Species Status Assessment

Common Name:	Canadian Potterfly	**Date Updated:**	2024-10-11
Scientific Name:	*Doros aequalis*	**Updated By:**	Erin L. White
Class:	Insecta		
Family:	Syrphidae		

Species Synopsis

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

Canadian Potterfly is known to range from British Columbia east to Nova Scotia in Canada and in the U.S., it ranges from Maine to Maryland, Michigan, and Oregon, Idaho, and Montana (NatureServe 2024).

The species was ranked an S1 as part of the ESNPS (White et al. 2022) based on rarity, trend, and threat information. The species is historically (1999 and earlier) known from three counties in NY. It has been confirmed in two other counties since 2000. Despite survey effort as part of a statewide pollinator survey, few observations have been confirmed in recent years and it has always been a rare fly in the state.

Canadian Potterfly inhabits forests and bogs with a suspected association with aphids found in ant nests. Adults visit flowers of *Maianthemum, Rosa,* and *Thalictrum* (Skevington et al. 2019).

I. Status

a. Current legal protected Status

i. Federal: Not Listed **Candidate:** No

ii. New York: Unprotected

b. Natural Heritage Program

i. Global: G5

ii. New York: S1 **Tracked by NYNHP?** On Active Tracking List

Other Ranks:

-New York 2025 SGCN status: High Priority Species of Greatest Conservation Need

-COSEWIC: Not listed in Canada
-IUCN Red List: Not assessed by IUCN Red List
-Northeast Regional SGCN: Not listed

Status Discussion:

The species was ranked an S1 as part of the ESNPS (White et al. 2022) based on rarity, trend, and threat information. The species is historically (1999 and earlier) known from three counties in NY. It has been confirmed in two other counties since 2000. Despite survey effort as part of a statewide pollinator survey, few observations have been confirmed in recent years and it has always been a rare fly in the state.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status or S-Rank	SGCN?
North America	Yes	Unknown	Unknown	Unknown		
Northeastern US	Yes	Unknown	Unknown	Unknown		No
New York	Yes	Unknown	Unknown	Unknown	S1	No
Connecticut	No	-	-	-		
Massachusetts	No	-	-	-		
New Jersey	No	-	-	-		
Pennsylvania	No	Unknown	Unknown	Unknown	SNR	No
Vermont	No	Unknown	Unknown	Unknown	SNR	No
Ontario	No	Unknown	Unknown	Unknown	S3	
Quebec	No	Unknown	Unknown	Unknown	SNR	

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):

The Empire State Native Pollinator Survey (ESNPS) was conducted from 2017-2021, but there are no organized, regular monitoring or survey activities directed toward this species or to sites where they have been documented. Some regular monitoring may occur at protected sites that Heritage staff revisit if they occur on state properties, as part of OPRHP or State Lands inventory work.

Trends Discussion

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

The species is historically (1999 and earlier) known from three counties in NY. It has been confirmed in two other counties since 2000. Despite survey effort as part of a statewide pollinator survey, few observations have been confirmed in recent years and it has always been a rare fly in the state.

