

Species Status Assessment

Class: Actinopterygii (ray-finned fishes)
Family: Cyprinidae (minnow)
Scientific Name: *Notropis chalybaeus*
Common Name: Ironcolor shiner

Species synopsis:

Ironcolor shiner occupies a large range that includes the lowlands in central United States and the Atlantic Coast from southern New York to southern Florida and across the Gulf Slope. Populations occur in Texas, Illinois, Iowa, Wisconsin, Indiana and Michigan. There are many disjunct populations, especially in the Midwest, where declines and extirpations have occurred as a result of stream siltation and water pollution, and New York is located on the periphery of its range. It is native to 2 of 18 watersheds in New York: Delaware and Newark Bay. It is now extirpated from Newark Bay, but seems secure in the Neversink portion of the Delaware watershed. It prefers medium-sized streams with submerged aquatic vegetation.

I. Status

a. Current and Legal Protected Status

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

b. Natural Heritage Program Rank

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

Other Rank:

American Fisheries Society Status: Vulnerable (01Aug2008)

Status Discussion:

Ironcolor shiner is globally ranked as Apparently Secure by NatureServe. It occupies a large range in the lowlands of the eastern and central United States with many disjunct populations, especially in the Midwest, where declines and extirpations have occurred as a result of stream siltation and water pollution. In New York, this species is ranked as Critically Imperiled because only a single population occurs in 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: 1980-2000

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 <input checked="" type="checkbox"/>	No data _____
MASSACHUSETTS	Not Present <input checked="" type="checkbox"/>	No data _____
ONTARIO	Not Present <input checked="" type="checkbox"/>	No data _____
QUEBEC	Not Present <input checked="" type="checkbox"/>	No data _____
VERMONT	Not Present <input checked="" type="checkbox"/>	No data _____

Monitoring in New York.

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

Trends Discussion:

Short-term trends show a decline of 10-30%. This has been documented in the northern part of the range as well as in Mississippi where surveys of 11 historical sites and 13 additional sites in close proximity to historical sites yielded no *N. chalybaeus*; three specimens were, however, found in one new locality. Many populations in Missouri have disappeared in the last 30 years, and the continued survival of this species in Missouri is doubtful (NatureServe 2012).

In New York, ironcolor shiner was historically found in 2 waters and their range is declining (or gone or dangerously sparse) in 1 of 2 watersheds. Abundance appears to be stable, but the critical parts of its habitat and its trend over time in the Basha Kill has not been studied.

There have been low levels of catches (as % frequency occurrence) in comprehensive stream surveys of Delaware watersheds staying at 1% in the 1930s through the 2000s. The Newark Bay locations were not sampled after the 1930s, and this population has become extirpated. Areas farther downstream in New Jersey are separated by an impoundment.

The distribution of this species among sub-basins (HUC 10) within the two watersheds has changed in a similar pattern, with records from fewer units in the recent period. Overall there are records from two of the units for all time periods, and from only one in recent times, resulting in a major loss of its former range. Statewide, the number of individual site records for this species has been 21 for all time periods, 6 in the last 30 years, and 3 since 1993.

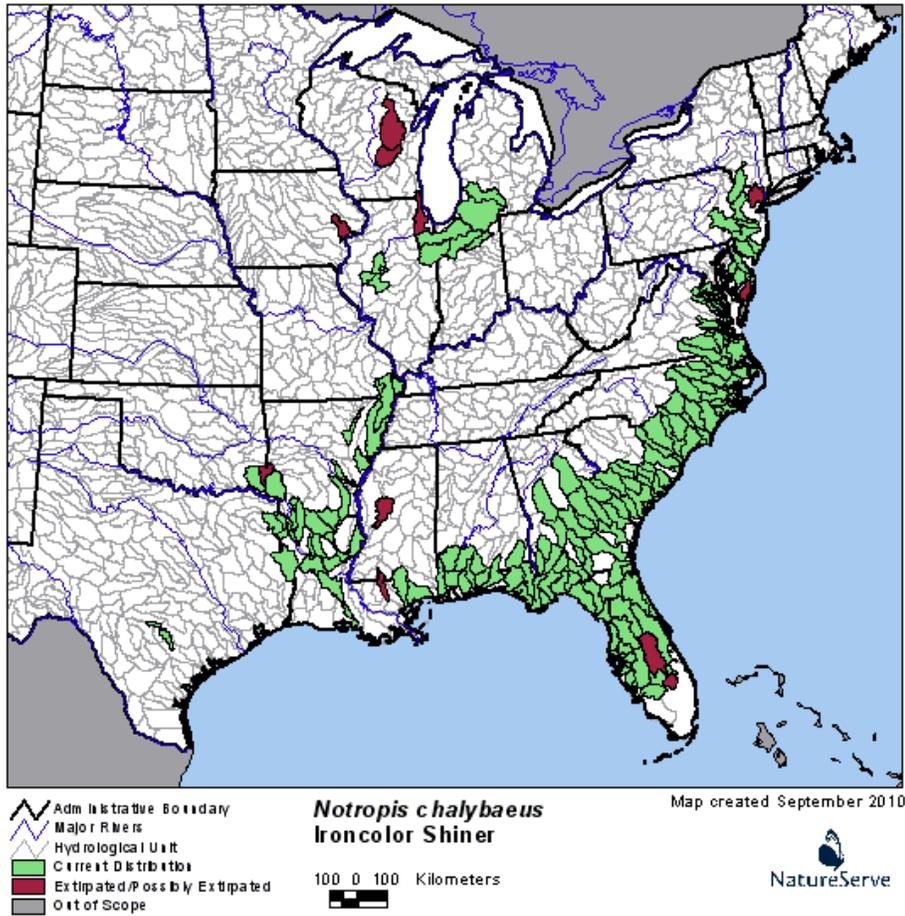


Figure 1. Distribution of ironcolor shiner by watershed in the United States (NatureServe 2012).

