

Species Status Assessment

Class: Osteichthyes (bony fishes)
Family: Cyprinidae (minnow)
Scientific Name: *Notropis amoenus*
Common Name: Comely shiner

Species synopsis:

The comely shiner occurs in Atlantic Slope drainages (upper Coastal Plain and Piedmont) from the Hudson and Susquehanna watersheds southward through the Cape Fear drainage in North Carolina. It occurs in medium-sized streams with clean gravel and is native to the Chemung, Susquehanna, and Delaware watersheds in New York, also occurring as a non-native species in four adjacent watersheds. Populations seem secure in the Delaware watershed but there has been a decline in frequency of occurrence in both the Chemung and Susquehanna watersheds.

I. Status

a. Current and Legal Protected Status

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

b. Natural Heritage Program Rank

- i. **Global** G5
ii. **New York** S3 **Tracked by NYNHP** Yes

Other Rank:

None.

Status Discussion:

Comely shiner is globally ranked as Secure due to its large number of subpopulations and locations. In New York it is ranked as Vulnerable due to declines in frequency of occurrence in the Chemung and Susquehanna watersheds (NatureServe 2012). Classifications in additional neighbor states include SGCN in West Virginia (S3S4).

II. Abundance and Distribution Trends

a. North America

i. Abundance

___ declining ___ increasing X stable ___ unknown

ii. Distribution:

___ declining ___ increasing X stable ___ unknown

Time frame considered: 10 years or 3 generations

b. Regional

i. Abundance

___ declining ___ increasing X stable ___ unknown

ii. Distribution:

___ declining ___ increasing X stable ___ unknown

Regional Unit Considered: Region 5 - Northeast

Time Frame Considered: _____

c. Adjacent States and Provinces

| | |
|---------------|--------------------------------------|
| CONNECTICUT | Not Present <u> X </u> No data _____ |
| MASSACHUSETTS | 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 _____ |

Trends Discussion:

In New York, comely shiner were historically found in over 50 waters and their range appears to be declining (or gone or dangerously sparse) in at least 2 of the 3 watersheds where native. It still occurs in two of these non-native watersheds: the southernmost part of the Oswego watershed by Seneca Lake and the lower Hudson. Samples from the 2000s showed presence at 21 locations, but no individuals from Chemung, Mohawk or Newark Bay. Argent et al. (1998) reported on dramatic changes in this species in Pennsylvania.

Early records from the Susquehanna (1935) were confounded with mistaken identifications (Snelson 1968), and catches from that period were adjusted according to later records (from many of those same specimens) stored at museums.

The distribution of this species among sub-basins (HUC 10) within the three watersheds has changed in a similar pattern, with records from fewer units in the recent time period. Overall there are records from 33 units for all time periods in its native range, and from recent times there are 14 units, showing a loss of its former range. The Chemung watershed had the most dramatic decline in range, and both Chemung and Susquehanna had significant declines in frequency of occurrence between the 1930s and 2000s. Statewide, the number of individual site records for this species has been 142 for all time periods, 47 in the last 30 years, and 20 since 1993.

Most of the recent records—since 1993—are from the Delaware (11), Susquehanna (8) and lower Hudson (1), and there are none from the Chemung, Mohawk or Newark Bay. The population appears stable in the Lower Hudson and possibly Delaware, but has disappeared from many streams of the Susquehanna and Chemung watersheds. This trend causes concern.

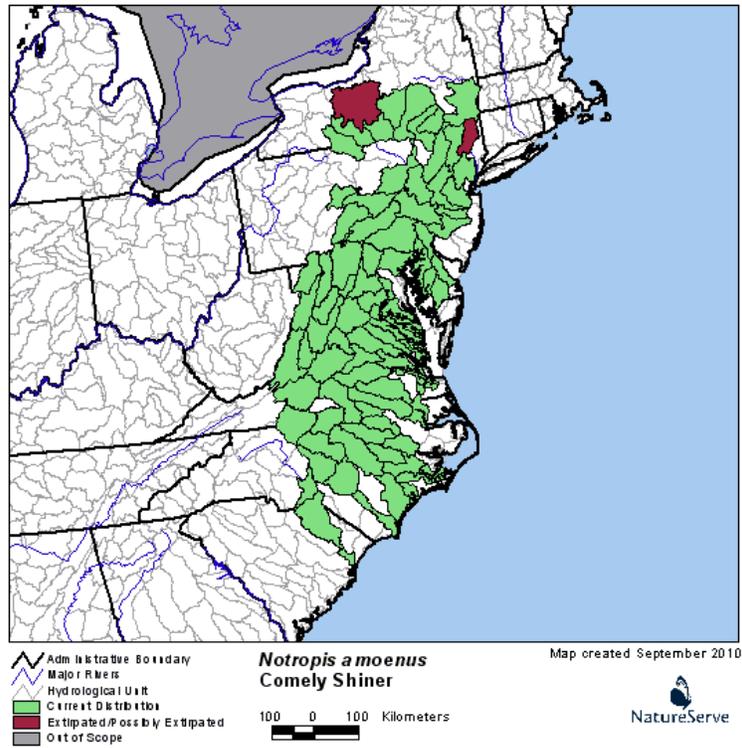


Figure 1. U.S. distribution of comely shiner by watershed (NatureServe 2012).

