

Species Status Assessment

Common Name: Switchgrass dart **Date Updated:** December 27, 2023

Scientific Name: *Dichagyris acclivis* **Updated By:** Hollie Shaw

Class: Insecta

Family: Noctuidae

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

The switchgrass dart (or inclined dart) is currently known as *Dichagyris acclivis*. It has been reclassified from the genus *Richia* (Poole and Gentili 1996). *D. acclivis* ranges from Kansas, northwestern Connecticut, and Cape Cod southward to North Carolina and Texas. In New York, *D. acclivis* may be restricted to the coastal areas. Current trends in New York indicate a possible westward range expansion that includes Staten Island. It has not been found north of New York City (iNaturalist 2023, NYNHP 2023a). Larvae feed on the developing seeds of switchgrass (*Panicum virgatum*) (Wagner et al. 2008). It is possible that they also use other grasses (D. Schweitzer, personal communication).

I. Status

a. Current legal protected Status

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

ii. **New York:** Not listed; SGCN

b. Natural Heritage Program

i. **Global:** G4G5

ii. **New York:** S2S3 **Tracked by NYNHP?:** Yes

Other Ranks:

-IUCN Red List: not listed

-Northeast Regional SGCN: not listed

Status Discussion:

NatureServe (2023) suggests a global status review is needed.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	Unknown		Not listed, G4G5	-
Northeastern US	Yes	Unknown	Unknown		Not listed	No
New York	Yes	Increasing	Increasing	2000-2022	Not listed, S2S3	Yes

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
Connecticut	Yes	Unknown	Unknown	unknown	Special Concern, S2	No
Massachusetts	Yes	Unknown	Stable	2000-2022	Not listed (widespread, uncommon)	No
New Jersey	Yes	Unknown	Unknown	unknown	Not listed	No
Pennsylvania	Yes	Unknown	Unknown	unknown	Not listed, S3	No
Vermont	No	-	-			No
Ontario	Yes	-	-		S3	-
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 known monitoring activities or regular surveys for this species.

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

Range wide trends are generally unknown. In New York, new locations have been reported between Staten Island and Montauk Point, Long Island (iNaturalist 2023, NYNHP 2023a) indicating a westward range expansion.

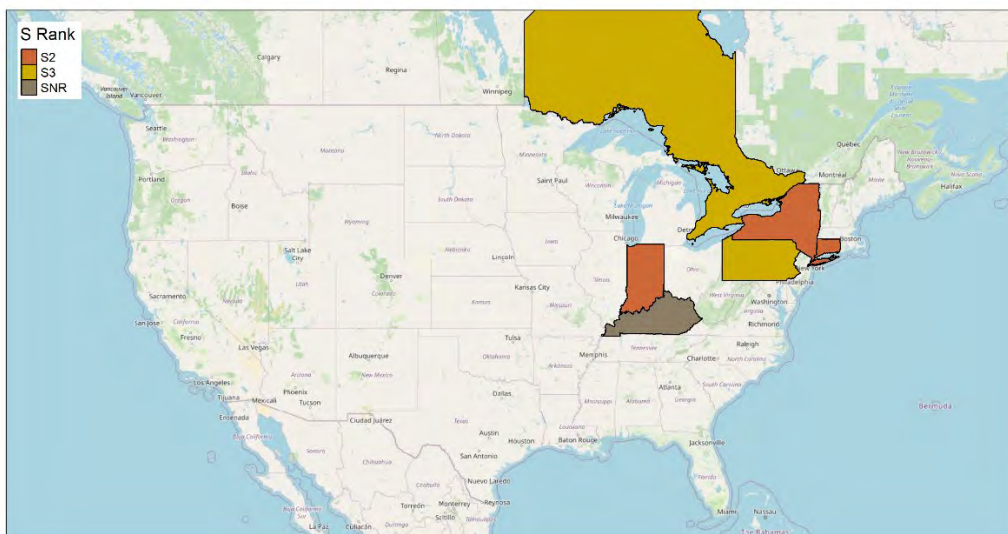


Figure 1. *Dichagyris acclivis* distribution and status (Distribution may not be complete. NatureServe 2023)

