

Species Status Assessment

Class: Osteichthyes (bony fishes)
Family: Percidae (perches)
Scientific Name: *Etheostoma fusiforme*
Common Name: Swamp darter

Species synopsis:

Swamp darter inhabits ponds and medium-sized streams with aquatic vegetation. In New York it is found only on Long Island. It is present throughout its historic range and although its range is restricted, populations seem secure. It is vulnerable to habitat loss from wetland degradation and dewatering for residential and urban development.

I. Status

a. Current and Legal Protected Status

- i. **Federal** Not Listed **Candidate:** No
ii. **New York** Threatened, SGCN

b. Natural Heritage Program Rank

- i. **Global** G5
ii. **New York** S1S2 **Tracked by NYNHP?** Yes

Other Rank:

Status Discussion:

Swamp darter is globally ranked as Secure. Throughout its range, this species is represented by a large number of occurrences and this species is common to abundant in much of its range (NatureServe 2012). However, in New York, swamp darter is listed as threatened and is ranked as Imperiled/Critically Imperiled.

II. Abundance and Distribution Trends

a. North America

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Time frame considered: Over the past 10 years (NatureServe 2012)

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

ONTARIO Not Present X No data _____
QUEBEC Not Present X No data _____
VERMONT Not Present X No data _____
CONNECTICUT Not Present _____ No data _____

i. Abundance

____ declining ____ increasing ____ stable X unknown

ii. Distribution:

____ declining ____ increasing ____ stable X unknown

Time frame considered: _____
Listing Status: _____ Not Listed _____ SGCN? Yes

MASSACHUSETTS Not Present _____ No data _____

i. Abundance

 X declining ____ increasing ____ stable ____ unknown

ii. Distribution:

 X declining ____ increasing ____ stable ____ unknown

Time frame considered: _____
Listing Status: _____ Not Listed _____ SGCN? Yes

NEW JERSEY Not Present _____ No data _____

i. Abundance

____ declining ____ increasing ____ stable X unknown

ii. Distribution:

____ declining ____ increasing ____ stable X unknown

Time frame considered: _____
Listing Status: _____ Not Listed _____ SGCN? No

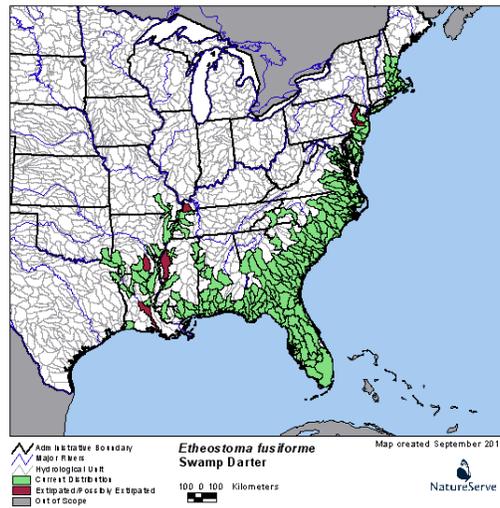


Figure 1. U.S. Distribution of swamp darter by watershed (NatureServe 2012).

