

Species Status Assessment

Common Name: Well-marked cutworm **Date Updated:** December 18, 2023

Scientific Name: *Abagrotis orbis*

Updated By: Hollie Shaw

(formerly *Abagrotis barnesi*)

Class: Insecta

Family: Noctuidae

Species Synopsis (a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):

The well-marked cutworm was reclassified from *Abagrotis barnesi* to *A. orbis* (Lafontaine and Schmidt 2010). Information regarding this moth is unknown/incomplete. The well-marked cutworm is primarily found in southwestern North America and extends eastward across the plains. There are disjunct populations in the southern Great Lakes areas in dune habitats (University of Alberta 2023). In Canada, this species is found in the southern interior of British Columbia and southern portions of Alberta and Saskatchewan (University of Alberta 2023) and Ontario (NatureServe 2023). There are two known location in New York near Lake Ontario at Black Pond Wildlife Management Area and Sandy Island State Park (NYNHP 2023a).

I. Status

a. Current legal protected Status

i. **Federal:** not listed **Candidate:** No

ii. **New York:** not listed; HPSGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S1 **Tracked by NYNHP?:** Yes

Other Ranks:

-IUCN Red List: not listed

-Northeast Regional SGCN: not listed

Status Discussion:

NatureServe (2023) states that the global status needs review.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Stable	Stable	Before 2002	Not listed	No
Northeastern US	Yes	Stable	Stable	2013-2019	Not listed	No
New York	Yes	Unknown	Unknown	2013-2019	Not listed, S1, SGCN	Yes
Connecticut	No	-	-			-
Massachusetts	No	-	-			-
New Jersey	No	-	-			-
Pennsylvania	No	-	-			-
Vermont	No	-	-			-
Ontario	Yes	Unknown	Unknown	unknown	S2S3	No
Quebec	No	-	-			-

Column options

Present?: Yes; No; Unknown; No data; (blank) or Choose an Item

Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item

SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

This species is not monitored and there are no regular surveys. The last known surveys in New York were from 2013 to 2019 at State Parks (NYNHP 2023a).

Trends Discussion *(insert map of North American/regional distribution and status):*

Trends for well-marked cutworm are unknown due to low survey effort. They are only known to occur in dune habitats along Lake Ontario in New York and in the northeastern US. It was found during moth surveys at state parks in 2017. The site at the NYS DEC Wildlife Management Area has not been surveyed since 1992 (NYNHP 2023a).

