

## Species Status Assessment

**Class:** Osteichthyes (bony fishes)  
**Family:** Cyprinidae  
**Scientific Name:** *Erimystax x-punctatus*  
**Common Name:** Gravel chub

### Species synopsis:

The gravel chub occurs in eastern-central North America. It has a spotty distribution, occurring from south-central Arkansas north to southern Minnesota and eastward along the Ohio River drainage to western New York. An isolated area in southern Ontario also contained this species as recently as 1958. It is locally abundant in some areas in the western part of the range and currently stable overall. Gravel chub occurred historically in the Allegheny watershed in New York in habitats of medium-sized streams with clean gravel. Six collections were made in 1937 and 18 reports date from between 1954 and 1980, though it is now likely extirpated.

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

### Other Rank:

Species of Northeast Regional Conservation Concern (Therres 1999)  
Canadian Species at Risk Act (SARA) Schedule 1/Annexe 1 Status: XT (05Jun2003)  
Committee on the Status of Endangered Wildlife in Canada (COSEWIC): Extirpated (25Apr2008)

### Status Discussion:

Globally, gravel chub is ranked as Apparently Secure by NatureServe. It is uncommon but not rare and there is some cause for long-term concern due to declines or other factors. This species has

spotty distribution on fine gravel or rocky substrates in creeks and rivers from Kansas to New York and southern Minnesota to Arkansas. It is locally abundant in some areas in the western part of the range and currently stable overall. In New York State, gravel chub is listed as Threatened and ranked as Critically Imperiled by the NY Natural Heritage Program because this species has not been found in New York since 1980 (NatureServe 2012). In addition to the state listed below, gravel chub also occurs in Ohio (S4), and is classified as a SGCN in West Virginia.

**II. Abundance and Distribution Trends**

**a. North America**

**i. Abundance**

declining  increasing  stable  unknown

**ii. Distribution:**

declining  increasing  stable  unknown

**Time frame considered:** Short-term trend 2000-2010

**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:** \_\_\_\_\_



**d. NEW YORK**

No data \_\_\_\_\_

**i. Abundance**

  X   declining \_\_\_increasing      \_\_\_stable      \_\_\_unknown

**ii. Distribution:**

  X   declining \_\_\_increasing      \_\_\_stable      \_\_\_unknown

Time frame considered:     Last 30 years    Extirpated    

**Monitoring in New York.**

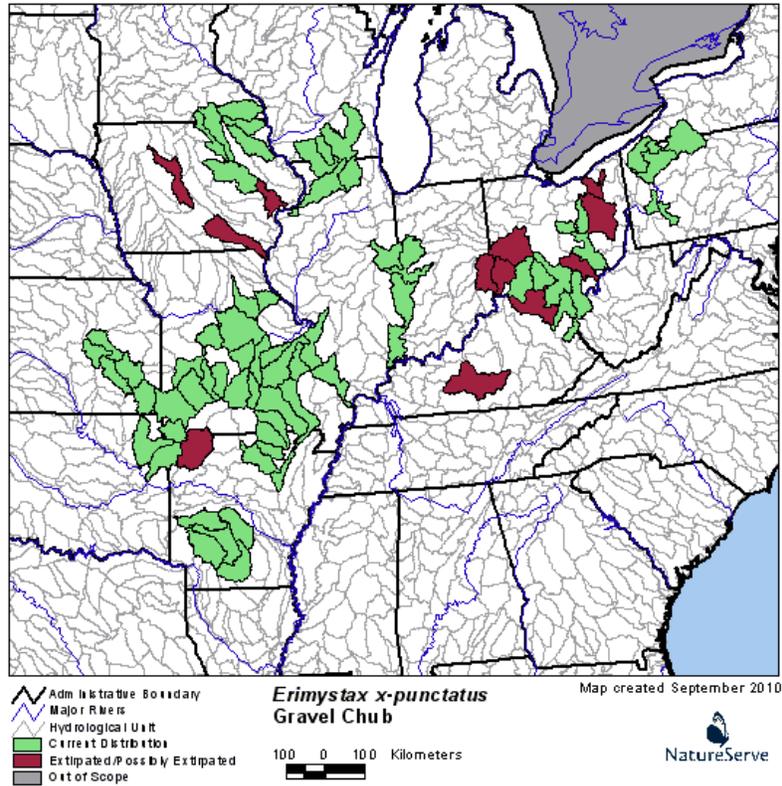
There are monitoring programs carried out by the Rare Fish Unit, 1998-2012.