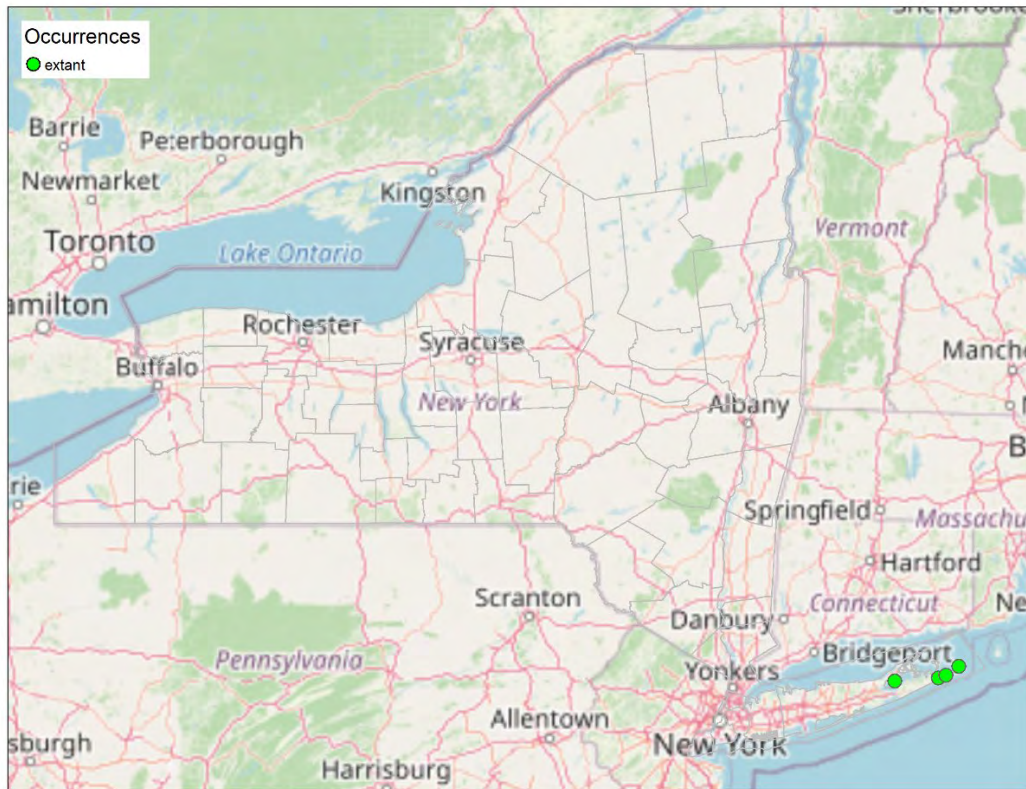


Figure 2. *Dichagyris acclivis* distribution (NYNHP 2023a)

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	9-11	4	<10

Table 1. Records of *Dichagyris acclivis* in New York.

Details of historic and current occurrence:

D. acclivis was documented from Greenport and Orient, Suffolk County in 1954 (Lafontaine 2004). Current distribution in New York ranges from Staten Island to Montauk Point. Some populations are on managed State Park or other protected lands (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%	Peripheral	1200 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. Maritime Dunes
2. Old Field/Managed Grassland

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Pollinator Species?	Habitat/Community Trend	Time frame of Decline/Increase
No	No	Choose an item.	Unknown	

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:

The habitat for this species in New York State seems to be sandy, grassy areas with an abundance of switchgrass (*Panicum virgatum*). Larvae commonly feed on this grass and possibly other species in wet places such as ditches and stream sides (D. Schweitzer, personal communication).

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):

Adults fly from mid-July to early August. The females lay one brood of eggs each year. Larvae emerge from the eggs and become mature caterpillars in September and early October. The larvae burrow underground during the day, where they are safe from predators. They emerge at night to feed on the developing seeds of switchgrass (*Panicum virgatum*) (Wagner et al. 2008), usually in wet areas such as ditches and streamsides (D. Schweitzer, personal communication). Larvae spend the winter underground as prepupae, and pupation occurs in a cell underground. Prepupal larvae of some closely related species (and perhaps this species) aestivate underground for three or four months during the summer before emerging as adult moths (Wagner et al. 2008).

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

Fragmentation and loss of habitat can directly remove larval host plants. Succession and wildfires can disturb the grassland communities within occupied habitats (NYNHP 2023b). General threats identified to affect moths include land clearing, coastal erosion, and sea level rise. 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). Broad scale studies have shown artificial lighting to be a partial cause of changes in moth behavior and predation rates, which could affect population levels (Frank 2006).

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
1. Residential and Commercial	1.1 Housing & Urban Areas	(habitat loss)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
6. Human Intrusions & Disturbance	6.1 Recreational Activities	6.1.1 Motor vehicles (offroad)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
7. Natural System Modifications	7.1 Fire & Fire Suppression	7.1.2 Suppression in the fire regime	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 (parasitoid flies)	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	8.2.3 Localized increase in invertebrate grazing	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.
11. Climate Change	11.1 Habitat Shifting & Alteration	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 2. Threats to *Dichagyris acclivis*.

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:

Some of the populations are on protected lands. Management may be needed to maintain the habitat.

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

Areas where this moth has been found need to be evaluated to avoid additional encroachment or fragmentation by development. At some locations, periodic controlled burns or other measures may be needed to restore or maintain grassland habitat. Minimizing lighting to maintain dark sky conditions would also be beneficial (NYNHP 2023b).

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 *Dichagyris acclivis*.

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

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Date first prepared	March 13, 2013
First revision	July 19, 2013 (Samantha Hoff)
Latest revision	December 27, 2023 (Hollie Shaw)