

Species Status Assessment

Class: Insecta
Family: Hesperidae
Scientific Name: *Pyrgus wyandot*
Common Name: Southern grizzled skipper

Species synopsis:

The grizzled skipper has disappeared from much of its historic range and only survives today in small, fragmented colonies. Many authors have treated this as a subspecies of northern grizzled skipper (*P. centaureae*) despite substantial differences in adult color pattern, larval color, genitalia shape and habitat preference, but for now it remains as a distinct species in most databases (Schweitzer et al. 2011). *Pyrgus wyandot* was described from Long Island and Washington D.C. in 1968 and historically occurred through much of the Appalachian Highlands from New York southward to North Carolina and westward to Ohio, with an isolated population in northern Michigan (Parshall 2002, Schweitzer et al. 2011). It has since been extirpated from a major portion of its range (New York-New Jersey and most of eastern Pennsylvania) (NatureServe 2013). This species is one of the most vulnerable to gypsy moth spraying due to the larvae habitat needs of open, exposed microhabitats within forest types that are prone to gypsy moth outbreaks (Schweitzer et al. 2011).

The last record of this species in NY was in 1970 from Tioga and Tompkins counties (NYSDEC SGCN Experts Meeting).

I. Status

a. Current and Legal Protected Status

i. Federal Not Listed Candidate? No

ii. New York Endangered

b. Natural Heritage Program Rank

i. Global G1G2Q

ii. New York SH Tracked by NYNHP? Yes

Other Rank:

USDA: sensitive species, eastern region

Status Discussion:

A G1 global status of Critically Imperiled is warranted due to the fact that this species is extant in only about 13% of counties with records from the 1990s in Pennsylvania, Maryland, West Virginia, Virginia, and Ohio (NatureServe 2013). The Q rank indicates uncertainty that the southern grizzled skipper is a full species rather than a subspecies of *Pyrgus centaureae* (Schweitzer et al. 2011). It is considered historic, extirpated, imperiled or critically imperiled range-wide and as of 2010 all state ranks are SH, S1 or S1S2 (NatureServe 2013). Maryland, New York, and Ohio all list this species as state endangered while its status in Virginia is threatened. It was proposed as a candidate species for listing on the Endangered Species Act, but since 1994 has had no official status with the U.S. Fish and Wildlife Service (Parshall 2002).

II. Abundance and Distribution Trends

a. North America

i. Abundance

X declining ___ increasing ___ stable ___ unknown

ii. Distribution:

X declining ___ increasing ___ stable ___ unknown

Time frame considered: 1985 – present

Severe decline

b. Regional

i. Abundance

X declining ___ increasing ___ stable ___ unknown

ii. Distribution:

X declining ___ increasing ___ stable ___ unknown

Regional Unit Considered: Region 5 - Northeast

Time Frame Considered: 1985 – present

Severe decline

c. Adjacent States and Provinces

CONNECTICUT Not Present X No data _____

MASSACHUSETTS Not Present X No data _____

QUEBEC Not Present X No data _____

VERMONT Not Present X No data _____

ONTARIO Not Present X No data _____

NEW JERSEY Not Present _____ No data X

i. Abundance

____ declining ____ increasing ____ stable X unknown

ii. Distribution:

____ declining ____ increasing ____ stable X unknown

Time frame considered: 1950s - present

Listing Status: Endangered SGCN? Yes

PENNSYLVANIA Not Present _____ No data _____

i. Abundance

 X declining ____ increasing ____ stable ____ unknown

ii. Distribution:

 X declining ____ increasing ____ stable ____ unknown

Time frame considered: Severe decline from 1985 - present

Listing Status: Not Listed SGCN? Yes

Severe decline

d. NEW YORK

No data _____

i. Abundance

___ declining ___ increasing ___ stable X unknown

ii. Distribution:

___ declining ___ increasing ___ stable X unknown

Time frame considered: 1970 - present

Monitoring in New York.

Over the course of five years, 110 Lepidoptera Species of Greatest Conservation Need identified in the SWG T-17 grant are being assessed. The southern grizzled skipper is included in this study, but has not yet been assessed (NYSDEC 2012).

Trends Discussion:

The southern grizzled skipper was once a common species in all suitable habitat locations throughout the Appalachian Mountains, but very few occurrences that were documented in or before the mid-1980s remain extant (Schweitzer et al. 2011). It disappeared from New Jersey during a brief period of widespread gypsy moth spraying in the late 1950s and 1960s, and essentially did the same in Virginia after extensive Dimilin and Btk application in the late 1980s and early 1990s (Schweitzer et al. 2011). Drought and succession in central New York has reduced available habitat for this species since the 1970s but these populations may not have ever really been established (Schweitzer et al. 2011, NatureServe 2013). Distribution was extremely scattered throughout the state with occurrences at 2 sites near Ithaca, 1 site each in Erie and Rockland counties and 1 old record for Long Island, with all specimens collected during a period of less than five years (NYNHP 2013). The pre-1963 Long Island record was probably in error for a nearby part of New Jersey or New York because no edaphic formations occur on Long Island (Schweitzer et al. 2011). The validity of reports along Lake Erie in New York and Ohio is not known, but occurrences are plausible considering populations occur near the Great Lakes in Michigan (Schweitzer et al. 2011). Long term trends estimate a decline of greater than 90% due to catastrophic declines during 1987 to 1995 from spraying and drought (NatureServe 2013).