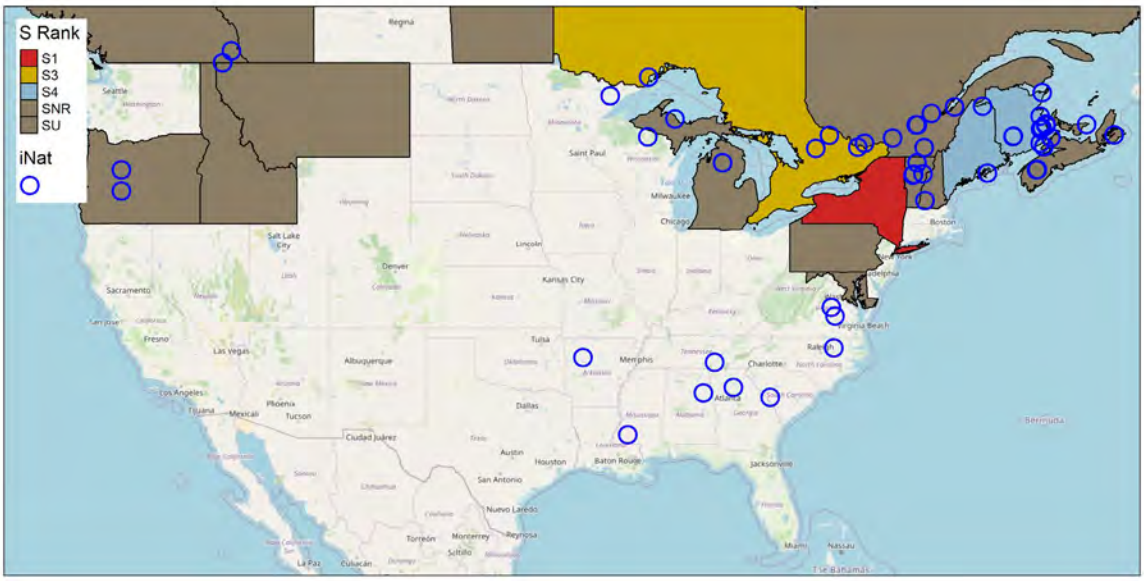

Figure 11. *Doros aequalis* North American distribution. Points show research-grade iNaturalist observations.

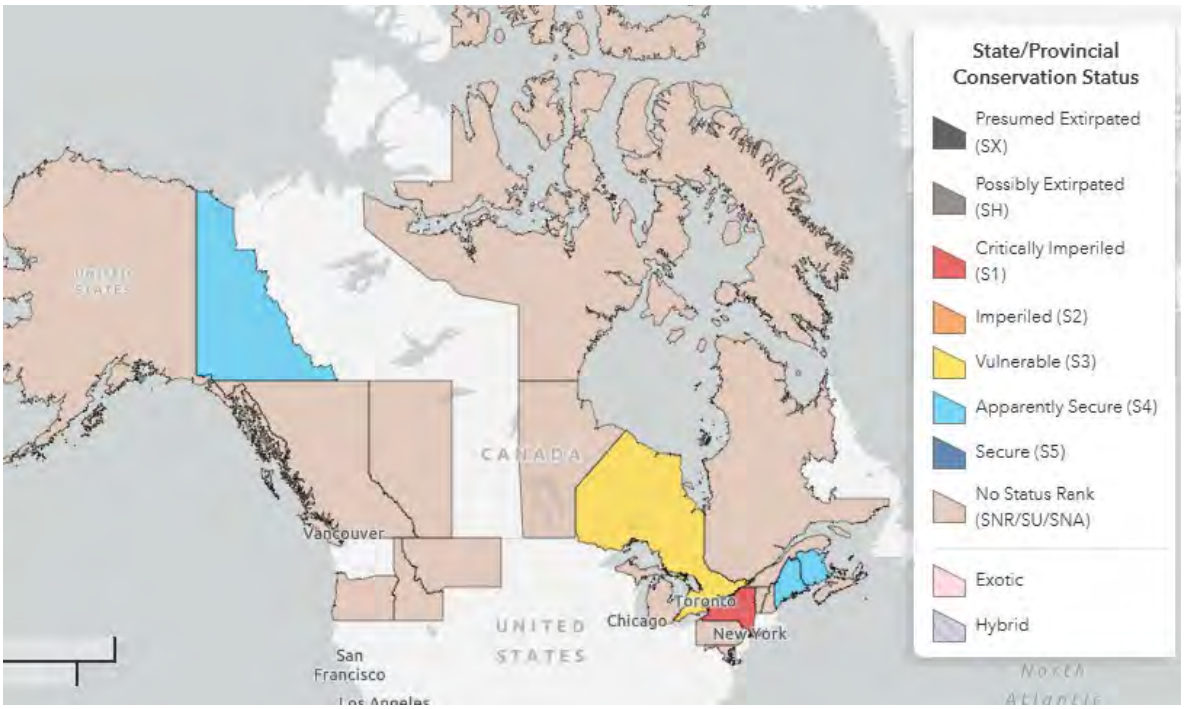

Figure 2. Conservation status of *Doros aequalis* in North America (NatureServe 2024).