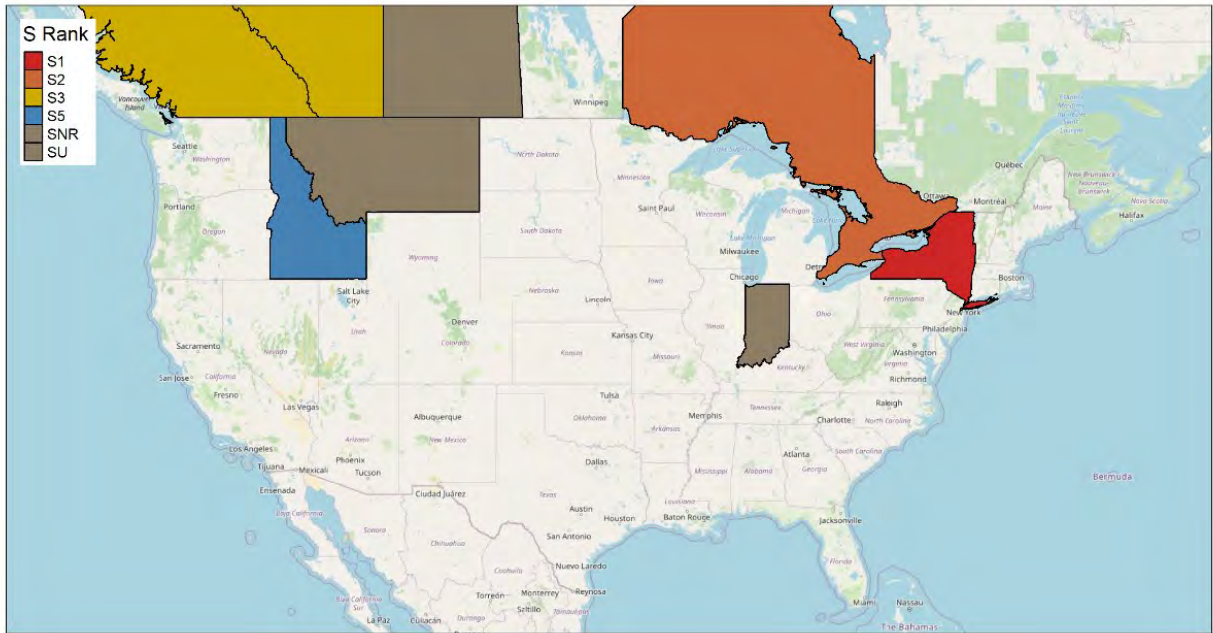


Figure 1. *Abagrotis orbis* distribution and/or status (Distribution may not be complete. NatureServe 2023)

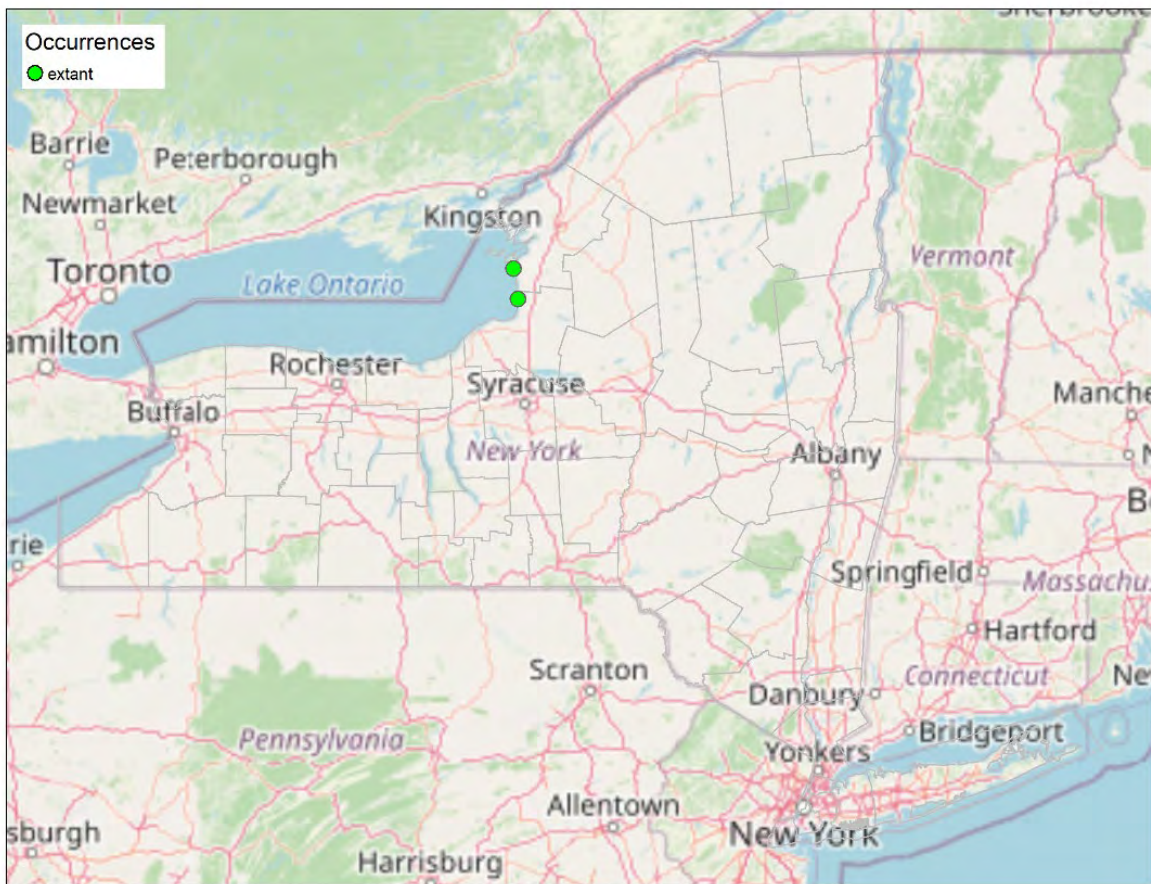


Figure 2. *Abagrotis orbis* locations in New York

III. New York Rarity (provide map, numbers, and percent of state occupied)

Years	# of Records	# Counties	% of State
Pre-2000	1	1	<1
2000- 2023	1	1	<1

Table 1. Records of *Abagrotis orbis* in New York.

