



Home > Kingdom **Animalia** > Phylum **Chordata** > Subphylum **Vertebrata** > Class **Actinopterygii** > Order **Cypriniformes** > Family **Catostomidae** > Species **Carpiodes carpio**

[Previous page](#)

Carpiodes carpio (river carpsucker)

Information [Classification](#)

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By Kyung Seo Park

Kingdom: [Animalia](#)
 Phylum: [Chordata](#)
 Subphylum: [Vertebrata](#)
 Class: [Actinopterygii](#)
 Order: [Cypriniformes](#)
 Family: [Catostomidae](#)
 Genus: [Carpiodes](#)
 Species: **Carpiodes carpio**

Geographic Range

Carpiodes carpio was originally distributed in the Mississippi River basin from Pennsylvania to Montana. In addition, this species lives in Louisiana and the Gulf Slope Drainage from the Calcasieu River to the Rio Grande in Texas and New Mexico (Page and Burr, 1991).

The introduction of *Carpiodes carpio* into other areas was likely caused by shipments of buffalo fishes (*Ictiobus* spp.) in Lake Erie and the lower Maumee River, Ohio. These buffalo fishes were deliberately introduced and stocked for sport fishing and aquaculture in Ohio in western Lake Erie between 1920 and 1930. However, the effects of the introduction are not well known and studied (Lee et al. 1980; Trautman 1981; Page and Burr 1991). (Lee et al., 1980; Page and Burr, 1991; Trautman, 1981)

Biogeographic Regions: nearctic [🔍](#) (introduced [🔍](#), native [🔍](#)); neotropical [🔍](#) (introduced [🔍](#)).

Habitat

Elevation
 below about 2,135 m (average)

Carpiodes carpio has a preference for large and deep rivers that have sand or silt bottoms with slower-moving current even though the river carpsucker has high adaptability to various kinds of habitats. In addition, this carpsucker lives in backwaters of smaller creeks. Another habitat recorded is comparatively shallow water having a large biomass of [tubificids](#) and little nutrients. (Bestgen and Platania, 1990; Sublette, Hatch, and Sublette, 1990)

These animals are found in the following types of habitat: temperate [🔍](#); tropical [🔍](#); freshwater [🔍](#).

Aquatic Biomes: benthic [🔍](#); lakes and ponds; rivers and streams.

Physical Description

Mass
 453.60 to 4536 g; avg. 453.6 – 1,360 g
 (15.97 to 159.67 oz; avg. 62)

Length
 38 – 64 cm (average)

Carpiodes carpio is somewhat stout and its back is a little bit arched and compressed. The dorsal area is brown-olive and fades to silver then white at its belly. The fins are usually opaque. The fins of older fish are dark yellow. The midpoint of the lower lip is projected like a nipple and has big scales. Small tubercles are observed on the body of males in breeding seasons.

Adult carpsuckers are usually 12 to 18 inches (30 to 45 cm) in length and 1 to 3 lbs (453.6 to 1361 g) in weight. Sometimes, fish weighing over 10 lbs (4546 g) are caught. (BISON, 2004; Page and Burr, 1991)

Some key physical features: ectothermic [🔍](#); heterothermic [🔍](#); bilateral symmetry [🔍](#).

Development

Information about life history and developmental stages is not well known. However, the river carpsucker broadcasts its eggs on the silt or sand in spring (Sublette et al. 1990). The characteristics of the eggs are adhesive and demersal. Also, an egg diameter is about 1.7 to 2.1 mm. After 8 to 15 days, young fry hatch. (Sublette, Hatch, and Sublette, 1990)

Reproduction

Breeding interval

Usually more than once per year

Breeding/spawning seasonBreeding season

From late in the spring to June or July

Number of offspring

over 100,000 eggs (average)

Time to hatchingGestation period

8 to 15 days (average)

Age at sexual or reproductive maturity (female)

3 to 4 years (average)

Age at sexual or reproductive maturity (male)

2 to 3 years (average)

Reproduction of the river carpsucker usually occurs in late spring. In a breeding season, this species gathers in large groups and spawns. Although the spawning peak is not well described, ripening time is quite different for individuals and does not occur synchronously. Some females spawn more than once per year. This carpsucker broadcasts eggs randomly and usually releases over 100,000 eggs. (BISON, 2004)

Mating systems: polygynandrous (promiscuous) 

The river carpsucker can produce eggs at age 2 to 3 but sexual maturity depends on sex. Maturity is age 2 to 3 for males and age 3 to 4 in females (Becker 1983).

