



Illinois Department of Natural Resources

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Tracking the Effects of Invasive Carps on Native Fish Populations

Grades 5 - 8

MS-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

Summary:

Students will examine a data set of fish populations in a portion of the Illinois River to determine if nonnative invasive carp populations (bighead carp *Hypophthalmichthys nobilis*, black carp *Mylopharyngodon piceus*, grass carp *Ctenopharyngodon idella* and silver carp *Hypophthalmichthys molitrix*) have had any effect on native fish populations.

Objective:

Students will: (1) analyze the data set provided; and (2) use their analysis to formulate and support their conclusion.

Materials:

Upper Mississippi River Restoration Program Long-Term Resource Monitoring Web site:
<https://umesc.usgs.gov/ltrm-home.html>
data set compiled by the Illinois Department of Natural Resources' Division of Education
graph paper and writing materials

Background:

There is major concern over the introduction and progression of nonnative invasive carp (bighead carp, black carp, grass carp and silver carp) populations in North American waters. A perceived threat is the effect on local, indigenous fish populations. This activity will focus on fish populations present in a section of the Illinois River near Havana, Illinois, over the years 1999 through 2019. The sampling timeframe is from June 15 to October 31 and includes three separate sampling periods annually (June 15 to July 31, August 1 to September 15 and September 16 to October 31.) Fishes were collected using five types of collection equipment/methods: day electrofishing; fyke netting; large hoop netting; small hoop netting; and mini fyke netting. Standard locations are generally sampled, unless there are problems with water depth (either too high or too low). Employees of the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Illinois Natural History Survey and Illinois Department of Natural Resources participate

in the surveys. The data sets presented here only concern the total number of fish captured for each fish species listed. Additional data sets are available for many more species, including weight and length for some.

Procedure:

1. Present the data set to the students or have them graph the listed species. Ensure that you stress the high and low population points.
2. Facilitate a discussion concerning possible reasons/explanations as to variations in fish populations from year to year for the listed species.

Evaluation:

Have the students write a two-page paper using data to support the claim that nonnative invasive carps have an impact on native fish populations. Students should use examples to justify their reasoning.