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Hypophthalmichthys nobilis - (Richardson, 1845)
Bighead Carp
Other Related Names: *Aristichthys nobilis*
Unique Identifier: AFCJB44020
Informal Taxonomy: Animals, Vertebrates - Fishes - Bony Fishes - Minnows and Carps

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Kingdom	Phylum	Class	Order	Family	Genus
Animalia	Craniata	Actinopterygii	Cypriniformes	Cyprinidae	Hypophthalmichthys

Genus Size: B - Very small genus (2-5 species)
Concept Reference: Robins, C. R., et al. 1991. Common and scientific names of fishes from the United States and Canada. American Fisheries Society, Special Publishing 20. 183 pp.
Concept Reference Code: B91ROB01NAUS
Name Used in Concept Reference: *Hypophthalmichthys nobilis*
Taxonomic Comments: See Jennings (1988) for taxonomic overview.

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Conservation Status

NatureServe Status

Global Status: G5
Global Status Last Reviewed: 14Oct2000
Global Status Last Changed: 14Oct2000
Rounded Global Status: G5

Nation: United States
National Status:
NNA

U.S. & Canada State/Province Status	
United States	Arkansas (SNA), Kansas (SNA), Kentucky (SNA), Louisiana (SNA), Missouri (SNA)

Other Statuses

NatureServe Conservation Status Factors

Global Short Term Trend: F
Global Short Term Trend Comments: Increasing greatly in North America (Ferber 2001).

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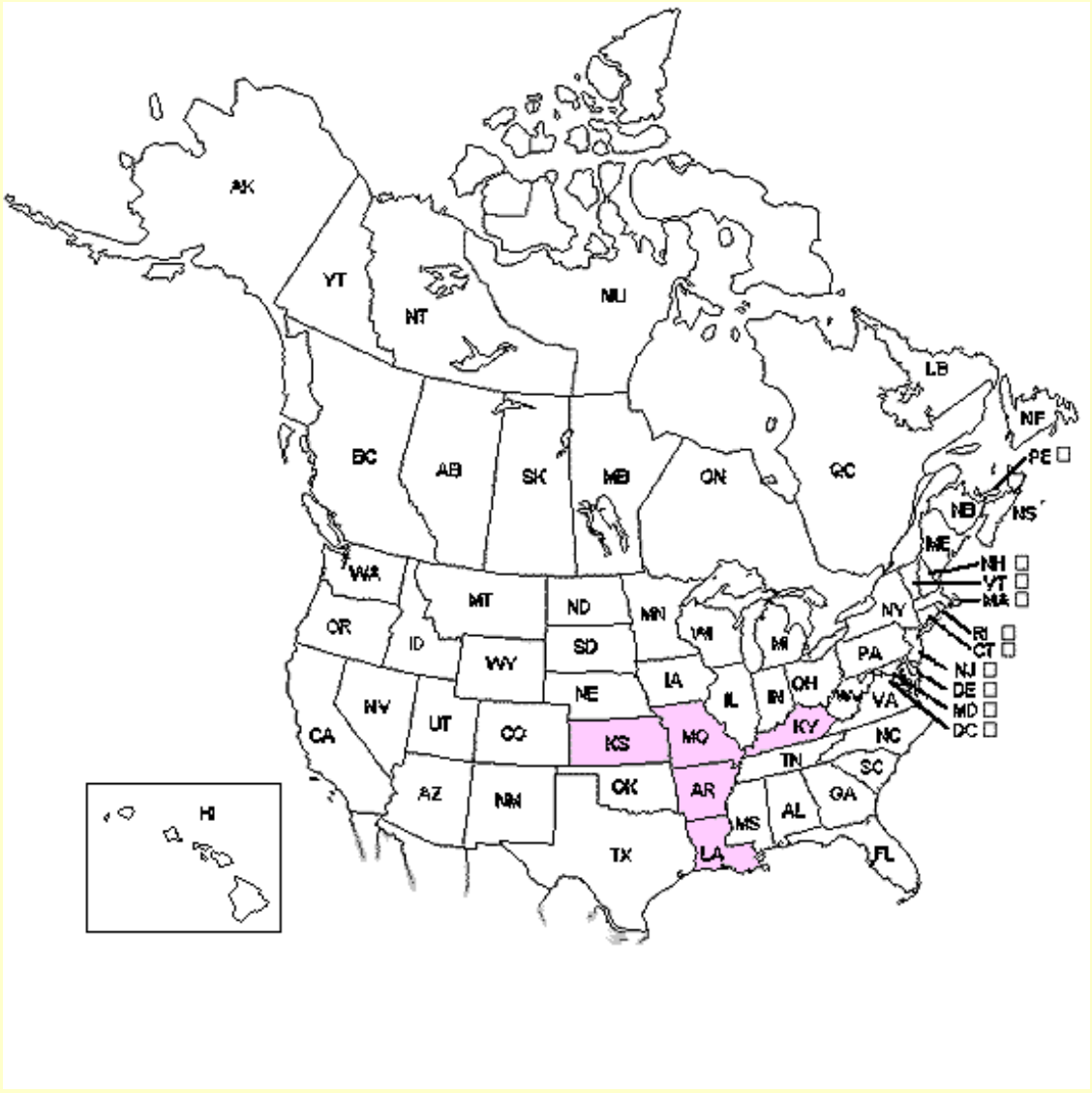
Distribution

U.S. States and Canadian Provinces



State/Province Conservation Status

- SX: Presumed Extirpated
- SH: Possibly Extirpated
- S1: Critically Imperiled
- S2: Imperiled
- S3: Vulnerable
- S4: Apparently Secure
- S5: Secure
- Not Ranked/Under Review

Conservation Status Not Applicable

- Exotic
- Hybrid without Conservation Value

Endemism: endemic to a single nation

U.S. & Canada State/Province Distribution	
United States	AR, KS, KY, LA, MO

Range Map

No map available.

