

Species Status Assessment

Class: Osteichthyes (bony fishes)
Family: Percidae (perch)
Scientific Name: *Percina macrocephala*
Common Name: Longhead darter

Species synopsis:

The longhead darters historical range included the Ohio River basin from southwestern New York, western Pennsylvania, and eastern Ohio southward through Kentucky, West Virginia, and Tennessee. Populations in North Carolina, western Virginia, and in the upper Tennessee River drainage in eastern Tennessee are now regarded as a distinct species (*P. williamsi*) (NatureServe 2012). Many populations are believed to be extirpated, resulting in a relatively widespread but spotty distribution.

Longhead darters occur in medium-sized and larger streams with clean gravel and are native to the Allegheny watershed. Range and abundance have increased in New York over the last 20 years and populations seem to be secure.

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** G3
ii. **New York** S1 **Tracked by NYNHP** Yes

Other Rank:

Species of Northeast Regional Conservation Concern (Therres 1999)
IUCN Red List Category: Near Threatened
American Fisheries Society Status: Vulnerable (2008)

Status Discussion:

Longhead darter is globally ranked as Vulnerable because this species is rare and highly localized with a spotty distribution in the Ohio River basin. It has become extirpated in several portions of its range due to a narrow habitat preference and is threatened by habitat destruction/degradation (pollution, siltation, impoundments) (NatureServe 2012). It is ranked Critically Imperiled and state listed as Threatened in New York due to its restricted distribution and abundance by habitat requirements.

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: Based on long-term trends (NatureServe 2012)

b. Regional

i. Abundance

 X declining ___increasing ___stable ___unknown

ii. Distribution:

 X declining ___increasing ___stable ___unknown

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

Time Frame Considered: _____

c. Adjacent States and Provinces

CONNECTICUT	Not Present <u> X </u>	No data _____
MASSACHUSETTS	Not Present <u> X </u>	No data _____
NEW JERSEY	Not Present <u> X </u>	No data _____
ONTARIO	Not Present <u> X </u>	No data _____
QUEBEC	Not Present <u> X </u>	No data _____
VERMONT	Not Present <u> X </u>	No data _____
PENNSYLVANIA	Not Present _____	No data _____

i. Abundance

___ declining ___ increasing ___ stable ___ unknown

ii. Distribution:

___ declining ___ increasing ___ stable ___ unknown

Time frame considered: _____

Listing Status: _____ Not Listed (S2S3); formerly Threatened ___ SGCN? ___ Yes

d. NEW YORK

No data _____

i. Abundance

___ declining ___ increasing X stable ___ unknown

ii. Distribution:

___ declining ___ increasing X stable ___ unknown

Time frame considered: _____

Monitoring in New York.

There are monitoring programs carried out by the Rare Fish Unit, 1998-2012.

Trends Discussion:

Collecting methods may have underestimated abundance and distribution in some northern populations. Recent efforts directed specifically at longhead darters have been more successful, but perhaps abundance is cyclic (NatureServe 2012).

Over the long term, extent of occurrence, area of occupancy, number of subpopulations, and population size clearly have declined, and this darter has been extirpated from much of its range (Page 1978, NatureServe 2012).

In West Virginia, the species is still relatively common in the Elk River system, but recent land use changes resulting from coal mining have begun to affect aquatic habitats there. In Kentucky, the species is probably extirpated from the Cumberland and Kentucky rivers, each of which has one substantiated record, but current status is relatively stable in Kentucky. In Tennessee, the species is rare to extirpated in various streams, and it has not been found in the Cumberland River since 1891 (NatureServe 2012).

In New York, longhead darter has historically been found in five waters; it still occurs in these five. The population appears to be stable in the eastern and western sub-basins of the Allegheny but its status is uncertain in French Creek.

There has been an increase in catches (as % frequency occurrence) in comprehensive stream surveys of the watershed shifting from 3% in the 1930s and to 16% in 2000s.

Statewide, the number of records for this species in the last 30 years has been 86, compared to 27 reports prior to 1977. The distribution of this species among sub-basins within this watershed (HUC 10) has not changed substantially, with records from 7 of the units from all time periods and from 7 units since 1976.