**Trends Discussion:**

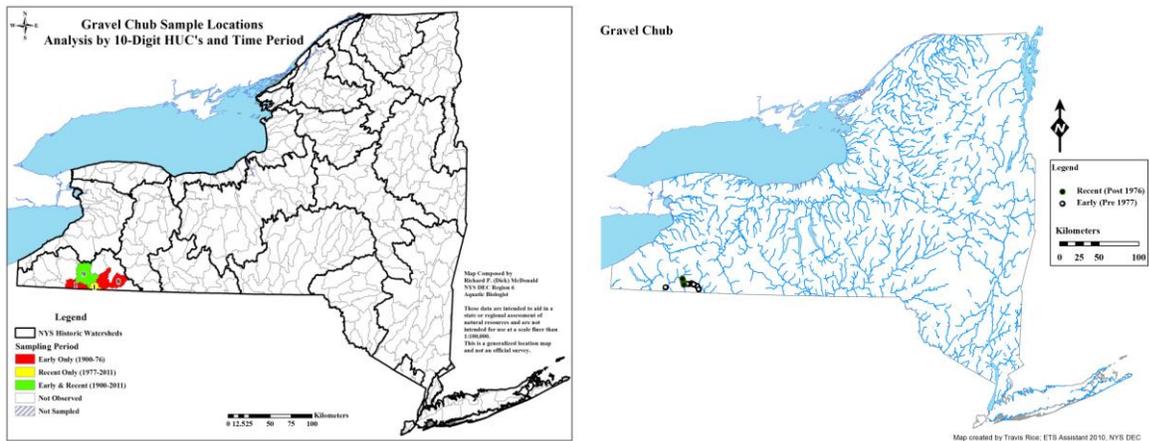
Distribution and abundance appear to be relatively stable in the central and western portions of the range. It has also been rated as currently stable in the southern United States. The historically limited Ontario and Kentucky populations are extirpated. The long-term trend has shown a decline of 50-70% (NatureServe 2012).

In New York State, gravel chub has historically been found in two waters and their range appears to be declining (or gone or dangerously sparse) in one watershed. There appears to be a decline in abundance in the last 30 years and habitat is largely unknown.

The distribution of this species among sub-basins (HUC 10) within the one watershed has declined, with records from fewer units in the recent period. Overall there are records from four of the units for all time periods, and from recent times there were only two units. Statewide, the number of individual site records for this species has been 19 for all time periods, six in the last 30 years, and none since 1993. Since the last records in NY or PA were in the 1970s, it is probably more appropriate to consider it extirpated.



**Figure 1.** U.S. distribution of gravel chub by watershed (NatureServe 2012).



**Figure 2.** Gravel chub 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 is gravel chub range in New York.

Watershed name	Total # HUC10	Early only	Recent only	both	Watershed status
Allegheny	4	2	1	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:**

<b>Historic</b>	<b><u># of Animals</u></b>	<b><u># of Locations</u></b>	<b><u>% of State</u></b>
<b>prior to 1970</b>	_____	_____	_____
<b>prior to 1980</b>	_____	<u>13 site records</u>	<u>1/18 watersheds</u>
<b>prior to 1990</b>	_____	_____	_____

**Details of historic occurrence:**

In New York, gravel chub were collected in the Allegheny River near Pierce Run, Vandalia, and S. Carrollton in 1937 (found only on filed data sheets and CU Mus.) It is assumed to inhabit the same general areas as the streamline chub. It has been collected in the Allegheny River between Weston Mills and Vandalia in 1973 (Eaton 1979, Smith 1985). It has not occurred upstream of New York in the Allegheny River (Cooper 1985) and the most recent record from downstream in PA was in 1971 despite thorough sampling (Koryak et al. 2009, Lorson 2009).

<b>Current</b>	<b><u># of Animals</u></b>	<b><u># of Locations</u></b>	<b><u>% of State</u></b>
<b>(since 1977)</b>	_____	<u>6 site records</u>	<u>1/18 watersheds</u>

**Details of current occurrence:**

Between 1977 and 1980 gravel chub was collected in the Allegheny River between Weston Mills and Vandalia, but not in 1985-89 (Becker 1982, Daniels 1989). It was also caught in Tunungwant Creek in 1978 (Eaton et al. 1982, Cervone et al. 1985). Gravel chub have not been found in New York since 1980.

**New York's Contribution to Species North American Range:**

<b>% of NA Range in New York</b>	<b>Classification of New York Range</b>
<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	<b>Distance to core population:</b>
<input checked="" type="checkbox"/> 1-25	<u>700 miles</u>

**IV. Primary Habitat or Community Type:**

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

**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:**

Gravel chub occur in medium to large-sized streams and, as its name implies, it is highly specific to gravel or firm sand-gravel substrate (Cooper 1985, Edwards et al. 2006). The gravel chub favors clearer waters, slower current near shelter or moderate flow near riffles, and is intolerant of silt. Spawning may occur in meter-deep swift water adjacent to a gravel bar (NatureServe 2012).

**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 the gravel chub, but it is probably similar to that of other chubs (Werner 2004).

**VI. Threats:**

This species has been extirpated in New York; no threats have been identified. The increase in siltation is the reason for the extensive decimation of this species in the Midwest (Smith 1979). In addition, impoundments eliminate and degrade habitat (NatureServe 2012).

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

- No**       **Unknown**
- Yes**

The gravel chub 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:**

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	Habitat/Natural Process Restoration
Land/Water Management	Site/Area Management
External Capacity Building	Alliance & Partnership Development

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

**Habitat Research:**

- \_\_\_ Inventory the habitat requirements of this species and its coinhabitants 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 are directed at the Allegheny watershed.

**Population Monitoring:**

- \_\_\_ Additional survey in the Allegheny River and Tunungwant Creek is warranted as part of a State Wildlife Grants project in 2004.

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