

Species Status Assessment

Class: Lepidoptera
Family: Lycaenidae
Scientific Name: *Satyrium favonius ontario*
Common Name: Northern oak hairstreak

Species synopsis:

The original specimen supposedly came from Ontario, Canada. However, since 1900 this subspecies has been found from the vicinity of Boston, Massachusetts (not before about 1980) southward through coastal New England, southeastern New York, and more widely from New Jersey through most of Georgia and west into Texas and Oklahoma. While it does occur in much of the lower Midwest eastward into Ohio and widely in the southeastern states, this species is unknown from the mountains (New York Natural Heritage Program 2012).

In New York this species occurs mostly in the lower Hudson Valley and on Long Island. The distribution also includes the Albany Pine Bush where one was collected in 1979. Historically, it was present in at least the Ithaca area, but according to Robert Dirig there are no records in that area since 1970, after collections in 1890, 1967, and 1970. Since 2000, there have been credible reports from Orange, Westchester, Rockland, and Suffolk Counties (New York Natural Heritage Program 2012). As Shapiro (1974) noted, the habitat is not rare in southeastern New York.

I. Status

a. Current and Legal Protected Status

i. Federal Not listed **Candidate?** No

ii. New York Not listed; SGCN

b. Natural Heritage Program Rank

i. Global G4T4

ii. New York S2S4 **Tracked by NYNHP?** Yes

Other Rank:

None

Status Discussion:

Since the potential habitat is widespread in southeastern New York, and since the species probably spends most of its time in the canopy, the Northern oak hairstreak is probably much less rare than records indicate. Nevertheless, the habitat is spotty in heavily developed southeastern mainland New York, although the species could be more widespread on outer Long Island (New York Natural Heritage Program 2012).

II. Abundance and Distribution Trends

a. North America

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Time frame considered: _____

b. Regional

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Regional Unit Considered: _____ Northeast _____

Time Frame Considered: _____

c. Adjacent States and Provinces

MASSACHUSETTS Not Present X No data _____

QUEBEC Not Present X No data _____

VERMONT Not Present X No data _____

ONTARIO Not Present X No data _____

CONNECTICUT Not Present _____ No data X

i. Abundance

____ declining ____ increasing ____ stable X unknown

ii. Distribution:

____ declining ____ increasing ____ stable X unknown

Time frame considered: _____

Listing Status: _____ Not listed _____ SGCN? No

NEW JERSEY Not Present _____ No data _____

i. Abundance

____ declining ____ increasing X stable ____ unknown

ii. Distribution:

____ declining ____ increasing X stable ____ unknown

Time frame considered: _____

Listing Status: _____ Not listed _____ SGCN? No

III. New York Rarity, if known:

Historic	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
prior to 1970	_____	_____	_____
prior to 1980	_____	_____	_____
prior to 1990	_____	<u>2 counties</u>	<u><5%</u>

Details of historic occurrence:

Ulster County – 1989; Westchester County – 1989

Possible but unconfirmed records from Orange, Suffolk, Rockland, and Tompkins counties; no date given (Nature Serve Explorer 2009).

Current	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
	_____	_____	_____

Details of current occurrence:

No current occurrence information available.

New York’s Contribution to Species North American Range:

Distribution (percent of NY where species occurs)	Abundance (within NY distribution)
<u>X</u> 0-5%	___ abundant
___ 6-10%	___ common
___ 11-25%	___ fairly common
___ 26-50%	<u>X</u> uncommon
___ >50%	___ rare

NY’s Contribution to North American range

<u>X</u> 0-5%
___ 6-10%
___ 11-25%
___ 26-50%

V. New York Species Demographics and Life History

- Breeder in New York**
- Summer Resident**
- Winter Resident**
- Anadromous**
- Non-breeder in New York**
- Summer Resident**
- Winter Resident**
- Catadromous**
- Migratory only**
- Unknown**

Species Demographics and Life History Discussion:

Life history information for this species is unknown.

VI. Threats:

The main threat is habitat loss. Gypsy moth (*Lymantria dispar*) spraying with chemical biocides such as Dimilin would severely threaten any occurrence. It is likely, but not known for sure, that Bt (*Bacillus thuringiensis* - a bacterial biological control used on gypsy moth caterpillars) would also be lethal to the larvae, but it is likely that Bt mortality would be lower than from Dimilin. The larvae normally complete feeding well before defoliation of oaks by gypsy moth larvae would be a threat. Collecting is not a threat, as it would be nearly impossible to overcollect this secretive species.

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

- No** **Unknown**
- Yes**

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

In some cases managers might want to consider making sure there are nectar sources available. Milkweeds and dogbanes should not be mowed during their flowering period, but otherwise the habitat is generally forest that probably needs little management. Unless documented otherwise, it must be assumed that Bt is highly lethal to the larvae and therefore gypsy moth spraying could eradicate populations.

More research is needed that would identify which species of oaks the larvae eat and whether or not they have any other special needs. It would also be very useful to document the sensitivity of the larvae to realistic doses of Bt (*Bacillus thuringiensis* - a bacterial biological control used on gypsy moth caterpillars) such as are applied for gypsy moth suppression. The available evidence for other butterflies in the subfamily Theclinae suggests that this species would be sensitive to Bt (Schweitzer 2004; Wagner et al. 1996), but sensitivity of caterpillars to Bt is very variable, even among species in the same genus (Peacock et al. 1998).

Conservation actions following IUCN taxonomy are categorized in the table.

Conservation Actions	
Action Category	Action
Law and Policy	Policies and Regulations
Education and Awareness	Training
Education and Awareness	Awareness & Communications
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Invasive/Problematic Species Control
Land/Water Protection	Site/Area Protection

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for other butterflies, and for the Northern oak hairstreak in particular.

Fact sheet:

- ___ Develop fact sheets and other outreach material to educate the public about species at risk Lepidoptera.

Habitat management:

- ___ Determine best management regimes for species in each locality.

Habitat research:

- ___ Determine precise habitat needs of all life stages.
- ___ Ascertain food plants.
- ___ Determine the relationship between food availability and species numbers.

Invasive species control:

- ___ Identify species which impact negatively on butterfly populations.
- ___ Determine the best control method for those exotic species with minimal repercussions for butterfly populations.

Life history research:

- ___ Investigate the metapopulation dynamics of those species which appear to have distinct populations.
- ___ Establish the duration of all life stages.
- ___ Taxonomic research for related species.

Other action:

- ___ Determine the actual sensitivity of species to chemical formulations, particularly diflubenzuron and other commonly used agricultural pesticides.
- ___ Determine the effect of *Bacillus thuringiensis kurstaki* (BTK) used in Gypsy moth sprayings on various species.

Population monitoring:

- ___ Inventory of species within historical range.

Statewide baseline survey:

- ___ Survey all species to more adequately define the list of species that need to be addressed.

VII. References

New York Natural Heritage Program. 2012. Online Conservation Guide for *Satyrium favonius ontario*. <<http://www.acris.nynhp.org/guide.php?id=7865>>. Accessed 23 January 2013.

New York State Department of Environmental Conservation. 2009. New York Nature Explorer. <<http://www.dec.ny.gov/natureexplorer/app/>>. Accessed 23 January 2013.

NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <<http://www.natureserve.org/explorer>>. Accessed 23 January 2013.

Shapiro, A.M. 1974. Butterflies and Skippers of New York State. Search 4:1-60.

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