Global Range Comments: Native to eastern China. Introduced throughout the world, but until recently has not readily become established except in the Soviet Union, Japan, and Europe, mainly because of strict reproductive requirements. First introduced in the U.S. in fish culture systems in 1972. As of 1988, there were a few records from open waters in the U.S.: Ohio River below Smithland Dam, Kentucky, in 1981; Chain Lake, Schuzler County, Illinois, in 1986; Mississippi River, Hancock and Henderson counties, Illinois, in 1986 and 1987 (see Jennings 1988 for further details). Reported in 1989 as reproducing in natural waters in Missouri (see Robins et al. 1991). Reproducing populations recently have become established in the middle and lower Mississippi and Missouri rivers; apparently firmly established in Illinois and

Missouri; larvae have been found in Louisiana (Fuller et al. 1999, Douglas and Jordan 2002). Ferber (2001) mapped an extensive distribution in the Mississippi, Missouri, Arkansas, and Ohio basins, and indicated populations in southern Florida as well.

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Economic Attributes

Economic Comments: This species and hybrids between bighead carp and grass carp have been used as biological weed control agents, particularly for limiting phytoplankton blooms (Jennings 1988, which see for information on other hybrids that have been produced with this species). Studies in Arkansas indicate utility of bighead carp in improving quality of water in sewage lagoons; also, marketability tests revealed that palatability of flesh was comparable to or better than that of channel catfish or bigmouth buffalo; has potential value in U.S. as food fish for humans and as organic fertilizer or fish meal by-product (see Jennings 1988). See Jennings 1988 for information on exploitation and fisheries. In U.S., sometimes reaches 18-23 kg in 4-5 yr.

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Management Summary

Management Requirements: See Jennings (1988) for extensive information on pond fish culture.

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Ecology & Life History

Reproduction Comments: Spawning has been observed at temperatures of 18-30 C in different regions. In China, spawns April-June. Males generally reach maturity one year earlier than do females; age at maturity varies with conditions. See Jennings (1988) for many details on reproduction.

Ecology Comments
Forms schools.

Habitat Type: Freshwater

Non-Migrant: N

Locally Migrant: Y

Long Distance Migrant: N

Mobility and Migration Comments: Migrates upstream to spawn when water level rises (Jennings 1988).

Riverine Habitat(s): BIG RIVER, Low gradient, MEDIUM RIVER, Moderate gradient

Lacustrine Habitat(s): Deep water, Shallow water

Habitat Comments: Adults inhabit rivers and floodland lakes (Jennings 1988). Eggs generally are deposited among rock of rapids in river channels, behind sandbars, and at islands at junction of currents; eggs must float to hatch; quiet waters serve as nursery areas, which are reach passively or actively by the larvae (Jennings 1988).

Adult Food Habits: Herbivore, Invertivore

Immature Food Habits: Herbivore, Invertivore

Food Comments: Larvae feed on diatoms, protozoans, cyanobacteria, infusoria, phytoplankton, and zooplankton; adults filter feed on phytoplankton and zooplankton, and also may consume detritus (Jennings 1988).

Phenology Comments: Daily time of peak feeding activity often in late afternoon and early evening, sometimes mid-

morning also (Jennings 1988).

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Population/Occurrence Delineation

Group Name: LARGE CYPRINIDS

Use Class: Not applicable
Minimum Criteria for an Occurrence: Occurrences are based on evidence of historical presence, or current and likely recurring presence, at a given location. Such evidence minimally includes collection or reliable observation and documentation of one or more individuals (including eggs and larvae) in appropriate habitat.
Separation Barriers: Dam lacking a suitable fishway; high waterfall; upland habitat.
Separation Distance for Unsuitable Habitat: 20 km
Separation Distance for Suitable Habitat: 20 km
Separation Justification: Data on dispersal and other movements generally are not available. In some species, individuals may migrate variable distances between spawning areas and nonspawning habitats.

Separation distances (in aquatic kilometers) for cyprinids are arbitrary but reflect the presumption that movements and appropriate separation distances generally should increase with fish size. Hence small, medium, and large cyprinids, respectively, have increasingly large separation distances. Separation distance reflects the likely low probability that two occupied locations separated by less than many kilometers of aquatic habitat would represent truly independent populations over the long term.

Because of the difficulty in defining suitable versus unsuitable habitat, especially with respect to dispersal, and to simplify the delineation of occurrences, a single separation distance is used regardless of habitat quality.

Occupied locations that are separated by a gap of 10 km or more of any aquatic habitat that is not known to be occupied represent different occurrences. However, it is important to evaluate seasonal changes in habitat to ensure that an occupied habitat occurrence for a particular population does not artificially separate spawning areas and nonspawning areas as different occurrences simply because there have been no collections/observations in an intervening area that may exceed the separation distance.
Date: 21Sep2004
Author: Hammerson, G.

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Population/Occurrence Viability

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Authors/Contributors

Element Ecology & Life History Edition Date: 18Mar1991
Element Ecology & Life History Author(s): Hammerson, G.

Zoological data developed by NatureServe and its network of natural heritage programs (see Local Programs) and other contributors and cooperators (see Sources).

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References

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- Jennings, D. P. 1988. Bighead carp (HYPOPHTHALMICHTHYS NOBILIS): a biological synopsis. U.S. Fish Wild. Serv. Biol. Rep. 88(29). 35 pp.
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