



## NAS - Nonindigenous Aquatic Species


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*Hypophthalmichthys nobilis* [Collection Info](#)

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Amy Benson - USGS

### *Hypophthalmichthys nobilis* (Richardson 1845)

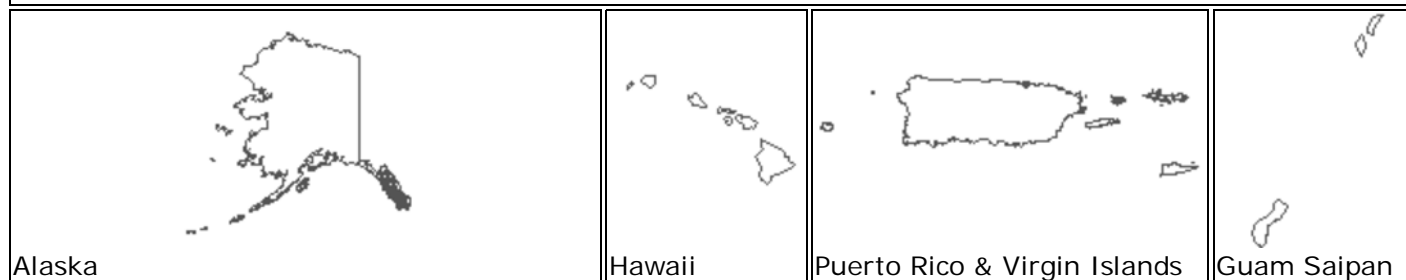
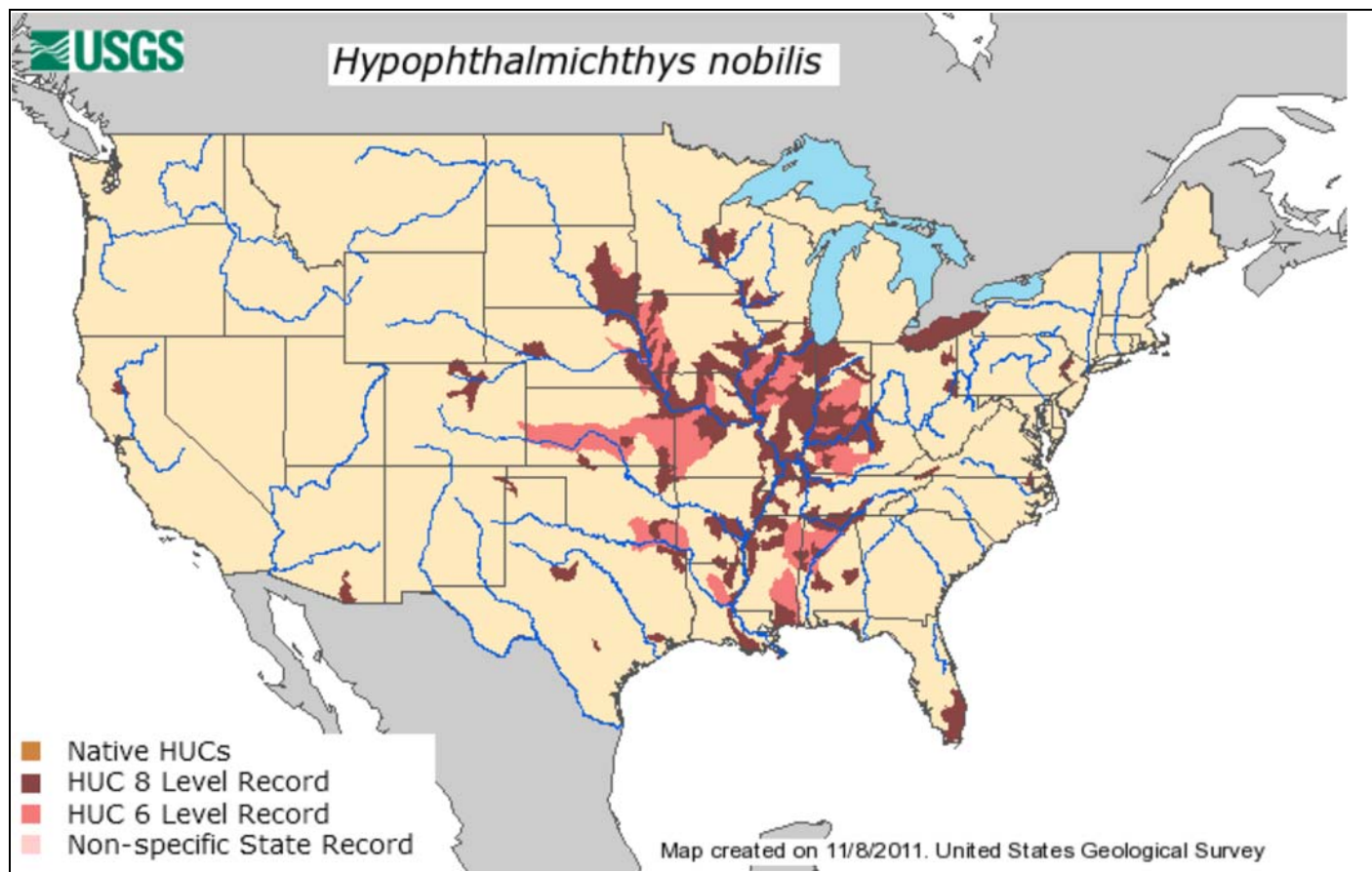
**Common name:** bighead carp

