

Species Status Assessment

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

Species synopsis:

Bluebreast darter occur in large streams from Tennessee and North Carolina through Kentucky, Illinois, Indiana, Ohio, West Virginia, Pennsylvania, and southwestern New York. In New York it is native to the Allegheny watershed and prefers stream sections with fast-flowing currents and sandy gravel or large stone substrates. Recent surveys record infrequent catches of bluebreast darter below detection levels prior to 1973. Abundance remains low and the habitat needs are very specific.

I. Status

a. Current and Legal Protected Status

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

b. Natural Heritage Program Rank

- i. **Global** G4
- ii. **New York** S1 **Tracked by NYNHP** Yes

Other Rank:

Species of Northeast Regional Conservation Concern (Therres 1999)

Status Discussion:

Bluebreast darter is globally ranked as Apparently Secure and state ranked as Critically Imperiled by the NYNHP. This species has a spotty distribution in the northern and central portions of the eastern United States and is threatened by degraded water quality (NatureServe 2012). Bluebreast

dartar is classified as Endangered in New York because it is rare and not because of recent declines in abundance.

II. Abundance and Distribution Trends

a. North America

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Time frame considered: over past 3 generations (NatureServe 2012)

b. Regional

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Regional Unit Considered: Region 5 - Northeast (Species of Concern)

Time Frame Considered: _____

Monitoring in New York.

Monitoring programs are carried out by the NYSDEC Rare Fish Unit, 1998-2012.

Trends Discussion:

Across its range, bluebreast darter is found in several disjunct populations in Tennessee, North Carolina, Kentucky, Illinois, Indiana, Ohio, West Virginia, Pennsylvania, and New York (Figure 1). Its range-wide short-term trend is thought to be relatively stable (NatureServe 2012). New York's position within this range is disjunct. In New York, bluebreast darter was historically found in two waters in the Allegheny watershed but their abundance is low and habitat needs are very specific.

There have been continuing and very low level catches in comprehensive stream surveys of the watershed, in about 2% of the river samples since 1985. The distribution of this species among subbasins (HUC 10) within one watershed has increased slightly, with records from one of the units prior to 1977 and from an additional one unit since 1976. Statewide, the number of individual site records for this species is 15 for all time periods, 13 in the last 30 years, and 10 since 1993. Elements of recovery of bluebreast darter abundance in PA was noted by Koryak et al. (2009).

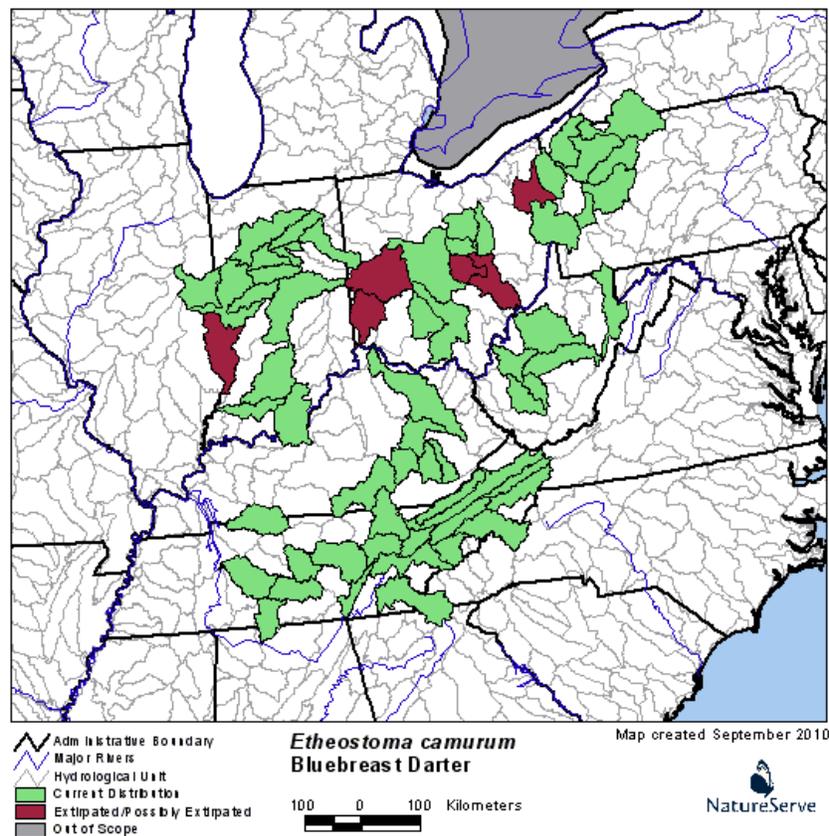


Figure 1. U.S. distribution of bluebreast darter by watershed (NatureServe, 2012).

