Species Status Assessment

Class: Actinopterygii
Family: Cyprinidae
Scientific Name: Macrhybopsis storeriana
Common Name: Silver chub

Species synopsis:

The silver chub is a freshwater fish found in shallow waters of large streams and lakes (Smith 1985, NatureServe 2012). It has a wide distribution found in the Lake Erie drainage and the Allegheny and Ohio Rivers to the Red River of the North and through the Mississippi Valley to the gulf coast from the Rio Brazos to the Pascagoula drainage (Cooper 1983, Smith 1985, NatureServe 2012). Local threats may be present and the status of this species varies by location (NatureServe 2012). This species has been in decline in New York since about 1953 and is considered extirpated from the state (NYSDEC 2013, NatureServe 2012).

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 G5

ii. New York SH Tracked by NYNHP? Yes

Other Rank:
Canadian Species at Risk Act (SARA) Schedule 1/Annexe 1 Status: Secure (05Jun2003)
Implied Status under the Committee on the Status of Endangered Wildlife in Canada PS: Endangered, NAR
Species of Northeast Regional Conservation Concern (Therres 1999)
Status Discussion:

This species is extirpated from New York (NYSDEC 2013).

II. Abundance and Distribution Trends

a. North America

i. Abundance

\[ \begin{array}{c}
\text{X} & \text{declining} & \text{increasing} & \text{stable} & \text{unknown} \\
\end{array} \]

ii. Distribution:

\[ \begin{array}{c}
\text{X} & \text{declining} & \text{increasing} & \text{stable} & \text{unknown} \\
\end{array} \]

Time frame considered: Past 20 years (NatureServe 2013)

b. Regional

i. Abundance

\[ \begin{array}{c}
\text{X} & \text{declining} & \text{increasing} & \text{stable} & \text{unknown} \\
\end{array} \]

Time frame considered: Past 20 years (NatureServe 2013)

Regional Unit Considered: Northeast U.S.
### c. Adjacent States and Provinces

<table>
<thead>
<tr>
<th>State</th>
<th>Status</th>
<th>Abundance</th>
<th>Distribution</th>
<th>Time Frame Considered</th>
<th>Listing Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONNECTICUT</td>
<td>Not Present</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MASSACHUSETTS</td>
<td>Not Present</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEW JERSEY</td>
<td>Not Present</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QUEBEC</td>
<td>Not Present</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VERMONT</td>
<td>Not Present</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ONTARIO</td>
<td>Not Present</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

i. **Abundance**

- X declining ___ increasing ___ stable ___ unknown

ii. **Distribution**

- X declining ___ increasing ___ stable ___ unknown

Time frame considered: Past 20 years (NatureServe 2013)

Listing Status: Special Concern

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<table>
<thead>
<tr>
<th>State</th>
<th>Status</th>
<th>Abundance</th>
<th>Distribution</th>
<th>Time Frame Considered</th>
<th>Listing Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>PENNSYLVANIA</td>
<td>Not Present</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

i. **Abundance**

- X declining ___ increasing ___ stable ___ unknown

ii. **Distribution**

- X declining ___ increasing ___ stable ___ unknown

Time frame considered: Past 20 years (NatureServe 2013)

Listing Status: Not Listed SGCN? No
d. NEW YORK

No data ___X____

i. Abundance

___ declining  ___ increasing  ___ stable  ___ unknown

ii. Distribution:

___ declining  ___ increasing  ___ stable  ___ unknown

Time frame considered: ____Extirpated, 1950 – present______________

Monitoring in New York.

There are currently no monitoring or survey efforts for this species.

Trends Discussion:

Populations of silver chub across the United States and Canada are in decline (NatureServe 2012). Many states have listed this species as one of special concern, threatened or endangered including Michigan, Ohio, Texas, South Dakota, Georgia, Pennsylvania, and West Virginia (Parker et al. 1987, NatureServe 2012).
Figure 1: Distribution of the silver chub in North America (NatureServe 2012).