**Taxonomy:** available through ITIS

**Identification:** Distinguishing characteristics were given in Berg (1949) and Jennings (1988). Distinguishing characteristics, along with keys that include this species and photographs or illustrations also were included in a few of the more recently published state fish books (e.g., Robison and Buchanan 1988; Etnier and Starnes 1993; Pflieger 1997). A commonly used name is *Aristichthys nobilis*. Maximum size: 40 kg and 71.6 cm (Jennings 1988).

**Size:** 40 kg and 1.4 m

**Native Range:** Southern and central China (Li and Fang 1990; Robins et al. 1991b).



Interactive maps: [Point Distribution Maps](#)

**Nonindigenous Occurrences:** This species has been recorded from the Black Warrior and Tallapoosa river drainages of the Mobile Basin, including Yates Reservoir, Bear Creek on Pickwick Lake, and the central part of the state of **Alabama** (Mettee et al. 1996; Rasmussen 1998; Hornsby and Pierson, personal communication; Mississippi Museum of Natural Science 2004). This species has been recorded from **Arizona** in Tucson for the first time in 2007 (L. Riley, pers. comm.). Early records from the 1970s may have been misidentified as bigheads but were most likely bighead x grass carp hybrids (P. Marsh, pers. comm.). In **Arkansas**, it has been taken from the Arkansas River just upstream of Pine Bluff, the lower Arkansas River between Dam #2 and the Mississippi River (Rasmussen 1998; J. Phillips, personal communication), and stocked in several municipal sewage lagoons in the state (Robison and Buchanan 1988; Courtenay et al. 1991) and is established in White River National Wildlife Refuge (USFWS 2005). In **California**, 26 specimens were taken from one of three ponds in a small drainage adjacent to Brannin Creek, Tehama County, in the Sacramento River basin, in 1992 (Dill and Cordone 1997). It also has been stocked in water treatment ponds in Larimer County, **Colorado** (Horak, personal communication; P. Walker, personal communication), and two individuals were caught from Cherry Creek Reservoir in Denver in 2004 and stocked in Birdland Reservoir in Metro Denver by the Bureau of Reclamation (P. Walker, personal communication). This species has been recorded from **Florida** (Shafland 1995b) including Lake Okeechobee (D. Fox, personal communication). A single specimen was taken in August

