Species Status Assessment

Common Name: Jair underwing **Date Updated:** January 24, 2024

Scientific Name: *Catocala jair* **Updated By:** Hollie Shaw

Class: Insecta

Family: Erebidae

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

Jair underwing has a spotty distribution throughout its range from Long Island, New York south to Florida and west Texas and Oklahoma. It generally found in xeric habitats such as oak savannahs, pine plains and pine barrens. Many of these habitats are in decline. The larval foodplant are various oaks (Schweitzer et al. 2018, NYNHP 2024b). It is not known to occur in any other states or provinces bordering New York except for New Jersey where it was last documented in the 1990s (Schweitzer et al. 2018) and there are no reports on iNaturalist (2024).

Jair underwing has distinctive phenotypes. Specimens from most of Florida and southeast Georgia are lighter than those from other parts of its range (Schweitzer et al. 2018). NatureServe (2024) has provisionally recognized two subspecies, one from peninsular Florida and Catocala jair ssp 2 (New York to Texas) that have not been formally recognized or named at this time.

I. Status

a. Current legal protected Status

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

ii. **New York:** Special Concern; SGCN

b. Natural Heritage Program

i. **Global:** G3G4

ii. **New York:** S1S2 **Tracked by NYNHP?:** yes

Other Ranks:

-IUCN Red List: not listed

-Northeast Regional SGCN: not listed

Status Discussion:

NatureServe (2024) has provisionally recognized two subspecies, one from peninsular Florida and Catocala jair ssp. 2 (New York to Texas) that have not been formally recognized or named at this time.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	Unknown		G3G4	-
Northeastern US	Yes	-	-		Not listed	No
New York	Yes	Stable	Stable		Special Concern, SGCN	Yes
Connecticut	No	-	-			-
Massachusetts	No	-	-			-
New Jersey	Yes	Declining	Declining	1990s-2018	Not listed	No
Pennsylvania	No	-	-			-
Vermont	No	-	-			
Ontario	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):*

There are no monitoring activities or regular surveys for this species.

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

It's difficult to determine the trends for this species although it is assumed that the population and distribution are stable. It has been documented at four locations in the New York Natural Heritage (NYNHP) database with the most recent observations ranging from 1995 to 2017 (NYNHP 2024a). Most observations are from the Long Island Pine Barrens and Promised Land (iNaturalist 2024 and NYNHP 2024a).

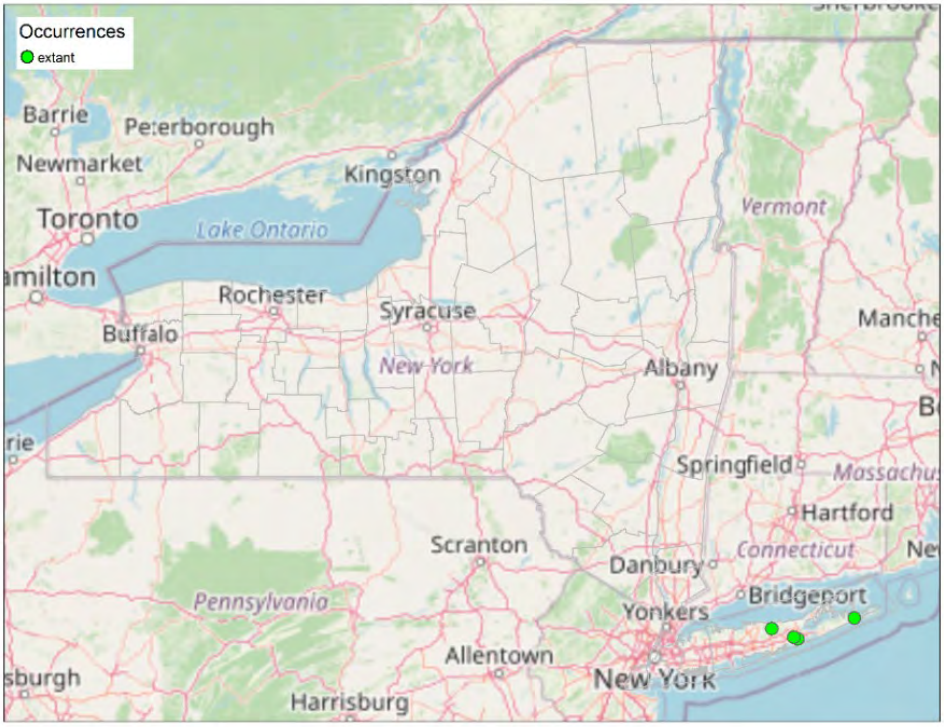

Figure 1. (*Catocala jair*) distribution (NYNHP 2024a)