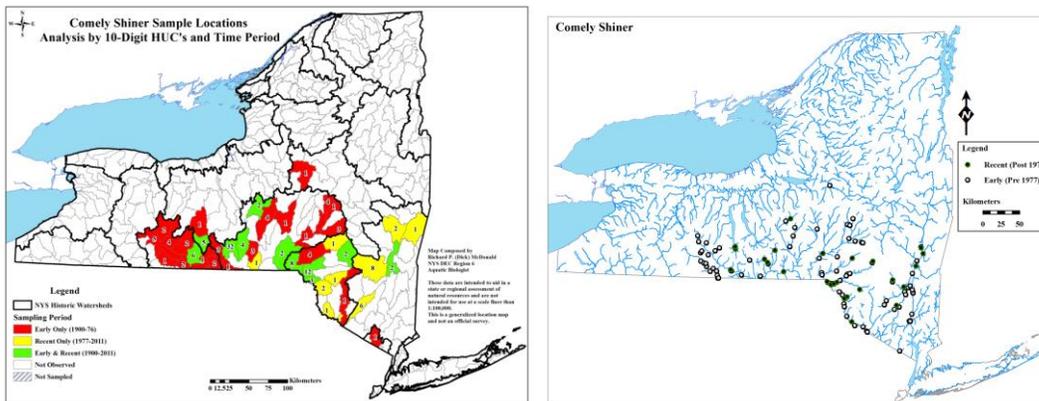


Figure 2. Comely shiner distribution in New York, depicting fish sampled before 1977 and from 1977 to current time, shown with the corresponding HUC-10 units where they were found, along with the number of records. Left map depicts the range of comely shiner in New York.

| Watershed name | Total # HUC10 | Early only | Recent only | both | Watershed status |
|----------------|---------------|------------|-------------|------|------------------|
| Chemung | 9 | 8 | 0 | 1 | |
| Delaware | 10 | 2 | 4 | 4 | |
| Susquehanna | 14 | 9 | 1 | 4 | |
| sum | 33 | 19 | 5 | 9 | |
| Lower Hudson | 5 | 0 | 4 | 1 | |
| Mohawk | 1 | 1 | 0 | 0 | loss |
| Newark Bay | 1 | 1 | 0 | 0 | loss |
| Oswego | 2 | 1 | 0 | 1 | |

Table 1. Records of comely shiner 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). Watersheds where it is non-native are marked in grey.

III. New York Rarity, if known:

| Historic | <u># of Animals</u> | <u># of Locations</u> | <u>% of State</u> |
|---------------|---------------------|-----------------------|-------------------|
| prior to 1977 | _____ | 95 site records | 7/18 watersheds |
| prior to 1980 | _____ | _____ | _____ |
| prior to 1990 | _____ | _____ | _____ |

Details of historic occurrence:

Comely shiner was moderately widespread in the Susquehanna, Chemung and Delaware watersheds and in very specific parts of the Lower Hudson watershed where contended as non-native. It was also present in the Ramapo River of the Newark Bay watershed but has not been caught there since the 1930s. Two additional records prior to 1943 were outside of these basins (Figure 3), in the Oswego watershed (Seneca Lake) and in the Mohawk watershed (Crane Creek). The records from these four watersheds were not considered part of their native range (Smith 1985), and they were possibly transported there, as well to the lower Hudson, due to creation of canals.

| Current | <u># of Animals</u> | <u># of Locations</u> | <u>% of State</u> |
|--------------|---------------------|-----------------------|-------------------|
| (since 1977) | _____ | 47 site records | 5/18 watersheds |

Details of current occurrence:

Most of the recent records, since 1993, are from the Delaware (11), Susquehanna (8) and lower Hudson (1), and there are none from the Chemung, Mohawk or Newark Bay. Comely shiner are known to still exist in only Seneca Lake of the Oswego watershed, in the nearby Catharine Creek.

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>300 miles</u> |

IV. Primary Habitat or Community Type:

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

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 comely shiner is found in moderate to larger sized streams, over sand, gravel, or rubble substrates. It tolerates a wide range of current but seems to prefer pools and backwaters (Smith 1985).

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:

Very little is known about the life history of this species (Werner 2004). It apparently spawns throughout summer, mostly in July (NatureServe 2012).

VI. Threats:

Threats to this species are not known. Its ability to withstand turbidity made it seem more tolerant than some minnows. There have been no studies to assess its problems, threats, limiting factors or overall vulnerability.

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. However, agricultural activities are exempt from Article 15 regulation, and only streams of C(T) or C(Ts) or higher classification are regulated.

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

Sample in all known watersheds, inventory habitat in streams currently and formerly occupied by the species, and work to restore water quality in the Susquehanna watershed.

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

| Conservation Actions | |
|-----------------------|---|
| Action Category | Action |
| Land/Water Protection | Resource/Habitat Protection |
| Land/Water Protection | Site/Area 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 comely shiner.

Habitat Research:

___ Inventory the habitat in streams currently and formerly occupied by the species.

Habitat Restoration:

___ Habitat losses and restoration are part of a State Wildlife Grants project from 2003 directed at the Susquehanna watershed.

Population Monitoring:

___ More sampling is needed in these watersheds.

VII. References

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