1994 from St. Andrews Bay at the Deer Point Lake spillway, Bay County, Florida (Middlemas 1994; UF 98162). Another was taken from a lake on the southeast side of Lake Okeechobee, Florida (FMNH). Collected from several water bodies in, or bordering, **Illinois**, including the Mississippi and Ohio rivers and several of their tributaries, the Cache, Big Muddy, and Kaskaskia river drainages, and Horseshoe Lake in Madison County (Burr 1991; Burr et al. 1996; Tucker et al. 1996; Ross 2001; Rasmussen 1998), the Illinois River (K. Cummings, personal communication; USFWS 2005), and Chain Lake, Schuyler County, Illinois (Jennings 1988); collected in Bryant Creek, Oxendine Bayou, Vigo County, **Indiana** (Illinois Natural History Survey 2004), the Ohio River at mile marker 919 on the Indiana-Kentucky border (Freeze and Henderson 1982; D. Jennings 1988); the Chariton River below Rathbun Lake, Desoto National Wildlife Refuge (Located along the Missouri River, 25 miles north of Omaha), and the Des Moines River, in **Iowa** (J. Bruce, personal communication; USFWS 2005); the Kansas, Delaware, Neosho, Arkansas, Missouri, and Wakarusa rivers in **Kansas** (Cross and Collins 1995; Halker 1998; Rasmussen 1998); several waterbodies in **Kentucky** (Freeze and Henderson 1982; Jennings 1988; Southern Illinois University; Thomas, pers. comm; Henley, pers. comm.); several water bodies in **Louisiana**, including the Atchafalaya River, Red River drainage, and Turkey Creek (Carp Task Force 1989; Rasmussen 1998) and the Red-Ouachita River (Douglas et al. 1996); from Lake Pepin (Mississippi River) in **Minnesota** waters in October 2003 (S. DeLain, personal communication); from several water bodies in, or bordering, **Missouri**, including the Mississippi River mainstem, the Missouri, Chariton, Osage, and Salt rivers, among others (Bennett 1988; Robinson 1995; Tucker et al. 1996; Pflieger 1997; Rasmussen 1998; Southern Illinois University; Chapman, pers. comm.; Etnier, pers. comm.) collected in Brick House Slough [vicinity of Alton, IL] (Illinois Natural History Survey 2004); various water bodies in **Mississippi**, including the Yazoo and Pacagoula river drainages (Douglas et al. 1996; Ross 2001; Mississippi Museum of Natural Science 2004) and along the main channel of the Mississippi River of the state below a wing dike (L. Nico, personal communication); the Missouri River area and Platte River of **Nebraska** (Howells 1990; Rasmussen 1998; Nebraska Game and Parks 2000) estblisehd in Boyer Chute National Wildlife Refuge (USFWS 2005); Lake Erie, **Ohio**, off Cedar Point (T. Cavender, personal communication); several sites in the Grand River drainage of **Oklahoma**, including the Neosho River in Ottawa County, Grand River in Mayes County, upper Grand Lake, and Lake Hudson (Pigg et al. 1993, 1997; Rasmussen 1998); the Missouri River up to Gavins Point Dam in **South Dakota** (Rasmussen 1998; W. Stancill, personal communication); the Mississippi River mainstem, the Hatchie River, Gunter'sville Lake, and the Tennessee River near Lake Barkley, **Tennessee** (Etnier and Starnes 1993; Anonymous 1995a; Simms 2005); Victor Braunig, Kirby, and Fort Phantom Hill Reservoirs and Red River below Lake Texoma in **Texas** (Howells 1992a; Rasmussen 1998; Texas Parks and Wildlife 1999; Texas Parks and Wildlife Department 2001); collected near I-81 in Washington County, **Virginia** (Kittrell 1996); and the Ohio River at Moundsville, **West Virginia** (M. Hoeft, personal communication).

**Means of Introduction:** Bighead carp were first imported into the United States in 1972 by a private fish farmer in Arkansas who wanted to use them in combination with other phytophagous fishes to improve water quality and increase fish production in culture ponds. In 1974 the Arkansas Game and Fish Commission and Auburn University, Alabama, obtained stock to assess their potential benefits and impacts (Jennings 1988). The species first began to appear in open waters, the Ohio and Mississippi rivers, in the early 1980s, likely as a result of escapes from aquaculture facilities (Jennings 1988). In April 1994, several thousand bighead carp, along with a few black carp *Mylopharyngodon piceus*, escaped into the Osage River, Missouri, when high water flooded hatchery ponds at an aquaculture facility near Lake of the Ozarks (Anonymous 1994b). Fish that escaped into the Missouri River have increased and spread, since 1990, into the lower Kansas River of Kansas, and elsewhere (Cross and Collins 1995). The species may have dispersed into Oklahoma waters from fish illegally brought into southeast Kansas by a commercial fish farmer in 1988 (Pigg et al. 1993). According to Pigg et al. (1997), collections in the Grand River of Oklahoma since 1991 indicate a gradual downstream dispersal. The species was illegally stocked along with grass carp in one or a few ponds in California; these were brought into the state by a commercial aquaculturist. The live fish were reportedly transported in a concealed compartment under a load of black bass in the fall of 1989 from a fish grower in Oklahoma or Arkansas (Dill and Cordone 1997). The species was illegally stocked in Cherry Creek Reservoir, Colorado (P. Walker, personal communication).

