

Species Status Assessment

Class: Osteichthyes (bony fishes)
Family: Centrarchidae (sunfish)
Scientific Name: *Enneacanthus obesus*
Common Name: Banded sunfish

Species synopsis:

The banded sunfish occurs in slow freshwater areas along the Atlantic Coast from northwestern to eastern areas of Florida, and northward along the coast to southern New Hampshire. Banded sunfish occur in ponds, bogs, and medium-sized streams with dense aquatic vegetation in the southeastern corner of New York where it is native in 2 of 18 watersheds. It appears to be extirpated from the Newark Bay watershed where it was known in only one confirmed pond and two unconfirmed areas. On Long Island, the range of banded sunfish is about half of what it was in 1938 but it remains common in about 30 ponds. Some of these ponds are considered vulnerable to dewatering for residential and urban development, and the species is classified as Threatened in New York. Banded sunfish is the more restricted of the two NY species of sunfish in the genus *Enneacanthus*, and the two might be confused if they had overlapping ranges, but they do not overlap any longer.

I. Status

a. Current and Legal Protected Status

- i. **Federal** None **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:

Species of Northeast Regional Conservation Concern (Therres 1999)

Status Discussion:

Banded sunfish has a global rank of Secure due to its large range and large number of occurrences. Its New York state rank of Critically Imperiled/Imperiled is due to its restricted distribution within the state (NatureServe 2012).

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: Region 5 - Northeast

Time Frame Considered: _____

c. Adjacent States and Provinces

CONNECTICUT **Not Present** _____ **No data** _____

i. Abundance

____ **declining** ____ **increasing** ____ **stable** ____ **unknown**

ii. Distribution:

____ **declining** ____ **increasing** ____ **stable** ____ **unknown**

Time frame considered: _____

Listing Status: _____ **Special Concern** _____ **SGCN?** Yes _____

MASSACHUSETTS **Not Present** _____ **No data** _____

i. Abundance

____ **declining** ____ **increasing** ____ **stable** ____ **unknown**

ii. Distribution:

____ **declining** ____ **increasing** ____ **stable** ____ **unknown**

Time frame considered: _____

Listing Status: _____ **Not Listed** _____ **SGCN?** Yes _____

NEW JERSEY **Not Present** _____ **No data** _____

i. Abundance

____ **declining** ____ **increasing** ____ **stable** ____ **unknown**

ii. Distribution:

____ **declining** ____ **increasing** ____ **stable** ____ **unknown**

Time frame considered: _____

Listing Status: _____ **Not Listed** _____ **SGCN?** Yes _____

Trends Discussion:

The short-term trend over the past 10 years or three generations is likely relatively stable. The long-term trend has shown declines where habitat has been drained for development, but the overall extent of habitat may not be very large (NatureServe 2012). In New York, banded sunfish have historically been found in about 30 bodies of water and their range is currently not declining (or gone or dangerously sparse) in 1 of the 2 watersheds. Both habitat and abundance appears to be stable on Long Island, except for years when the water table goes down and ponds dry up. The Newark Bay range is no longer inhabited. A generalized indication of the trend came from comparisons for pond samples before and after 1977; there have been more catches since the 70s, all in the Long Island watershed (84 of 89). Since 1993 there are 93 catches (some with more catches per site). The distribution of this species among sub-basins within the Long Island watershed has not changed substantially. There is one HUC-10 unit on Long Island that has maintained occupancy. However, the other two HUC-10 units in Newark Bay watershed have been unoccupied since catches in 1936-39.

