Species Status Assessment

Class: Osteichthyes (bony fishes)
Family: Aphredoderidae (pirate perch)
Scientific Name: *Aphredoderus sayanus gibbosus*
Common Name: Western pirate perch

Species synopsis:

Pirate perch has a range extending from New York to Texas of the Great Lakes and Mississippi River basins. Isolated populations of the western subspecies (*gibbosus*) are in watersheds of Lake Ontario to the south. New York's position in this subspecies' range is disjunct and it is native in 2 of 18 watersheds in the state: the Erie watershed in western New York and the Ontario watershed in central New York. This fish resides in low-gradient streams with clay or sand and some heavy debris. Populations have declined to levels below detection in the Erie watershed but have increased in tributaries in the Ontario watershed.

This western subspecies (Boltz and Stauffer 1993) is distinctively different in New York from the eastern subspecies (*A. sayanus sayanus*), which occurs in several Long Island streams where there is no indication of decline. The western subspecies is thought to be a relict species that has survived postglacial time in a few isolated pockets of favorable environment (Smith 1985).

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 T5

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

Other Rank:

None.

Status Discussion:

Pirate perch is globally ranked as Stable. It has a large range in eastern and central North America and is common in Coastal Plain and other lowlands. This fish is very common in suitable habitat in much of its range.

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: Past 10 years or 3 generations (NatureServe 2012)

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 ___X___** **No data _____**

MASSACHUSETTS **Not Present ___X___** **No data _____**

ONTARIO **Not Present ___X___** **No data _____**

QUEBEC **Not Present ___X___** **No data _____**

VERMONT **Not Present ___X___** **No data _____**

NEW JERSEY **Not Present _____** **No data _____**

i. Abundance

____ declining ____increasing ____stable __X__unknown

ii. Distribution:

____ declining ____increasing ____stable __X__unknown

Time frame considered: _____
Listing Status: _____Not Listed_____ SGCN? ___No___

PENNSYLVANIA **Not Present _____** **No data _____**

i. Abundance

____ declining ____increasing ____stable __X__unknown

ii. Distribution:

____ declining ____increasing ____stable __X__unknown

Time frame considered: _____
Listing Status: _____Not Listed- presumed extirpated___ SGCN? __No__

*Classifications in other neighbor states include endangered and SGCN in Ohio (S1).

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.

Monitoring programs are carried out by the NYSDEC Rare Fish Unit, 1998-2012.

Trends Discussion:

The short-term trend for pirate perch is thought to be relatively stable (NatureServe 2012). In New York, pirate perch has historically been found in 14 (still in 6) waters and it has been extirpated from one of the two watersheds. It is very difficult to assess at low abundance levels, and much remains mysterious about its occurrences. There have been somewhat stable but low levels of catches (as % frequency occurrence) in comprehensive stream surveys of the Ontario watershed, of about 2% in the 1930s and 2000s. Contrasting this is its absence from tributaries of Lake Erie/Niagara, and it appears to be extirpated there. This trend causes concern for this subspecies.

The distribution of this species among sub-basins (HUC 10) within the 2 watersheds has changed, with records from fewer units in the Erie but more in the Ontario watersheds in the recent period. Overall there are records from 9 of the units for all time periods, and from recent times there are 4 fewer units and 4 newer units. Statewide, the number of individual site records for this western subspecies has been 63 for all time periods, 28 in the last 30 years, and 28 catches since 1993.

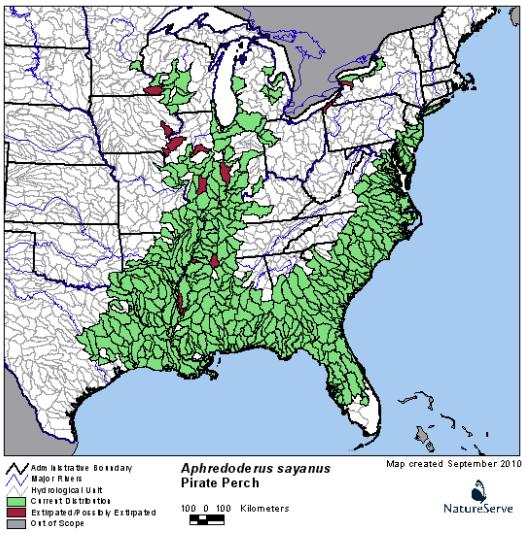

Figure 1. U.S. distribution of pirate perch (both subspecies) by watershed. (NatureServe 2012).