**Status:** This species has been recorded from within, or along the borders of, at least 18 states. There is evidence of reproducing populations in the middle and lower Mississippi and Missouri rivers and the species is apparently firmly established in the states of Illinois and Missouri (Burr et al. 1996; Pflieger 1997). Pflieger (1997) received first evidence of natural reproduction, capture of young bighead carp, in



Missouri in 1989. Burr and Warren (1993) reported on the taking of a postlarval fish in southern Illinois in 1992. Subsequently, Burr et al. (1996) noted that bighead carp appeared to be using the lower reaches of the Big Muddy, Cache, and Kaskaskia rivers in Illinois as spawning areas. Tucker et al. (1996) also found young-of-the-year in their 1992 and 1994 collections in the Mississippi River of Illinois and Missouri. Douglas et al. (1996) collected more than 1600 larvae of this genus from a backwater outlet of the Black River in Louisiana in 1994. The first open water record of this species in Arkansas is based on two specimens taken from the Arkansas River in 1986; however, as of the late 1980s there has been no evidence of natural reproduction in that state (Robison and Buchanan 1988). According to Dill and Cordone (1997), there is evidence that the California ponds containing Chinese carp have spilled since 1989, opening the door for bighead carp and grass carp to gain access to the Sacramento River. The West Virginia record involved a single fish taken in 1997 (Hoefl, personal communication). Harvest of bighead carp by commercial fishermen in Missouri has been somewhat erratic. In 1993, the species accounted for 0.6 percent (3,348 pounds) of the reported commercial fish harvest, a decline from the previous year (Robinson 1995).

**Impact of Introduction:** The impact of this species in the United States is not adequately known. Because bighead carp are planktivorous and attain a large size, Laird and Page (1996) suggested these carp have the potential to deplete zooplankton populations. As Laird and Page pointed out, a decline in the availability of plankton can lead to reductions in populations of native species that rely on plankton for food, including all larval fishes, some adult fishes, and native mussels. Adult fishes most at risk from such competition in the Mississippi and Missouri rivers are paddlefish *Polyodon spathula*, bigmouth buffalo *Ictiobus cyprinellus*, and gizzard shad *Dorosoma petenense* (Burr et al. 1996; Pflieger 1997; Whitmore 1997; Tucker et al. 1998; Schrank et al. 2003). A study by Sampson et al. (2008) found that Asian carp (silver and bighead carps) had dietary overlap with gizzard shad and bigmouth buffalo, but not much of one with paddlefish.

**Remarks:** Similar to the closely-related silver carp *Hypophthalmichthys molitrix*, the bighead carp is a filter feeder that prefers large river habitats. One of the so-called Chinese carps, it has been used in many parts of the world as a food fish and sometimes introduced in combination with silver carp into sewage lagoons and aquaculture ponds (Jennings 1988). In the United States bighead carp are frequently stocked into catfish culture ponds. According to Stickney (1996), studies have not confirmed that bighead carp actually do improve water quality in culture ponds.

Voucher specimens: Florida (UF 98162).

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#### **Other Resources:**

[The Bighead Carp \(\*Hypophthalmichthys nobilis\*\) in Reach 26 of the Mississippi River](#) (Illinois Natural History Survey)

[Asian Carp Regional Coordinating Committee](#)

[Proceedings of the Asian Carp Working Group Meeting, May 24, 2004, Columbia, Missouri](#)

[Facts About Bighead and Silver Carp](#) (USGS)

[Risk Assessment for Asian Carps in Canada](#) (CSAS)

[PA Sea Grant Fact Sheet](#)

[Global Invasive Species Database Factsheet](#)

[Michigan Asian Carp Management Plan](#)

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