover a total area of less than 1800 ha in Canada including 492 ha on Lake Huron and 100 ha on Lake Superior. Dunes occur on shorelines where there is plentiful sand in glacial

deposits and at river mouths. Exposure to wind and waves is essential to maintain erosion and deposition of sand, and to prevent forest succession. Preferred habitat of Lake Huron Grasshopper is the foredune, a low ridge closest to the lake with open bare sand and scattered grasses.

Biology

In late summer, male Lake Huron Grasshoppers attract females by stridulating (producing trills by rubbing the hind leg on the forewing) and conducting display flights while flashing their wings and producing a crackling sound. After mating, females lay clusters of eggs in the sand and the nymphs emerge the following spring. Nymphs pass through five instars before maturing into adults in late July or August. Marram Grass, Tall Wormwood, and Long-leaved Reed Grass are the preferred foods of nymphs and adults.

Photo: © Allan Harris



Female Lake Huron Grasshopper with two males

Population Sizes and Trends

Population sizes and trends are unknown. All known extant Canadian subpopulations were discovered since 2002 and no subpopulation estimates or monitoring data are available. Lake Huron Grasshoppers appear to have become extirpated from three historical sites in Canada (Giant's Tomb Island, Wasaga Beach, and Sauble Beach) between the early 1990s and the mid-1990s.

Threats and Limiting Factors

Residential and commercial development and intensive recreational use destroyed or damaged much of the dune habitat, likely causing the extirpation of Lake Huron Grasshopper at historical sites. Recreational use by pedestrians and off-road vehicles significantly reduces subpopulations and

continues to threaten some dunes by damaging vegetation and causing dune blowouts (depressions caused by erosion of sand by wind). Invasive plants, especially Common Reed and Spotted Knapweed can replace preferred food plants and alter dune processes. Changes in lake levels related to climate change, natural cycles, or lake level management have the potential to reduce the amount of dune habitat. Some sites have undergone recent improvements under dune stewardship programs.

Protection, Status and Ranks

Lake Huron Grasshopper is not protected under any legislation or regulations in Canada. It listed as Threatened in Michigan and Endangered in Wisconsin but is not listed under the US *Endangered Species Act*. It is not listed under the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES). Pancake Bay on Lake Superior is a provincial park, but other habitat is under municipal and private ownership. Lake Huron Grasshopper occurs at 10 sites with Pitcher's Thistle (Threatened in Ontario and Special Concern nationally) where dunes receive some protection under Ontario's *Endangered Species Act*.

The Global Rank is G2G3 (Imperilled to Vulnerable). The Subnational Rank in Ontario was adjusted to S2 (Imperilled) from S1 following the discovery of new subpopulations in 2014. It is ranked as S1 (Critically Imperilled) in Wisconsin and S2S3 (Vulnerable) in Michigan.

Source: COSEWIC. 2015. COSEWIC assessment and status report on the Lake Huron Grasshopper *Trimerotropis huroniana* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 32 pp.

For more information, please visit www.sararegistry.gc.ca.

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