Details of historic and current occurrence:

Two specimens were collected at a site on state land in 1992 which may have been the only survey date. The status at this site is unknown. Lepidoptera surveys on State Park lands between 2013 and 2019 resulted in the at least one moth captured in 2017 (NYNHP 2023a).

New York’s Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Disjunct	2500-3000 km

Column options

Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item

Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type (from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):

1. Great Lake Dune and Swale

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Pollinator Species?	Habitat/Community Trend	Time frame of Decline/Increase
Yes	No	Choose an item.	Declining	“several decades” (NYNHP 2023b)

Column options

Habitat Specialist, Indicator Species and Pollinator Species: Yes; No; Unknown; (blank) or Choose an item

Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Well-marked cutworm has been found in Great Lakes dunes where there are less than twenty locations statewide, and probably not many more historically given that its range is restricted to the eastern shore of Lake Ontario, Lake Erie, and Lake Champlain. Several dunes are protected on public land or private conservation land. The current trend of this natural community is declining slightly as a result of shoreline development, invasive species, and recreational overuse (NYNHP 2023b).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/Catadromous?
Yes	-	-	Yes	Yes	-

Column options

First 5 fields: Yes; No; Unknown; (blank) or Choose an item

Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion (include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):

Little is known about the life history of well-marked cutworm in New York. Adults were captured in late-September in Great Lakes dunes habitat (NYNHP 2023a). The larval hosts are unknown in New York.

In the western part of its range, the adults are found in the fall. Larvae eat flowers of fruit trees and are known as pests in some areas. Larval hosts include trees and plants in the following families: Rosaceae, Salicaceae, and Sapindaceae (University of Alberta 2023).

VI. Threats (from NY 2015 SWAP or newly described):

Threats specific to this species have not been identified in the literature. General threats identified to affect moths include habitat loss and degradation caused by development; habitat fragmentation; alteration of natural fire regimes; natural succession of shrubland, woodland, and barrens habitats; and land clearing. Past use of chemical biocides to control spongy moth and other pest insects continues to kill native Lepidoptera (Schweitzer 2004). Introduced parasitoid flies have been known to negatively affect native Lepidoptera (Boettner et al. 2000). Other threats may include invasive species, light pollution affecting reproductive success, over grazing of host plants by wild deer populations, and off-road vehicle use (NYSDEC 2005).

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
6. Human Intrusions & Disturbance	6.1 Recreational Activities	6.1.1 Motor vehicles (ATVs)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
7. Natural System Modifications	7.1 Fire & Fire Suppression	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
7. Natural System Modifications	7.3 Other Ecosystem Modifications	7.3.2 Vegetation succession	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
8. Invasive & Other Problematic Species	8.2 Problematic Native Plants & Animals	8.2.2 Increased grazing by vertebrates	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.6 Excess Energy	9.6.1 Light pollution	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 2. Threats to *Abagrotis orbis*.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: No: Unknown:

If yes, describe mechanism and whether adequate to protect species/habitat:

Both sites are on protected public land.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Management/conservation actions have not been identified for this species. *A. orbis* has been trapped in grape fields in south-central Washington and south-central British Columbia using (Z)-7-Tetradecenyl acetate and (Z)-11-hexadecenyl acetate, a sex attractant, from mid-September to early October (Landolt et al. 2012).

Action Category	Action	Description
A.1 Direct Habitat Management	A.1.0.0.0 Direct Habitat Management	Site Management
A.2 Direct Species Management	A.2.0.0.0 Direct Species Management	Invasive/problematic species control
B.3 Outreach	B.3.0.0.0 Outreach	Awareness and Communications
C.6 Design and Plan Conservation	C.6.0.0.0 Design and Plan Conservation	Site/Area Protection
C.6 Design and Plan Conservation	C.6.0.0.0 Design and Plan Conservation	Resource/Habitat Protection
C.7 Legislative and Regulatory Framework or Tools	C.7.0.0.0 Legislative and Regulatory Framework or Tools	Policies and Regulations

Table 3. Recommended conservation actions for *Abagrotis orbis*.

