Carpiodes carpio
(river carpsucker)

Information Classification

2005/05/14 01:56:51.891 GMT-4

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. oz)

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 tubercules 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 a 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; motile; 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. *Capiodes 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.

References

Baldry, I. 2004. "Effect of Common Carp (Cyprinus carpio) on Aquatic Restorations" (On-line). Accessed October 18, 2004 at http://horticulture.coafes.umn.edu/vd/h5015/rrrmain.htm.

Baxter, G., J. Simon. 1970. *Wyoming Game and Fish Department*. Bulletin number 4, 168 pp.: Cheyenne, Wyoming..

Becker, G. 1983. *Fishes of Wisconsin*. Madison, WI. 1052 pp.: Univ. Wisconsin Press.

Beckman, W. 1952. *Guide to the fishes of Colorad*. Boulder, Colorado. 110 pp.: University of Colorado Museum.

Behmer, D. 1965. *periodicity of the river carp-sucker, CARPIODES CARPIO*. 72:253-262: Proc. Iowa. Acad. Sci..

Bestgen, K., S. Platania. 1990. *Extirpation of Notropis simus simus (Cope) and Notropis orca Woolman (Pisces: Cyprinidae) from the Rio Grande in New Mexico, with Notes on Their Life History*. In: Occasional Papers, Number 6, pp. 1-8. February 16, 1990.: The Museum of Southwestern Biology.

BISON, 2004. Biota Information System Of New Mexico BISON. Accessed November 15, 2004 at http://fwie.fw.vt.edu/states/nmex_main/species/010090.htm.

Brezner, J. 1958. *Food habits of the Northern river carpsucker in Missouri*. 20(4): 170-174.: Progressive Fish-Culturisst.

Ellis, M. 1914. *Fishes of Colorado*. 11(1):5-135: University of Colorado Studies.

Froese, R., D. Pauly. 2004. "Fishbase: Species summary for Cyprinus carpio" (On-line). Accessed October 18, 2004 at http://www.fishbase.org.

Fuller, P. 2004. "Species summary at Noninditenous Aquatic species Database" (On-line). Accessed January 07, 2004 at http://nas.er.usgs.gov/queries/FactSheet.asp?speciesID=341.

Hammerson, G. 2004. "Comprehensive report for Cyprinus carpio" (On-line). Accessed January 07, 2004 at http://www.natureserve.org/explorer/servlet/NatureServe?menuselect=none&sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=104464&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=104464&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=104464&menuselectfooter=none.

Hubbs, C., R. Johnson. 1943. *Hybridization in nature between species of Catostomid fishes*. Contributions of the Laboratory of Vertebrate Biology, 22:1-77.: University of Michigan.

Jester, D. 1972. Life history, ecology, and management of the river carpsucker, CARPIODES CARPIO (Rafinesque), with reference to Elephant Butte Lake. *N. M. State Univ. Agric. Exp. Stn. Res. Rep.*, No. 243: 120 pp.

Jordan, D., B. Evermann. 1902. *American Food and Game Fishes*. New York, New York. 574 pp.: Doubleday, Page and company.

Koster, W. 1957. *Guide to the fishes of New Mexico*. Abbuquerque, New Mexico. 116 pp.: University of New Mexico press.

Lammens, E., W. Hoogenboezem. 1991. *Diets and Feeding Behavior*. Pp. 353-376 in Cyprinid Fishes.: London: Chapman and Hall.

Lee, D., C. Gilbert, C. Hocutt, R. Jenkins, D. McAllister, J. Stauffer, Jr.. 1980. *Atlas of North American Freshwater Fishes*. 867 pp.: North Carolina State Museum of Natural History.

Leu, J. 2004. "Fish information" (On-line). Bowfishing Association of Iowa. Accessed October 18, 2004 at http://www.bowfishiowa.com/rivercarpsucker.htm.

Li, H. 1968. *Fishes of the South Platte River Basin*. Fort Collins, Colorado. 67 pp.: Colorado State University.

Page, L., B. Burr. 1991. *A field guide to freshwater fishes: North America north of Mexico*. Boston, Massachusetts. 432 pp.: Houghton Mifflin Company.

Pflieger, W. 1975. *Fishes of Missouri*. 341 pp.: Missouri Department of Conservation.

Robins, C., R. Bailey, C. Boyd, J. Brooker, E. Lachner, R. Lea, W. Scott. 1991. Common and scientific names of fishes from the United States and Canada. *Am. Fish. Soc. Spec. Pub.*, 20: 183 p.

Smith, P. 1979. *The fishes of Illinois*. Urbana. 314 pp: Univ. Illinois Press.

Sublette, J., M. Hatch, M. Sublette. 1990. *The fishes of New Mexico*. Albuquerque, New Mexico. 393 pp.: University New Mexico Press.

Trautman, M. 1981. *The fishes of Ohio. Second edition*. Columbus. 782 pp.: Ohio State Univ. Press.

2005/05/14 01:57:00.539 GMT-4

To cite this page: Park, K. 2005. "Carpiodes carpio" (On-line), Animal Diversity Web. Accessed May 17, 2005 at http://animaldiversity.ummz.umich.edu/site/accounts/information/Carpiodes_carpio.html.

Disclaimer: The Animal Diversity Web is an educational resource **written largely by and for college students**. ADW doesn't cover all species in the world, nor does it include all the latest scientific information about organisms we describe. Though we edit our accounts for accuracy, we cannot guarantee all information in those accounts. While ADW staff and contributors provide references to books and websites that we believe are reputable, we cannot necessarily endorse the contents of references beyond our control.

Sponsored in part by the Interagency Education Research Initiative, the Homeland Foundation and the University of Michigan Museum of Zoology. *The ADW Team gratefully acknowledges their support!*

©1995-2005, The Regents of the University of Michigan and its licensors. All rights reserved.

UNIVERSITY OF MICHIGAN