Figure 2: Distribution of the silver chub in the United States by watershed (NatureServe 2012).
III. New York Rarity, if known:

<table>
<thead>
<tr>
<th>Historic</th>
<th># of Animals</th>
<th># of Locations</th>
<th>% of State</th>
</tr>
</thead>
<tbody>
<tr>
<td>prior to 1970</td>
<td>__________</td>
<td>______</td>
<td>__________</td>
</tr>
<tr>
<td>prior to 1980</td>
<td>__________</td>
<td>______</td>
<td>__________</td>
</tr>
<tr>
<td>prior to 1990</td>
<td>__________</td>
<td>______</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

Details of historic occurrence:

This species was reported to be common in Lake Erie and at the mouths of larger creeks around 1929 and started to drastically decline around 1953 (Smith 1985).

<table>
<thead>
<tr>
<th>Current</th>
<th># of Animals</th>
<th># of Locations</th>
<th>% of State</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>__________</td>
<td>______</td>
<td>0%</td>
</tr>
</tbody>
</table>

Details of current occurrence:

There are no current records of the silver chub in New York.

New York’s Contribution to Species North American Range:

<table>
<thead>
<tr>
<th>% of NA Range in New York</th>
<th>Classification of New York Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>___ 100 (endemic)</td>
<td>___ Core</td>
</tr>
<tr>
<td>___ 76-99</td>
<td>__ Peripheral</td>
</tr>
<tr>
<td>___ 51-75</td>
<td>___ Disjunct</td>
</tr>
<tr>
<td>___ 26-50</td>
<td>Distance to core population:</td>
</tr>
<tr>
<td>__X 1-25</td>
<td>~100 miles</td>
</tr>
</tbody>
</table>

IV. Primary Habitat or Community Type:

1. Large/Great River

2. Summer-stratified Monomictic Lake

Habitat or Community Type Trend in New York:

___ Declining ___X Stable ___ Increasing ___ Unknown
Time frame of decline/increase: ________________________________________________

Habitat Specialist?  _____ Yes  ____ X ____ No

Indicator Species?  _____ Yes  ____ X ____ No

Habitat Discussion:

This chub species occurs in streams where the bottom is clean sand and fine gravel, or in lakes at depths of 3 to 60 feet (Smith 1985). In streams that have more silt it may be found in riffles (Parker et al. 1987, NatureServe 2012).

V.  New York Species Demographics and Life History

_____ X ____ Breeder in New York

_____ X ____ Summer Resident

_____ X ____ Winter Resident

_____ Anadromous

_____ Non-breeder in New York

_____ Summer Resident

_____ Winter Resident

_____ Catadromous

_____ Migratory only

_____ Unknown

Species Demographics and Life History Discussion:

It is believed that the silver chub spawns from late May through June in open water areas of large streams and lakes (NYSDEC 2012). A female can produce from 2,603 to 11,555 eggs (Smith 1985). This is one of the larger chub species, reaching 9 inches in length in about 4 years (Cooper 1983). Few individuals live beyond 3 years of age (NatureServe 2012). Silver chubs prey on various insects, crustacean, and mollusks (NatureServe 2012). Young silver chubs feed on cladocerans, copepods, and chironomid larvae (Smith 1985). Adults feed on mayfly larvae, however in the 1950s
many mayfly species became scarce and the chubs switched to feeding on midges and amphipod crustaceans (Smith 1985).

VI. Threats:

The silver chub is threatened by high levels of siltation (NatureServe 2012). The main prey species underwent a dramatic decline around 1953 and this may have played a part in the species decline (Parket et al. 1987, NYSDEC 2012).

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

_____ No     _____ Unknown

___X___ Yes

The silver chub 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:

Conservation actions following IUCN taxonomy are categorized in the table.

<table>
<thead>
<tr>
<th>Conservation Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action Category</td>
</tr>
<tr>
<td>Land/Water Management</td>
</tr>
<tr>
<td>Species Management</td>
</tr>
<tr>
<td>Species Management</td>
</tr>
<tr>
<td>External Capacity Building</td>
</tr>
</tbody>
</table>
The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for extirpated fishes, which includes the silver chub.

**Habitat Monitoring:**

--- Inventories will be completed in all areas where restoration might be practical.

**Relocation/reintroduction:**

--- Re-establish, if feasible, populations of those endangered fish species now believed to be extirpated from New York.

**VII. References**


**Date last revised:** July 12th, 2013