III. New York Rarity

(provide map, numbers, and percent of state occupied)

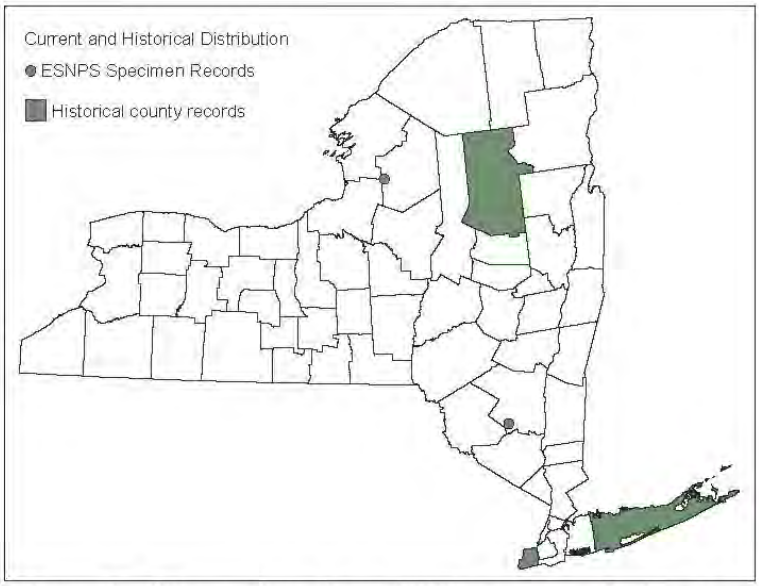

Figure 1: Observations from 2000 to present depicted as dots; those from 1999 and earlier as shaded counties.

Figure 32. NYS distribution for *Doros aequalis* based on ESNPS data (White et al. 2022).

Table 1. Number of observations of *Doros aequalis* grouped by the dates known to be extant (repeat observations (element occurrences) include the years spanning first observation to last observation) and the number and percent of total of counties these observations fall within for New York State.

Years	Observations	# of Counties	% of counties in State
Pre-2000	4	3	4.8
2000-2023	2	2	3.2

Details of historic and current occurrence:

The species has been recently documented in Lewis and Ulster Counties (White et al. 2022).

Historically, 1999 and earlier, the species is known from three counties including Hamilton, Richmond, and Suffolk Counties.

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	~1000 mi

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):

Mixed Hardwood Swamp

Mixed Northern Hardwoods

Habitat or Community Type Trend in New York

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

Column options
Habitat Specialist and Indicator Species: Yes; No; Unkown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing: Unkown; (blank) or Choose an item

Habitat Discussion:

Canadian Potterfly inhabits forests and bogs with a suspected association with aphids found in ant nests. Adults visit flowers of *Maianthemum, Rosa,* and *Thalictrum* (Skevington et al. 2019).

V. Species Demographics and Life History

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Yes	No	Yes	Yes	No

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):

Canadian Potterfly is a mimic of potter wasps. Their flight period throughout their range is from mid-May to early August and recent NY records are from June (Skevington et al. 2019, White et al. 2022).

VI. Threats

Threats facing hover flies include habitat loss and degradation, invasive plants and pathogens, pesticides, and climate change (White et al. 2022). Habitat shifting and alteration, droughts, and more frequent severe weather events due to climate change is expected to impact saproxylic flies and beetles.

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent*	Severity*	Immediacy*	Trend	Certainty
1. Residential and Commercial	1.3 Tourism & Recreation Areas	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
4. Transportation & Service Corridors	4.2 Utility & Service Lines	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
4. Transportation & Service Corridors	4.1 Roads & Railroads	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
5. Biological Resource Use	5.3 Logging & Wood Harvesting	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
8. Invasive & Other Problematic Species	8.1 Invasive Non-Native Plants & Animals	8.1.1 Terrestrial animals (wood-boring insects)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
8. Invasive & Other Problematic Species	8.1 Invasive Non-Native Plants & Animals	8.1.2 Terrestrial plants	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
8. Invasive & Other Problematic Species	8.4 Pathogens	Choose an item.	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	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.	Choose an item.
11. Climate Change	11.4 Changes in Precipitation & Hydrological Regimes	11.4.2 Droughts	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
11. Climate Change	11.5 Storms & Severe Weather	11.5.1 Storms & severe weather	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 2. Threats to *Doros aequalis*.