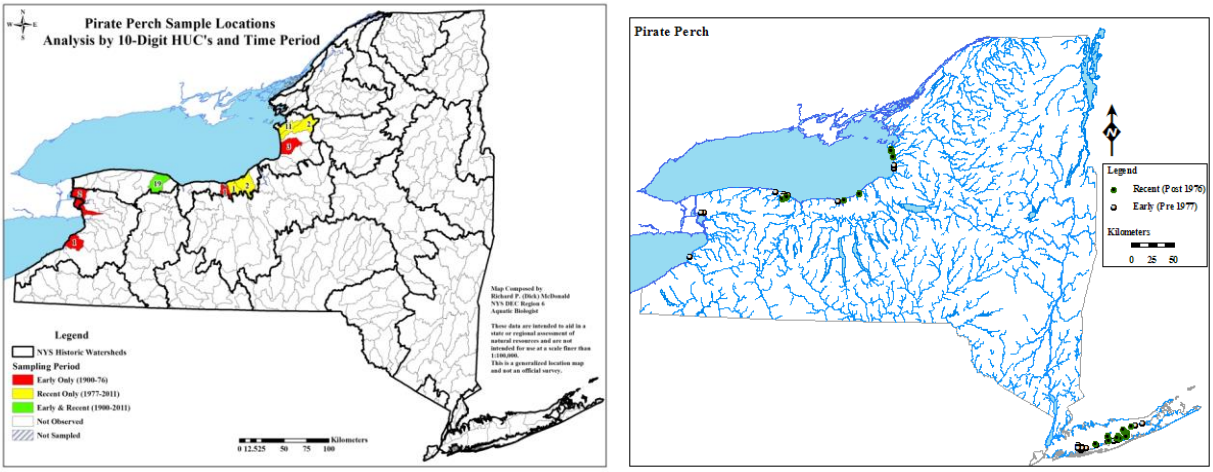

Figure 2. Pirate perch, western subspecies, distribution in New York, depicting fish sampled before 1977 and from 1977 to current time, shown with the corresponding HUC-10 units where they were found and the number of records.

	Total # HUC10	Early only	Rec only	Early & Recent
Lake Erie - Niagara R	**4**	**2**	**0**	**2**
Lake Ontario	**9**	**2**	**4**	**3**
sum	**13**	**4**	**4**	**5**

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	# of Animals	# of Locations	% of State
prior to 1977	_____	____35____	2/18 watersheds
prior to 1980	_____	_____	_____
prior to 1990	_____	_____	_____

Details of historic occurrence:

In early surveys from 1928-39, pirate perch were collected in proximity to Lake Ontario in South (Sandy) Pond, Sodus Bay, West Creek, Salmon Creek, Buttonwood Creek, Cayuga Creek (Niagara Co.) and Bergholz Creek in 1928 (Figure 2). Another western location is Muddy Creek and perhaps the nearby Silver Creek, but this latter one appears to not be substantiated (Lee et al. 1980). The eastern subspecies (sayanus) is captured on Long Island (map by Smith 1985).

Current	# of Animals	# of Locations	% of State
Since 1977	_____	____28____	1/18 watersheds

Details of current occurrence:

The recent collections of the western subspecies are from Buttonwood Creek, Sterling Creek (near Fair Haven, and only from 1997-99), Lakeview Pond (2004-07), Black Pond (2005-07), Stony Creek mouth (2004) and East Bay (2008). Sampling for this species has been attempted without success in the other areas like Lake Ontario bays of Salmon Creek (Monroe Co., last caught in 1939) and South (Sandy) Pond (last caught here in 1962, Cornell Univ. collection) and Niagara River areas including Cayuga Creek. It can possibly be caught in other of these bays, but the present count of 6 locations compares favorably to 5 historic locations (assuming West, Salmon and Buttonwood creeks shared a common population). Unfortunately, one watershed (Erie Niagara) is no longer inhabited. These New York areas are distantly separated from the Midwest range.

New York's Contribution to Species North American Range:

% of NA Range in New York	Classification of New York Range
____ 100 (endemic)	____ Core
____ 76-99	____ Peripheral
____ 51-75	__X__ Disjunct
____ 26-50	Distance to core population:
__X__ 1-25	__200 mi__

III. Primary Habitat or Community Type:

1. Small River, Low-Moderate Gradient, Moderately Buffered, Neutral, Transitional Cool

2. Eutrophic Pond

3. Backwater Slough

4. Headwater/Creek

Habitat or Community Type Trend in New York:

____ Declining __X__ Stable ____ Increasing ____Unknown

Time frame of decline/increase: _____

Habitat Specialist? __X__ Yes _____ No

Indicator Species? __X__ Yes _____ No

Habitat Discussion:

Pirate perch live in quiet water areas of creeks and rivers, backwaters, swamps and vegetated sloughs with soft bottoms and abundant aquatic plants, organic debris, and other cover. During the summer they are often found under logs or debris and in winter they partially bury themselves in sand. The habitat of Buttonwood Creek is described briefly in Haynes (1987, 1994). An environmental impact statement was prepared in 1994 to assure their protection during bridge rebuilding.

IV. 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:

Living 3-4 years, pirate perch has a relatively short life span. This species spawns in late spring (Werner 2004).

V. Threats:

Concerns for this species relate only to the western subspecies. Most bays of Lake Ontario are affected by residential development and habitat loss may be a concern. Western pirate perch might be vulnerable to temperature warming as they are restricted to cooler areas.

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

_____ No ____ Unknown

__X__ Yes

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
Law/Policy	Policy/Regulation Change/Implementation

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for the western pirate perch.

Habitat Research:

---- Research habitat requirements for this species in tributaries of Lake Ontario.

Population Monitoring:

---- There should be more surveys on bays of Lake Ontario and the nearby streams for this species.

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Date last revised: July 16th, 2013