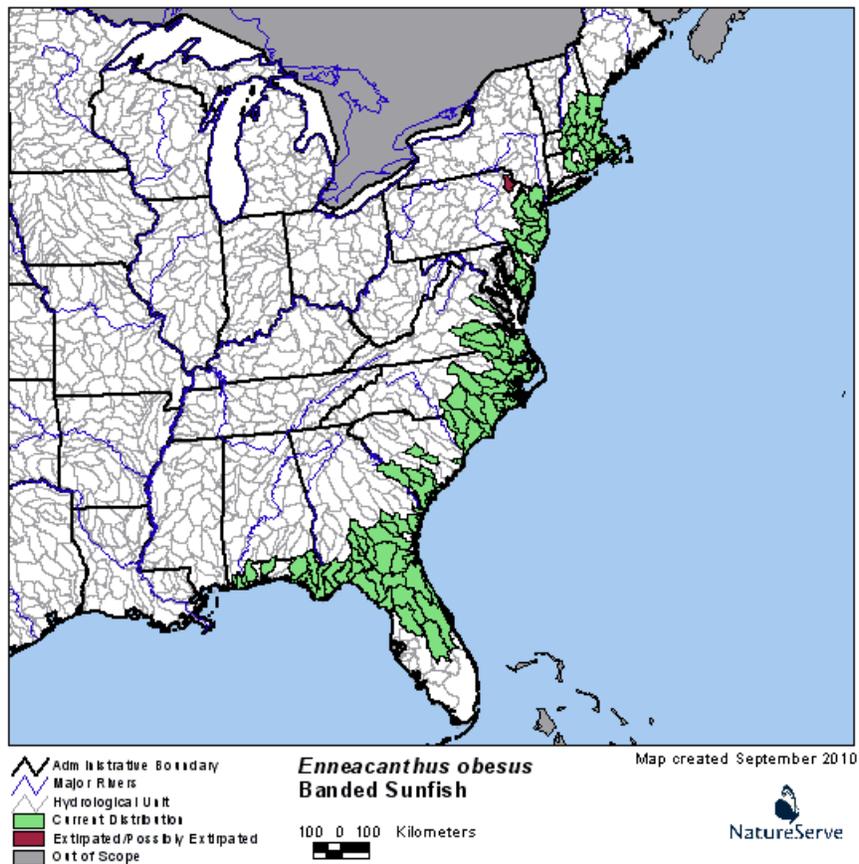


Figure 1. U.S. distribution of banded sunfish by watershed (NatureServe 2012).

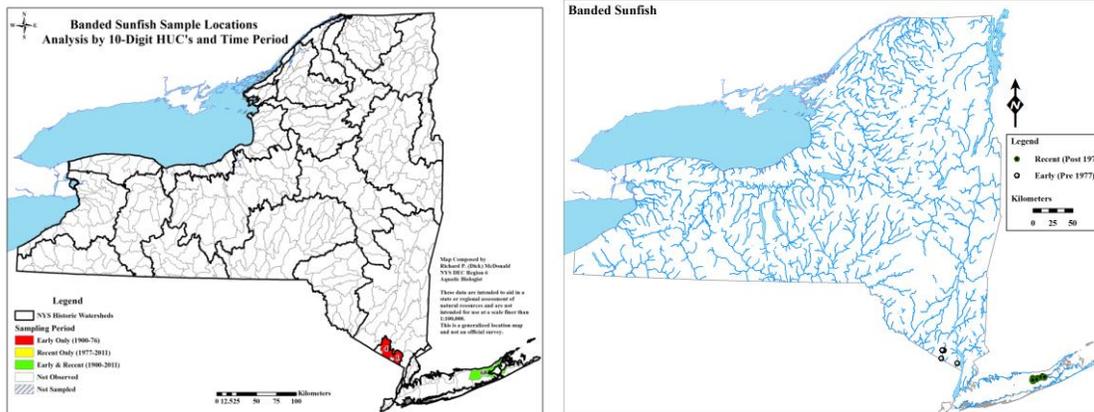


Figure 2. Banded sunfish distribution in New York, depicting fish sampled before 1977 and from 1977 to current time, showing the corresponding HUC-10 units where they were historically found along with the number of records. Left picture is the New York range of banded sunfish.

Watershed name	Total # HUC10	Early only	Recent only	both	Watershed status
Newark Bay	2	2	0		loss
Long Island	1	0	0	1	
Sum	3	2		1	

Table 1. Records of rare fish species in hydrological units (HUC-10) according to their watersheds in early and recent time periods (before and after 1977). 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)	_____	_____18_____	<u>3/20 HUC units</u>
prior to 1980	_____	_____	_____
prior to 1990	_____	_____	_____

Details of historic occurrence:

Banded sunfish were historically rare in the Newark Bay basin but not within the Long Island watershed. This species was historically found in the Passaic drainage and two lakes in the Palisades Interstate Park. These last two areas have been doubted for authenticity because they are

not at all typical of coastal lowlands. Specimens were recently reexamined by an expert for this genus and were confirmed.