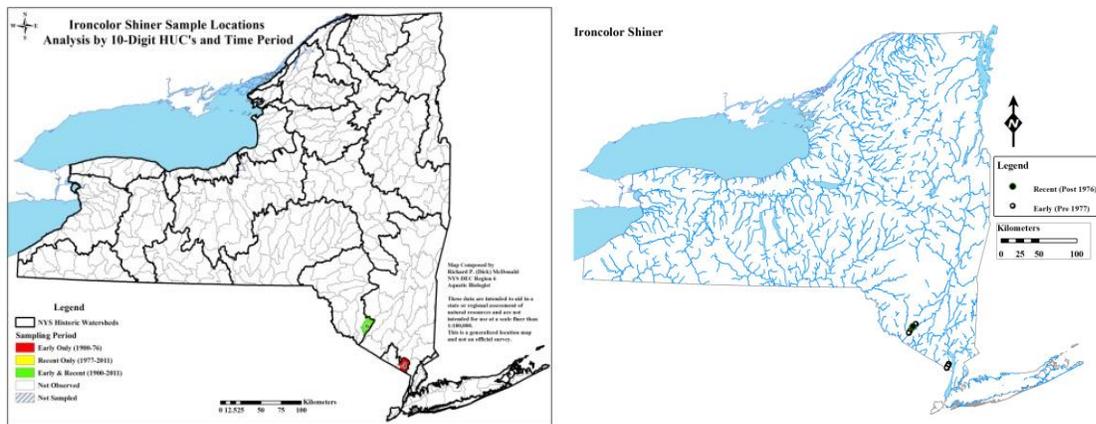


Figure 2. Ironcolor shiner distribution in New York, depicting fish sampled before 1977 and from 1977 to current time, also shown with the corresponding HUC-10 units where they were found and the number of records. Left map shows the range of ironcolor shiner in New York.

Watershed name	Total # HUC10	Early only	Recent only	both	Watershed status
Delaware	1	0	0	1	
Newark Bay	1	1	0	0	loss
sum	2	1	0	1	

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>15 site records</u>	<u>2 of 18 watersheds</u>
prior to 1980	_____	_____	_____
prior to 1990	_____	_____	_____

Details of historic occurrence:

During early biological surveys, this minnow was captured in the Basha Kill (a tributary of the Neversink River) near Brookville Station and Cuddebackville and in the Hackensack River (by Nanuet) and its tributary, Nauraushaun Brook.

Current	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
	_____	<u>3 site records</u>	<u>1 of 18 watersheds</u>

Details of current occurrence

Currently, ironcolor shiner is common in the Basha Kill, its only known location in New York. Keene et al. (1980) found it throughout the five mile marsh (Bashakill) at Brookville. Sampling farther downstream of the marsh complex, at Cuddebackville, has not produced this species in recent years, and the quantity of suitable habitat there is much less. It is apparently no longer present in the Hackensack River.

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 type="checkbox"/> Disjunct
<input type="checkbox"/> 26-50	Distance to core population:
<input checked="" type="checkbox"/> 1-25	<u>800 miles</u>

IV. Primary Habitat or Community Type:

1. Small River, Low Gradient, Moderately Buffered, Neutral, Transitional 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:

The ironcolor shiner has been observed in deep pool areas of creeks and small rivers; it has also been observed in water bodies where a moderate current exists. Sand seems to be important for spawning. It prefers clear, well-vegetated water. Aquatic plants found in areas that this species inhabits include bladderwort, pondweed and Elodea. A downstream section of the Delaware River in Pennsylvania, contained ironcolor shiner in 1996, and there may be similar areas in New York.

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:

Little is known about the life history in the Northeast. Spawning occurs in mid-April through July in the northern portion of its range and as late as September in Florida. Eggs hatch in about two days. Sexually maturity is reached at one year (Werner 2004, NatureServe 2012). It swims in medium-sized schools of mixed year classes and feeds on small aquatic and terrestrial insects, and other invertebrates.

VI. Threats:

At the Freshwater Fish SGCN meeting of experts held in November 2013, no threats were identified for this species.

However, the single population of ironcolor shiner in New York (at the Basha Kill wetlands) is vulnerable to extirpation should a catastrophic event occur. Fish kills have occurred in Bashakill Marsh in midwinter and in late summer from oxygen depletion as early as 1961 (Hermes, undated).

The large marsh complex is owned and managed by NYSDEC as a wildlife management area (Hermes undated). Water levels in the marsh are controlled by a large sand/gravel accumulation (and to a lesser degree a short concrete structure) at the lower end of the wetland, and major

changes in this could be detrimental to the ironcolor shiner. The management plan recognizes this threat to the entire wetland system and discusses preventive measures.

Declines in other northern states have been attributed to siltation, increased turbidity, and pollution (NatureServe 2012).

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

No Unknown

Yes

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

The Bashakill Wetlands is managed by the NYSDEC as a wildlife management area, providing quality habitat and recreational opportunities.

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 below.

Conservation Actions	
Action Category	Action
Land/Water Management	Habitat/Natural Process Restoration
Land/Water Management	Site/Area Management

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

Population Monitoring:

Survey of the Delaware River and lower section of the Basher Kill should be completed.

VII. References

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