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

Years	# of Records	# of Counties	% of State
Pre-2000	2	1	<5%
2000- 2023	3	1	<5%

Table 1. Records of (*Catocala jair*) in New York.

Details of historic and current occurrence:

Jair underwing has been documented at four sites in Suffolk County in New York. The populations at the Dwarf Pine Barrens and Quogue Wildlife Refuge were documented prior to 2000 (NYNHP 2024a). Since then, moths continue to be found during surveys in the Dwarf Pine Barrens. It is unknown if there have been surveys at the Quogue Wildlife Refuge. New locations were found at Promised Land and Brookhaven State Park after 2000 (NYNHP 2024a).

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%	Peripheral	

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. Coastal Coniferous Barrens
2. Coastal Hardwoods

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Pollinator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
-	-	-	-	

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:

Jair underwing inhabits dry, open pitch pine-scrub oak barrens and other habitats that contain the larval food plant, scrub oak (*Quercus ilicifolia*) (Wagner et al. 2003). In New York State, it has been found in several habitats including dwarf pine plains, maritime heathlands, and pitch pine-oak-heath woodlands (NYNHP 2024b).

V. Species Demographic, and Life History:

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

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):*

There is one generation each year. Adults lay their eggs in bark crevices or in the leaf litter at the base of the larval foodplant, scrub oak (*Quercus ilicifolia*) where the eggs overwinter. In the spring, larvae must eat new leaves rather than older, hardened vegetation. The larvae seem to have five instars before pupating and emerging as adults. Adults have a relatively long flight season (Wagner et al. 2008), lasting from early July until early September in New York State with the peak in late July (NYNHP 2024a).

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

Elimination and fragmentation of habitat by commercial and residential development is the main threat to moth and butterfly species such as the jair underwing that inhabit shrublands in southern New England and southeastern New York. Fire suppression and allowing succession may

eliminate suitable habitat for the jair underwing (Wagner et al. 2003), while excessive prescribed burning and wildfires that consume entire occupied habitats are also threats (NatureServe 2024). Lights from adjacent areas such as airports can also disturb the moths (NYNHP 2024b).

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
1. Residential and Commercial	1.1 Housing & Urban Areas	Choose an item. (habitat loss/degradation)	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.
9. Pollution	9.3 Agricultural & Forestry Effluents	9.3.3 Herbicides & pesticides (insecticide)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
11. Climate Change	11.3 Changes in Temperature Regimes	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 2. Threats to *Catocala jair.*

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:

All the known locations are on protected land. Some of the habitats are managed with prescribed burning.

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

The best management strategy for this species is the management of the natural community, or habitat, where this species occurs. Maintaining pine barrens with their full suite of plant and animal species requires frequent (every few decades) disturbance to maintain open-canopy, shrub-dominated communities and to prevent succession to a closed-canopy hardwood forest (Jordan et al. 2003). Researchers have determined that "an active fire management program utilizing prescribed fire with appropriate mechanical treatments" is the preferred method (Jordan et al. 2003). Researchers have also determined that the size, type, intensity, and timing of fires (pyrodiversity) needs to be evaluated for each site to maximize benefits to the natural community and the species it supports (Jordan et al. 2003). The entire occupied habitat for a population should not be burned in a single year (Wagner et al. 2003). For example, in places where prescribed burning is used, refugia (unburned areas) are needed for many species to ensure that any life stage can survive a fire. In addition, in occupied areas it would be beneficial to restrict ATV use and to minimize lighting to maintain dark sky conditions (NYNHP 2024b).

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 (*Catocala jair*).

VII. References

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Originally prepared by	Jenny Murtaugh
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