Figure 1. A map of the historical range of *Pyrgus wyandot* (excluding New Jersey counties)(Parshall 2002).

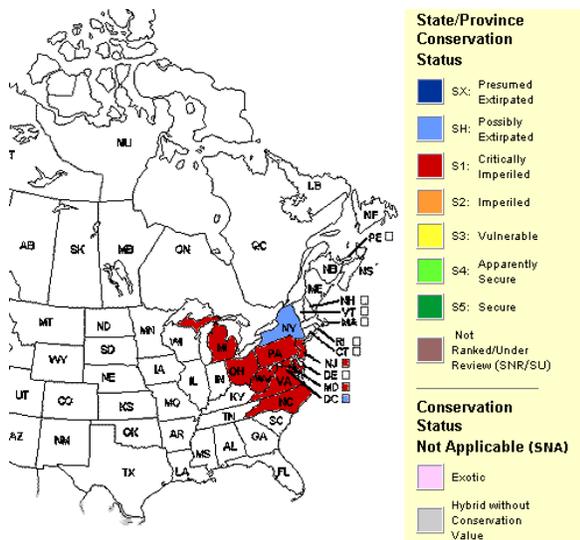


Figure 2. Conservation status of *Pyrgus wyandot* (NatureServe 2013).

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	_____	_____	_____

Details of historic occurrence:

The last record was in 1970 from Tioga and Tompkins Counties (NYNHP 2013).

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

Details of current occurrence:

There are no current records of occurrence for this species.

New York’s Contribution to Species North American Range:

Distribution (percent of NY where species occurs)

- 0-5%
- 6-10%
- 11-25%
- 26-50%
- >50%

Abundance (within NY distribution)

- abundant
- common
- fairly common
- uncommon
- rare

NY’s Contribution to North American range

- 0-5%
- 6-10%
- 11-25%
- 26-50%
- >50%

common, this species is nearly restricted to a narrow range of hot rock outcrop habitat (NatureServe 2013).

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:

The southern grizzled skipper has one generation, usually appearing in New York during late April to mid-May, with adults observed flying in May (Schweitzer et al. 2011). Eggs are deposited singly on the underside of host plant leaves, hatching within eight to ten days depending on the temperature (Parshall 2002). The larval period is approximately 100 days, beginning at the end of the adult season, and larvae remain on food plants at all hours (NatureServe 2013). Outside of Michigan, larvae feed exclusively on dwarf cinquefoil (*Potentilla canadensis*) and a variety of flowers are utilized by adults for nectar. Pupation takes place in late summer in a sealed leaf shelter build close to the ground (Parshall 2002).

VI. Threats:

The southern grizzled skipper population was largely reduced by gypsy moth spraying, eliminating most known Appalachian populations from about 1985-1992 (NatureServe 2013). Drought has reduced available host food plants in some areas of the range, particularly in West Virginia (NatureServe 2013). Habitat destruction and development have also isolated populations, leading to low numbers (NatureServe 2013). Herbicide application in powerline cuts may also be a threat as powerline corridors were major habitats in the 1980s and will be important in the future if the

species recovers (NatureServe 2013). The likely cause of central New York population disappearance was succession of open habitats (Schweitzer et al. 2011). Collection was apparently not a factor in the crash of this species, but would constitute a threat to remaining colonies (NatureServe 2013). Fire suppression has been a threat to the Michigan portion of the population, but fire as a management tool can also be harmful to larval and egg stages and sites with colonies present should not be burned (Parshall 2002). Drought has already decreased populations in some portions of this species' range, and climate change may exacerbate drought conditions, further reducing suitable habitat.

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

No Unknown
 Yes

The grizzled skipper is listed as an endangered species in New York and is protected by Environmental Conservation Law (ECL) section 11-0535 and the New York Code of Rules and Regulations (6 NYCRR Part 182). A permit is required for any proposed project that may result in a take of a species listed as Threatened or Endangered, including, but not limited to, actions that may kill or harm individual animals or result in the adverse modification, degradation or destruction of habitat occupied by the listed species.

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

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 southern grizzled skipper 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

NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. Accessed: May 3, 2013.

New York Natural Heritage Program. 2013. Element Occurrence Database. New York State Department of Environmental Conservation. Albany, NY.

New York State Department of Environmental Conservation (NYSDEC). 2012. State wildlife grant T-17: baseline survey of Lepidoptera species of greatest conservation need. Annual Progress Report to USFWS. Albany, NY.

Parshall, D.K. 2002. Conservation assessment for the southern grizzled skipper (*Pyrgus centaureae wyandot*). USDA Forest Service, Eastern Region. 23p.

Schweitzer, D.F., M.C. Minno, and D.L. Wagner. 2011. Rare, declining and poorly known butterflies and moths (Lepidoptera) of forests and woodlands in the eastern United States. USFS Forest Health Technology Enterprise Team, Technology Transfer Bulletin FHTET-2011-01. 517p.

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