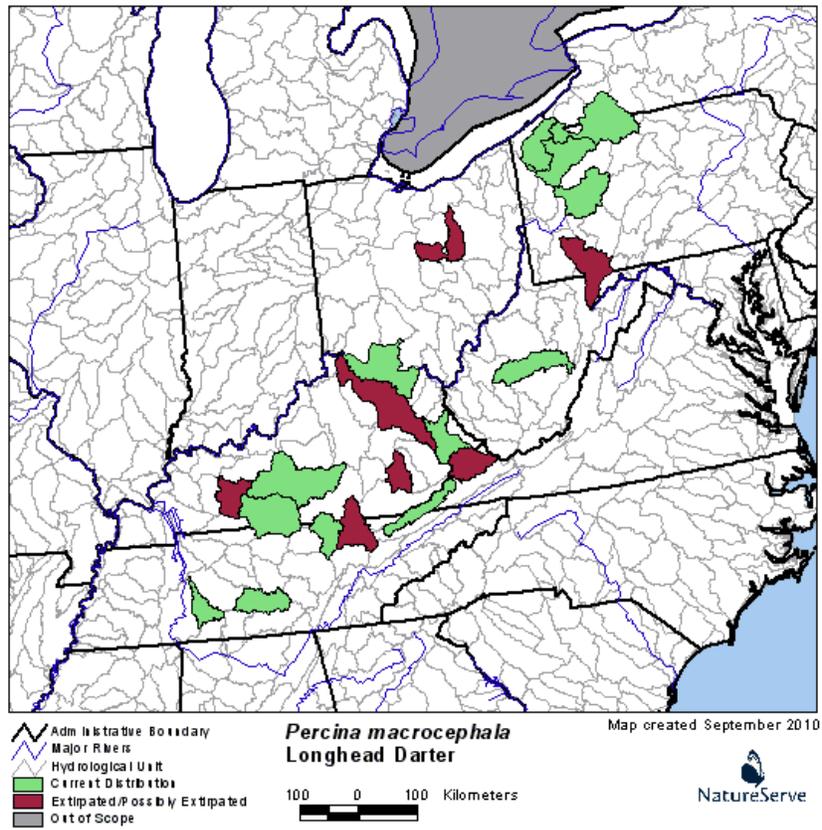


Figure 1. U.S. distribution of longhead darter by watershed (NatureServe 2012).

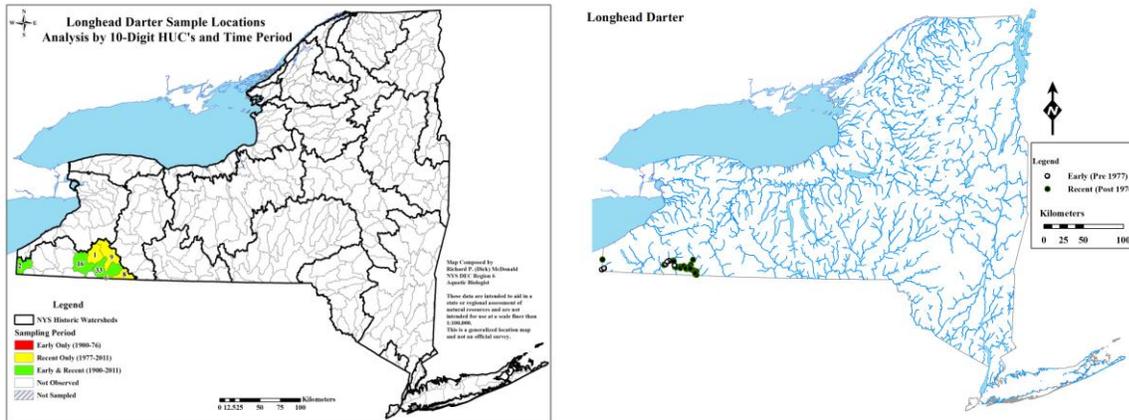


Figure 2. Longhead darter distribution in New York, depicting fish sampled before 1977 and from 1977 to current time, shown with the corresponding HUC-10 units where they were found, along with the number of records. Right map shows New York range of longhead darter.

