ALBERTA invasive species COUNCIL
abinvasives.ca
info@abinvasives.ca

Last Updated April 2016

Bighead Carp

Hypophthalmichthys nobilis (Richardson, 1845) (Aka big head carp)
syn. Hypophthalmichthys mantschuricus, Aristichyths nobilis, Leusicus nobilis

Alberta Regulation:
Fisheries Act

Dezidor

Michigan Sea Grant , University of Michigan and Michigan State University, Bugwood.org

Overview:

Bighead carp is a ray-finned fish of the Minnow Family and are native to China and Russia.[1] They have been introduced around the world for the purposes of aquaculture. They filter-feed exclusively on plankton, competing for food with all larval fish, native mussels, and some adult fish.[1]

Habitat:

Bighead carp occupy freshwater rivers with fluctuating water levels[1] and a water temperature range of 4 to 26 degrees Celsius.[2]

Identification:

Bighead carp are deep-bodied, compressed laterally, and have big heads. The length of the head is greater than the body height and the mouth slants upwards, with the lower jaw extending slightly over the upper jaw.[1] Their eyes are far forward and low on the head and project downward.[3] Body colour is dark gray fading to white on the underside[3] and have numerous, small, scattered black blotches on their sides.[2] Particular to the bighead carp is a smooth keel on the underside which runs from the pelvic and to the anal fins.[3] Their length at maturity is 55-70 cm.[2]

Their scales are very small, with 85-100 scales in the lateral line and 26-28 scale rows above.[1] The dorsal fin has 7 soft rays and a total of 3 spines, the anal fins 1-3 spines and 12-14 soft rays. Gill rakers are long, comb-like and close-set.[1]

Ecology:

They forage in shallow (0.5-1.5 m) and warm areas with slow current and breed in deep, turbid, warm waters with a high current (1.1-1.9 m/s) and high oxygen concentrations.[2] Spring and early summer changes in water flow/level are the stimuli for spawning.[1] Females can lay up to 100,000 yellowish, transparent eggs.[2] The eggs are suspended in the water column as the current carries them downstream[1] and hatch after about 2 days.[2] In the fall juveniles and adults form large, separate schools and migrate downstream to overwinter in deeper waters.[2]

Females reach sexual maturity in 3 years and males 2 although this varies with climatic conditions. Fecundity is directly related to growth rate and increases with age.[3]

Economic Impacts:

Bighead carp directly compete for food with larval and some adult fish which may have value as sportfish or the commercial fish market.

Environmental Impacts:

Bighead carp have the potential to deplete zooplankton populations which can lead to reductions in native species which rely on plankton for food.[1]

Sociological Impacts:

Loss of native fish species and transformation of fish communities results in the intrinsic loss of natural capital and enjoyment of natural areas.

continued next page

ALBERTA invasive species COUNCIL
abinvasives.ca
info@abinvasives.ca

Bighead Carp (Continued)

Prevention:

Accidental and intentional releases are responsible for bighead carp introduction and spread. Range expansion may also occur if introduced carp move into and colonize other rivers and lakes. Never, ever empty your aquarium into natural water bodies.

Control:

Currently, there are no established control options for bighead carp in Alberta other than recreational fishing and capture.

Courtesy of US Fish & Wildlife Service , Michigan Sea Grant, Bugwood.org

REFERENCES

1 Hypophthalmichthys nobilis. Global Invasive Species Database. www.issg.org/database. Accessed: December 9, 2015.

2 Hypophthalmichthys nobilis, Bighead carp. www.fishbase.ca/summary/6376. Accessed: January 2, 2016.

3 Nico, L., P. Fuller and J. Li. 2016. Hypophthalmichthys nobilis. USGS Nonindigenous Aquatic Species Database, Gainesville, FL. http://nas.er.usgs.gov/queries/factsheet.aspx?SpeciesID=551 Revision Date: 1/22/2015. Accessed January 2, 2016.

ALBERTA invasive species COUNCIL

abinvasives.ca

info@abinvasives.ca