Manitoba Oakworm Moth

Photo: © Don Henne

Scientific name
Anisota manitobensis

Taxon
Arthropods

COSEWIC status
Special Concern

Canadian range
Manitoba

Reason for designation

This large moth has a small global distribution, most of which is in Canada, and restricted to a small area in southern Manitoba and the adjacent United States. Localized population irruptions occurred irregularly through the 1900s, but their frequency declined and the last one was in 1997; no individuals have been detected since 2000. Threats are primarily related to declines of Bur Oak, its larval host plant. Bur Oak is susceptible to secondary diseases, especially when compounded with anthropogenic and environmental stress. Other threats include fire suppression, deer browsing and subsequent invasive plant incursion, and insecticides targeting pest moths, all of which contribute cumulatively to ongoing decline in Bur Oak health and subsequent loss or reduction of habitat. Bur Oak woodlands are fragmented throughout their range in Manitoba, and subpopulations of this moth are perhaps even more fragmented because of their limited dispersal ability, and its larval preference for younger Bur Oak. This species may actually be Threatened, but data are currently insufficient to assess whether it meets thresholds for status criteria.

Wildlife Species Description and Significance

Manitoba Oakworm Moth (Anisota manitobensis) is a medium-sized moth (forewing length 19-30 mm) in the family Saturniidae (silk worm moths). There are four life stages and the species grows through complete metamorphosis. Adults are brownish-orange, and females are typically pinker than darker males. The flattened, ovate eggs are smooth and yellow, turning to brownish with age. Larvae are typically dark brown to black with paler stripes (tending to pink in later instars) with spines and thoracic horns. Pupae are brown and approximately 3 cm long.

Distribution

The known global and Canadian range of Manitoba Oakworm Moth is restricted to southern Manitoba and extreme northern North Dakota and Minnesota. The majority of the global range is in Manitoba where it has been recorded from approximately 25 sites as far north as Riding Mountain National Park. The two sites in adjacent North Dakota and Minnesota are approximately 40 km and 65 km respectively from the nearest known Canadian sites. Its Canadian range is approximately 43,000 km2, including historical sites that may still be extant.

Canadian records of Manitoba Oakworm Moth.

Source: COSEWIC. 2019. COSEWIC assessment and status report on the Manitoba Oakworm Moth Anisota manitobensis in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 49 pp.

Habitat

Manitoba Oakworm Moth is restricted to habitats where its larval food plant, Bur Oak (Quercus macrocarpa), is found. Currently, oak savannas and woodlands along river valleys and the Manitoba Escarpment comprise the most abundant potential habitat for this species. Manitoba Oakworm Moth was most recently found in riverine oak woodlands in Winnipeg and but also on smaller, younger oak trees in full sunlight along roadsides and rights-of-way near Fullers.

Biology

The biology of Manitoba Oakworm Moth is poorly known. Eggs of Manitoba Oakworm Moth are laid in clusters on leaves of Bur Oak in June to mid-summer. When first hatched, young caterpillars are gregarious but are less so in later instars. This species overwinters for at least eight months as a pupa in the soil. The adults have been observed from early June to late July, and mainly fly during the day.

Population Sizes and Trends

Population sizes and trends are poorly understood for Manitoba Oakworm Moth. Like many oakworm moth species, it may have periodic outbreaks with low numbers in intervening years.

Threats and Limiting Factors

Threats to Manitoba Oakworm Moth and its habitat are poorly understood. Non-target impacts from spraying of insecticide is a potential threat to this species, but likely limited to the city of Winnipeg. Residential and other urban development resulted in the loss of historical habitat and may continue to be a localized threat, as with roads and transmission line development. Soil compaction from recreational and other activities may affect oak health and indirectly impact Manitoba Oakworm Moths in Winnipeg and other urban areas. More broadly, fire suppression may reduce the quality of oak savanna habitat for Manitoba Oakworm Moth over the long term.

Manitoba Oakworm Moth is naturally limited by the abundance and distribution of Bur Oak in southern Manitoba, which has declined from historical abundance largely due to logging for wood and forest clearing for residential and other development in the 1800s and early 1900s. Adult moths do not have functional mouthparts and do not feed, instead relying on fat stored during larval development. Female moths are weak fliers, and do not likely disperse far, mainly because they are heavy with eggs. Dense vegetation may limit pheromone dispersal.

Photo: © Don Henne

Protection, Status and Ranks

Manitoba Oakworm Moth and its habitat have no direct legal protection in Canada or the United States. The species is globally ranked as Imperilled (G2). In Canada the species is ranked as Imperiled (N2) nationally and in Manitoba (S2). In the United States it is ranked Historical (NH) nationally and at the state level in Minnesota and North Dakota (SH).

Source: COSEWIC. 2019. COSEWIC assessment and status report on the Manitoba Oakworm Moth Anisota manitobensis in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 49 pp.

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