Current	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
(post 1977)	_____	_____56_____	<u>1/20 HUC units</u>

Details of current occurrence:

The distribution of this species within one subbasin of the Long Island watershed has maintained occupancy and has not changed substantially. It has been collected from eastern Long Island in the Peconic River drainage near Riverhead where they inhabit about 30 ponds, as shown by extensive sampling in 1994–99 and 2007–11. Other previous sampling found banded sunfish in 4 additional areas since 1985. Several more waters may still be inhabited since some of the historic sites were not sampled during this program. In 1938, there were two additional ponds containing this species, but the ponds no longer exist.

However, the other two HUC-10 units in Newark Bay watershed have remained unoccupied since catches of 1939. The sites in the Passaic drainage and Interstate Park appear to be no longer inhabited. There are 337 HUC-10 units across the entire state and only 20 HUC units (total for these two watersheds) where they have occurred.

New York's Contribution to Species North American Range:

% of NA Range in New York	Classification of New York Range
<input type="checkbox"/> 100 (endemic)	<input checked="" type="checkbox"/> Core
<input type="checkbox"/> 76-99	<input type="checkbox"/> Peripheral
<input type="checkbox"/> 51-75	<input type="checkbox"/> Disjunct
<input type="checkbox"/> 26-50	Distance to core population:
<input checked="" type="checkbox"/> 1-25 (maybe 5%)	_____

IV. Primary Habitat or Community Type:

1. Headwater/Creek
2. Eutrophic Pond
3. Coastal Plain Pond
4. Open Acidic Peatlands

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:

Banded sunfish inhabit darkly stained and sluggish waterbodies including ponds, lakes, backwaters of streams and rivers, and bogs with abundant vegetation and substrates consisting of sand and mud (Smith 1985, NatureServe 2012). Preferred areas are often shallow with vegetation over detritus-laden bottoms and bog water as acidic as 3.7 (pH) has been inhabited.

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:

Spawning occurs April through July and some females are known to spawn at one year of age. The banded sunfish have a very restricted home range and will not swim great distances (Cooper 1983).

VI. Threats:

Because the only remaining New York population of the banded sunfish is located in eastern Long Island, it is considered to be vulnerable to environmental catastrophes. Fortunately, several of the occupied ponds are isolated and without surface water connections to the Peconic system. The ground water pumping that continues to lower the water level could also threaten these waters during drought conditions. Low water conditions in Zeeks Pond (at Brookhaven National Lab) in 2002 were thought to cause the banded sunfish to die, but they recovered from a tiny wet hole refugia.

Other possible threats include the presence of largemouth bass (*Micropterus salmoides*), which is not typically present in waters that contain a high abundance of banded sunfish; and the spread of phragmites, which can outcompete native vegetation such as sweet pepper bush (*Clethra alnifolia*) and smartweed (*Polygonum* spp).

Banded sunfish was classified as “moderately vulnerable” to predicted climate change in an assessment of vulnerability conducted by the New York Natural Heritage Program (Schlesinger et al. 2011).

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

No Unknown

Yes

The banded sunfish 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:

Continued monitoring of the Long Island populations and habitat protection are necessary to sustain current populations of banded sunfish. Permit reviews may be necessary for existing and new ground water wells on Long Island to avoid excessive drawdown and ensure ponds provide adequate habitat (NYSDEC 2005).

Conservation actions following IUCN taxonomy are categorized in the following table.

Conservation Actions	
Action Category	Action
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Invasive/Problematic Species Control
Law/Policy actions	Legislation Change/Implementation (permit reviews for existing or proposed ground water wells)

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

Habitat Monitoring:

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

Habitat Research:

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

Population Monitoring:

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

VII. References

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