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:

The Freshwater Wetlands Act provides protection for wetlands greater than 12.4 acres in size under Article 24 of the NYS Conservation Law. The Adirondack Park Agency has the authority to regulate smaller wetlands within the Adirondack Park.

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

Suggested actions for habitat management should include maintaining standing old trees and course woody debris on the ground as breeding and larval sites. Maintaining a spring ephemeral understory, especially with *Maianthemum, Rosa,* and *Thalictrum* (Skevington et al. 2019) will benefit adults of this species. Limiting exposure of Canadian Potterfly to insecticides would also benefit them. Suggested actions include avoidance of application to flowers that flies are attracted to and application of solutions or soluble powders (rather than dusts or wettable powders) to the ground in calm wind and warmer temperatures during periods of dewless nights to minimize the impact to resident native pollinator populations (Schweitzer et al. 2012).

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Action Category	Action	Description
A.1 Direct Habitat Management	A.1.0.0.0 Direct habitat management	Site/Area management
A.1 Direct Habitat Management	A.1.1.0.0 Manage plants, animals, fungi, or bacteria	Invasive/Problematic species control
B.3 Outreach	B.3.1.4.0 Public outreach and information	Awareness & Communications
C.6 Design and Plan Conservation	C.6.5.0.0 Conservation planning	-Site/Area protection -Resource/Habitat Protection
C.6 Design and Plan Conservation	C.6.5.1.3 Develop a conservation, management, or restoration plan for protected private lands	Habitat/Natural process restoration

Action Category	Action	Description
C.7 Legislative and Regulatory Framework or Tools	C.7.1.3.0 Create, amend, or influence regulation	Policies and regulations
C.9 Education and Training	C.9.2.0.0 Training and individual skill development	Training

Table 3. Recommended conservation actions for *Doros aequalis*.

VII. References

This SSA drew heavily from these resources:

New York Natural Heritage Program, State University of New York College of Environmental Science and Forestry. 2023. Element Occurrence and Element Dataset. Albany, New York. [Exported 12/14/2023].

NatureServe. 2024. NatureServe Explorer. Page last published 11/14/24. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.950047/Doros_aequalis. Accessed November 20, 2024.

Additional references:

Gawler, S.C. 2008. Northeastern Terrestrial Wildlife Habitat Classification. NatureServe,Boston, MA.

IUCN 2024. IUCN Red List of Threatened Species. Version 2023.1. <www.iucnredlist.org>. Accessed 10 October 2024.

Northeast Fish and Wildlife Diversity. 2024. Regional Species of Greatest Conservation Need (2024). https://northeastwildlifediversity.org/rsgcn. Accessed October 10, 2024.

Schweitzer, D.F., N.A. Capuano, B.E. Young and S.R. Colla. 2012. Conservation and management of North American bumble bees. NatureServe, Arlington, Virginia, and USDA Forest Service, Washington, D.C. 17 pp.

Skevington, J.H., M.M. Locke, A.D. Young, K. Moran, W.J. Crins, and S.A Marshally. 2019. Field guide to the flower flies of northeastern North America. Princeton University Press.

Vockeroth, J.R. 1992. The flower flies of the subfamily Syrphinae of Canada, Alaska and Greenland. Canada Communications Group - Publishing, Ottawa, Canada. 456pp. Available online: http://publications.gc.ca/site/eng/9.811395/publication.html

White, E.L., M. D. Schlesinger, and T.G. Howard. 2022. The Empire State Native Pollinator Survey (2017-2021). New York Natural Heritage Program, Albany, NY.

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First revision	
Last revision	Formatted threats/actions 11/20/24 (Vincenzo Bonaiuto)