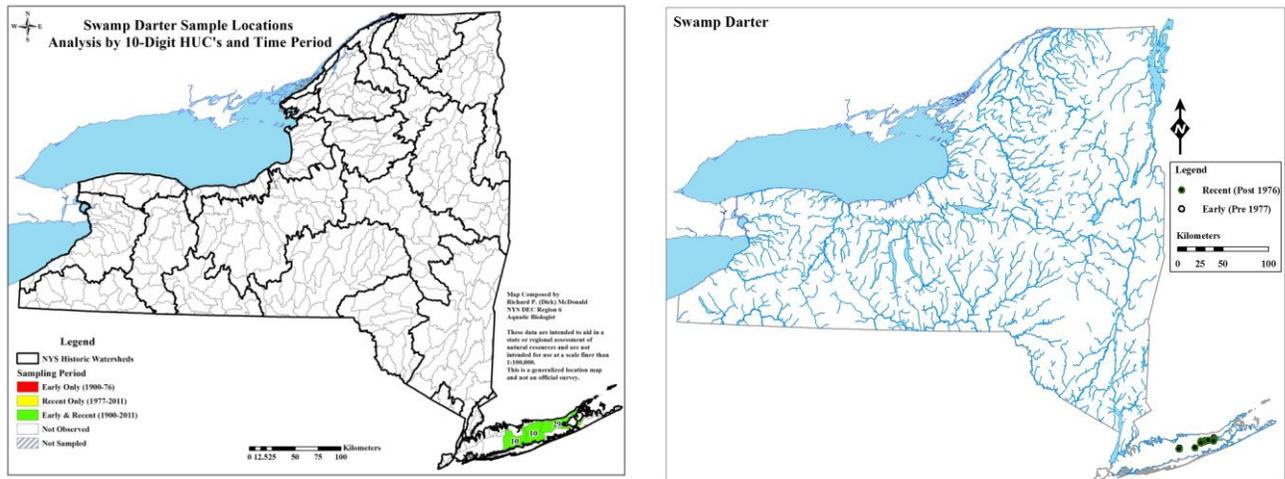


Figure 2. Swamp darter distribution in NY, depicting fish sampled before 1977 and from 1977 to current time, shown with the corresponding HUC-10 units where they were found and the number of records.

Watershed name	Total # HUC10	Early only	Recent only	both
Long Island	3	0	0	3

Table 1. Records of rare fish species in hydrological units (HUC-10) are shown according to their watersheds in early and recent time periods (before and after 1977) to consider loss and gains. Further explanations of details are found in Carlson (2012).

III. New York Rarity, if known:

Historic	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
prior to 1977	_____	<u>22</u>	<u>1 of 18 watersheds</u>
prior to 1980	_____	_____	_____
prior to 1990	_____	_____	_____

Details of historic occurrence:

Swamp darter has historically been found in 16 waters in the Long Island watershed.

Current	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
Since 1977	_____	<u>31</u>	<u>1 of 18 watersheds</u>

Details of current occurrence:

No new locations have been documented as having the swamp darter present. Historically, the swamp darter has only been reported from the drainages of Lake Ronkonkoma, the Carmans River and the Peconic River, all on Long Island. Swamp darters were not found in the Carmans River or Lake Ronkonkoma drainages and may be extirpated from these drainages, decreasing their range in the Long Island watershed (H. O’Riordan, pers. comm.).

New York’s Contribution to Species North American Range:

% of NA Range in New York	Classification of New York Range
___ 100 (endemic)	___ Core
___ 76-99	<u>X</u> Peripheral
___ 51-75	___ Disjunct
___ 26-50	Distance to core population:
<u>X</u> 1-25	<u>400 miles</u>

IV. Primary Habitat or Community Type:

- 1. Headwater/Creek
- 2. Coastal Plain Stream
- 3. Coastal Plain Pond

Habitat or Community Type Trend in New York:

Declining Stable Increasing Unknown

Time frame of decline/increase: _____

Habitat Specialist? Yes No

Indicator Species? Yes No

Habitat Discussion:

The swamp darter is found in quiet water areas and/or slow-moving water of swamps, ponds, lakes, and streams with detritus bottoms and aquatic vegetation, sometimes over sand or gravel. They tolerate a wide range of pH values (5.7-7.2), water temperatures, murky water and low oxygen levels (down to 2.1 mg/l) (Jenkins and Burkhead 1994). Spawning occurs among aquatic plants; eggs are deposited on leaves (NatureServe 2012).

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:

Swamp darter has a relatively short life span, dying not long after spawning at the end of their first year. In the northeast, spawning takes place in April or May (Werner 2004).

VI. Threats:

Populations of swamp darter are not well studied. The range is restricted to only a few ponds in this river system of Long Island and they may be vulnerable to various threats. Pollution or other alterations to its habitats appear to be the major potential threats to this species. Their protection is mostly a function of protecting the wetlands in eastern Long Island. Low water levels in Zeeks Pond (on Brookhaven Nat. Lab) in 2002 were thought to have caused the swamp darters to become extirpated.

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

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

The swamp darter is listed as a threatened 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.

The Protection of Waters Program provides protection for rivers, streams, lakes, and ponds under Article 15 of the NYS Conservation Law.

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

Continue monitoring populations and monitor water levels or depths on dry years to ensure suitable habitat is available.

Conservation actions following IUCN taxonomy are categorized in the table.

Conservation Actions	
Action Category	Action
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Habitat/Natural Process Restoration
Species Management	Species Reintroduction
Law/Policy	Policy/Regulation Change/Implementation

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for the swamp darter.

Habitat Monitoring:

---- Complete surveys on submerged aquatic vegetation and floating woody mats in areas still inhabited by this species and monitor water levels or depths on dry years.

Habitat Research:

---- Define preferred habitat in order to guide future restoration efforts and focus on habitat protection efforts.

Population Monitoring:

---- Continued monitoring of the Long Island populations.

Relocation/Reintroduction:

---- Establish populations after dewatering of streams and lakes due to groundwater withdrawals. Zeeks Pond suffered this in 2002 and restorative measures are needed.

VII. References

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Date last revised: July 16th, 2013