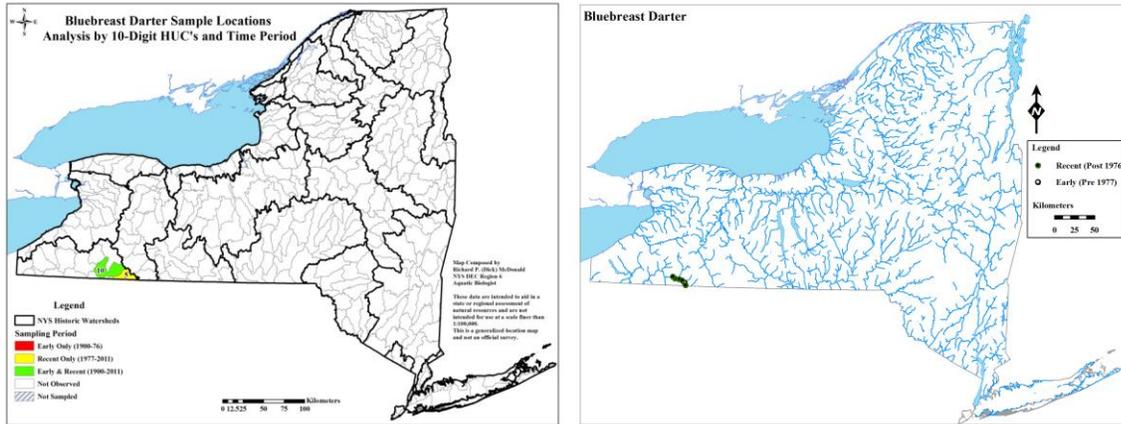


Figure 2. Bluebreast darter distribution in New York depicting fish sampled before 1977 and from 1977 to present time, also showing the corresponding HUC-10 units where they were found along with the number of records. Left map depicts range of bluebreast darter in New York.

Watershed	Total # HUC10	Early only	Recent only	both
Allegheny River	2	0	1	1

Table 1. Records of bluebreast darter 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>2 site records</u>	<u>1/18 watersheds</u>
prior to 1980	_____	_____	_____
prior to 1990	_____	_____	_____

Details of historic occurrence:

There are no early collection sites in New York, but nearby sites in the Pennsylvania reaches of the Allegheny River and French Creek (Raney 1938, Cooper 1983) contained bluebreast darter. This species has been caught in the Allegheny River from Portville to Allegany (Figure 2) where it probably also lived historically, but individuals were not taken until 1973 (by Eaton).

Current	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
(since 1977)	_____	<u>13 site records</u>	<u>1/18 watersheds</u>

Details of current occurrence:

Recent surveys from Oswayo Creek near the state line at Carroll, NY, contained bluebreast darter in 1989 (Daniels 1989), 1992 (contract studies by Penn State Univ., letter from Martin Gutowski, 1992) and 2001-08 (DEC and NYSM).

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 type="checkbox"/> Core
<input type="checkbox"/> 76-99	<input type="checkbox"/> Peripheral
<input type="checkbox"/> 51-75	<input checked="" type="checkbox"/> Disjunct
<input type="checkbox"/> 26-50	Distance to core population:
<input checked="" type="checkbox"/> 1-25	<u>400 miles</u>

IV. Primary Habitat or Community Type:

1. Medium River, Low-Moderate Gradient, Assume Moderately Buffered, Transition
2. Unconfined River

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 bluebreast darter prefers warmer stream sections, typically clear or slightly turbid, with moderately swift to fast runs and riffles current, where the substrate consists of sandy gravel and large stones. The stones provide protection for the darter, which is usually found behind, beside or under the stones. This species is much less commonly found in areas of large slab rock and in shallow runs over gravel; it has low tolerance of silt (NatureServe 2012).

At time of spawning, the females bury themselves in sand and the eggs are laid in the sand or fine gravel beside large rocks at heads of riffles, and in riffles (Jenkins and Burkhead 1994, NatureServe 2012). Sampling for this species was most successful in June, and the faster stream velocities were preferred (Stauffer et al.1993). In New York, the bluebreast darter is found only in the upper

reaches of the Allegheny drainage basin. Schwartz (1965) found them in the lower 2/3 of riffles in April, in the deepest portion of the riffle in spring and they were absent from the riffle in November. Habitat measurements were completed in 2007-08 by NYS Museum (Morse et al. 2009).

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 takes place in late spring or early summer with eggs hatching in 7 to 10 days. Bluebreast darter tend to move upstream from their winter habitat to spawn. Males are territorial (Werner 2004).

VI. Threats:

The Kinzua Dam in Pennsylvania prohibits upstream migrations of the bluebreast darter from the lower section of the Allegheny River. Pollution remains as a threat to existing, disparate populations in New York waters of the Allegheny. This is a single river reach with New York's only population (plus the records for Oswayo Creek), and its abundance is sparse. The prospect of a fish kill, as have occurred earlier, could be a serious threat (Brezner and Pulaski 1972). This species does not tolerate even moderate degrees of siltation (Jenkins and Burkhead 1994). The expert panel of 1993

felt the species was not in eminent danger of extinction. Even though the population is limited, its habitat, reproduction and general health appear stable.

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

No Unknown

Yes

The bluebreast darter 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.

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:

Inventory Needs: Should be monitored closely

Protection Needs: Low pollution, turbidity habitats must be maintained

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

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

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

Habitat Research:

---- Inventory the habitat requirements of this species and its co-inhabitants in the Allegheny and outside New York State, part of the same State Wildlife Grants project.

Habitat Restoration:

---- Habitat losses and restoration are part of a State Wildlife Grants project from 2003 that is directed at the Allegheny watershed.

Population Monitoring:

---- Extensive sampling will be part of a State Wildlife Grants project in 2004 on the Allegheny River near Weston Mills and in lower Oswayo Creek.

VII. References

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