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for moths.

Easement acquisition:

_____ Where appropriate, acquire easements to promote moth protection and conservation.

Fact sheet:

_____ Create fact sheets covering moths.

Habitat management:

_____ Determine best management regime for moth species, including fire and other forms of management.

Habitat monitoring:

_____ Develop standardized measures of habitat parameters for each species of listed moth.

_____ Investigate threats to food and host plants.

_____ Monitor land development projects.

Habitat research:

_____ Examine role of light pollution as threat to moths.

_____ Determine host/ food plant.

Life history research:

_____ Investigate the metapopulation dynamics of those species which warrant it.

_____ Examine role of introduced parasites and predators in threats to moths.

Other action:

_____ Develop standard definition of what is needed for "viable" populations of moths.

_____ Research the role of pesticide use in threats to moths.

Population monitoring:

_____ Inventory of species within historical range.

_____ Develop standardized survey protocols for moths.

Private fee acquisition:

_____ Where appropriate, encourage/assist private entities to acquire land for moth protection and conservation.

State fee acquisition:

_____ Where appropriate, acquire land essential to moth protection and conservation.

State land unit management plan:

_____ Incorporate needs of moths into state land management plans.

VII. References

- Boettner, G.H., J.S. Elkington, and C.J. Boettner. 2000. Impacts of an introduced generalist parasitoid on three native species of saturniid moths. *Conservation Biology* 14: 1798–1806
- Ferdinand, Shawn. 2013. SWAP 2015 Species Status Assessment for *Abagrotis orbis*. Prepared on March 12, 2013. Revised by Samantha Hoff on February 4, 2014.
- Forbes, William T. M. 1954. Lepidoptera of New York and neighboring states part III. Cornell University Experiment Station Memoir 329.
- Lafontaine, J.D. 1998. Noctuoidea, Noctuidae. In Dominick, R.B. et al. The moths of America North of Mexico. Fascicle 27.3. The Wedge Entomological Research Foundation . 348 pp.
- Lafontaine, J.D., and B.C. Schmidt. 2010. Annotated check list of the Noctuoidea (Insecta, Lepidoptera) of North America north of Mexico. *Zoo Keys* 40: 1-239.
- Landolt, P.J., D.T. Lowery, L.C. Wright, C. Smithhisler, C. Gúedot, and D.G. James. 2010. Trap response of cutworm moths (*Abagrotis orbis*) to a sex-attractant lure in grape vineyards. *The Canadian Entomologist* 142: 135-142.
- NatureServe. 2023. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <<http://www.natureserve.org/explorer>>. Accessed December 12, 2023.

New York State Department of Environmental Conservation. 2005. New York State Comprehensive Wildlife Conservation Strategy. <http://www.dec.ny.gov/index.html>.

New York Natural Heritage Program. 2023a. Element Occurrence Database. State University of New York College of Environmental Science and Forestry, Albany, NY.

New York Natural Heritage Program. 2023b. Online Conservation Guide for *Great Lakes dunes*. Available from: <https://guides.nynhp.org/great-lakes-dunes/>. Accessed December 13, 2023.

North American Moth Photographers Group. 2012. Mississippi Entomological Museum at Mississippi State University, MS. <http://mothphotographersgroup.msstate.edu/MainMenu.shtml>. Accessed 11 March 2013.

Northeast Fish and Wildlife Diversity. 2023. Regional Species of Greatest Conservation Need (2023). <https://northeastwildlifediversity.org/rsgcn>. Accessed December 12, 2023.

Schweitzer, D.F. 2004. Gypsy Moth (*Lymantria dispar*): Impacts and Options for Biodiversity-Oriented Land Managers. NatureServe: Arlington, Virginia. 59 pp.

University of Alberta E.H. Strickland Entomological Museum. 2023. Species Details – *Abagrotis orbis*. <https://search.museums.ualberta.ca/q/2-3709>. Accessed December 12, 2023.

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