Watershed name	Total # HUC10	Early only	Recent only	both
Allegheny	7		4	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>27 reports</u>	<u>1/18 watersheds</u>
prior to 1980	_____	_____	_____
prior to 1990	_____	_____	_____

Details of historic occurrence:

In New York State, the longhead darter has lived in the Allegheny River and French Creek, from the earliest surveys of 1937. The area now covered by Allegheny Reservoir included some of the historic sites and it is no longer found there. French Creek records are for 1937, 1972 and 1973.

Current	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
(since 1977)	_____	<u>86 reports</u>	<u>1/18 watersheds</u>

Details of current occurrence:

Longhead darter currently inhabit the Allegheny River, three nearby tributaries, and French Creek. Recorded catches were from the Allegheny River since 1960 at Portville, Carrollton and Weston Mills and at Allegany (village) (Becker 1982, Daniels 1989). Tributary samples came from the lower segments of Great Valley Creek, Olean Creek, and Oswayo Creek (Becker 1982, Gutowski letter dated 1992). Yochim (1981) felt their abundance in 1980 was about the same as it was in 1936, and sampling efforts by Daniels in 1985-99 resulted in many captures at 21 out of 51 sites. This species was not caught in French Creek during the major studies of darters 1979-1992 and 1998-2000, and the unverified record from 1995 (Goforth 1997) remains as suspicious. There was a record from West Branch French Creek in 1998 (NYSM). Their recent absence from French Creek might have resulted from lower-water conditions causing them to recede back into Pennsylvania. The closest record in Pennsylvania is from more than 30 miles downstream at Venango.

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 checked="" 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>250 miles</u>

IV. Primary Habitat or Community Type:

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

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:

Longhead darter occurs in moderate to large-sized, clear streams with swift currents and bottoms ranging from gravel and boulders to weed beds. Sometimes this species has been caught in pools immediately downstream of, rather than in the riffle (Page 1978, Morse et al. 2009). Predictions of their range were completed by McKenna et al. (2012 in preparation). Spawning presumably occurs in gravel shoals.

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:

Longhead darters have a relatively short life span, living three to four years. Sexual maturity is not reached until two years of age. Spawning takes place in spring and there is no parental care given to eggs or larvae (NatureServe 2012).

VI. Threats:

Declines in the populations in other areas have been caused by pollution; siltation resulting from agricultural, industrial, and municipal development; and collection by hobbyists (Jenkins and Burkhead 1994). In New York there is no substantive evidence of decline.

Populations in the south and in New York are probably most affected by agricultural land uses that deposit silt in pools, potentially smothering eggs and larvae. In West Virginia, stream sedimentation resulting from coal mining operations may be the biggest threat. Many populations in the southern portion of the range are isolated by impoundments or other habitat barriers (Natureserve 2012).

Longhead darter was classified as “presumed stable” 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 longhead 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:

Actions are needed to control sediment runoff from row crop agriculture, and degradation of riparian zones and aquatic habitat by livestock. Restoring riparian vegetation, fencing livestock from streams, and providing alternate water sources are recommended. Channelization should be avoided, as should removal of woody debris (snagging and dragging) from stream margins. Where these practices have taken place, natural processes should be allowed to proceed so that the streambed and stream banks become stabilized. Removal of barriers to fish movement may be needed in some watersheds (NatureServe 2012).

Apparent variations in abundance in a particular locality may be the result of cyclic population fluctuations, or they could reflect differences in the effectiveness of various survey methods. Regular monitoring using standardized methods is needed to clarify this situation (NatureServe 2012).

The most immediate research need is to determine the actual current range-wide distribution and abundance, movement/dispersal patterns, and metapopulation dynamics. A more complete understanding of life history (more details on spawning sites, and larval juvenile habitat requirements for example) will help ensure management activities are appropriate to protect habitats and other factors necessary to complete all life history stages (NatureServe 2012).

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

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

Population Monitoring:

— This species has not been caught in recent years in French Creek, and occasional sampling should continue for updating records in both this and the central part of the Allegheny basin.

VII. References

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