The water temperature where the river carpsucker can spawn ranges from 18.3 to 19.1°C. Spawning occurs from the late spring and lasts until the beginning of summer when the water temperature ranges from 24.0 to 27.5°C. (Becker, 1983)

Key reproductive features: seasonal breeding ; gonochoric/gonochoristic/dioecious (sexes separate); sexual ; fertilization  (external ); broadcast (group) spawning; oviparous .

There is no parental care. The river carpsucker broadcasts its eggs on the sand and leaves them.

Parental investment: pre-fertilization (provisioning).

Lifespan/Longevity**Longest known lifespan in wild**

10 years (high)

Expected lifespan in wild

2 to 4 years (average)

The river carpsucker usually lives 2 to 4 years. Thus, fish over six years old is not observed easily in nature. However, this species can live for 10 years.

Behavior

The river carpsucker forms large schools and moves together. Feeding behavior of this species is known as they forage near the bottom which consists of sand or silt. (Sublette, Hatch, and Sublette, 1990)


Key behaviors: natatorial ; mottle ; social .

Food Habits

The river carpsucker is well known as a bottom feeder and detritivore. This species eats and filters nutrients from silt and detritus. It ingests all kinds of items on the river bottom like algae, protozoans, **chironomids**, microcrustaceans, various tiny planktonic plants and animals (Becker 1983; Sublette et al. 1990).


Juveniles eat similar items as adults. However, items eaten are smaller. (Becker, 1983; Sublette, Hatch, and Sublette, 1990)

Primary Diet: omnivore ; detritivore .

Animal Foods: insects; aquatic crustaceans; zooplankton 

Plant Foods: algae; phytoplankton 

Other Foods: detritus ; microbes.

Behaviors: filter-feeding 

Predation**Known predators**

- northern pike, *Esox lucius*
- muskellunge, *Esox masquinongy*
- walleye, *Stizostedion vitreum*
- largemouth bass, *Micropterus salmoides*
- humans, *Homo sapiens*
- great blue herons, *Ardea herodias*

Carnivorous fishes such as **northern pike**, **muskellunge**, **walleye**, **largemouth bass** are well known predators (Froese and Pauly, 2002; Baldry, 2004). However, these predators cannot eat adult river carpsuckers. **Humans** are the biggest fish predators and usually Asian people prefer to eat these kinds of fishes. In addition, some birds like **great blue herons** may feed on river carp suckers (Baldry, 2004). (Baldry, 2004; Froese and Pauly, 2004)

Economic Importance for Humans: Negative

This species has no known negative effects on humans.

Economic Importance for Humans: Positive

Commercial fisherman caught the river carpsuckers for food during the 1960s. This species was one of the most plentiful fishes in Elephant Butte Reservoir in New Mexico (Jester 1972). Another place which has a relatively large abundance was in Caballo Reservoir in Texas. However, the river carpsuckers are reduced rapidly by the effect of toxics in the reservoir.

Even though most people in the United States think the river carpsucker is useless and not palatable, these fish are popular food in Asia. *Cariodes carpio* is also referred to as "cold water buffalo" in some areas of the southern United States (Sublette et al. 1990). (Jester, 1972; Sublette, Hatch, and Sublette, 1990)

Ways that people benefit from these animals: food 🔍

Conservation Status

IUCN Red List: <http://www.redlist.org>: No special status.

US Federal List: <http://endangered.fws.gov/wildlife.html>: No special status.

CITES: <http://www.cites.org/eng/append/appendices.shtml>: No special status.

Some reports and proposals were suggested in order to protect native population and habitat in the river from the river carpsucker. Also, the removal of these species was related to management of water uses. (BISON, 2004)

Other Comments

The river carpsucker is not considered a game species. This species is also called carpsucker, white carp, quillback, silvery carp, northern carpsucker.

Contributors

Renee Sherman Mulcrone (editor), Animal Diversity Web Staff: April, 2005.

Kyung Seo Park (author), University of Michigan: December, 2004. William Fink (editor, instructor), University of Michigan: December, 2004. Biology of Fishes (EEB440) [09/04 - 12/04], University of Michigan, Ecology & Evolutionary Biology: December, 2004.

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