

# Harlan Reservoir

## 2015 Fish Population Survey Summary

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Fish populations are surveyed every year at Harlan Reservoir using several methods. Gill nets are used to sample open-water fish species such as walleye and white bass, and trap nets are used for shoreline-oriented fish such as crappie. Netting surveys are completed at approximately the same dates and locations to reduce variability and allow for trend comparisons of species abundance and size distribution.

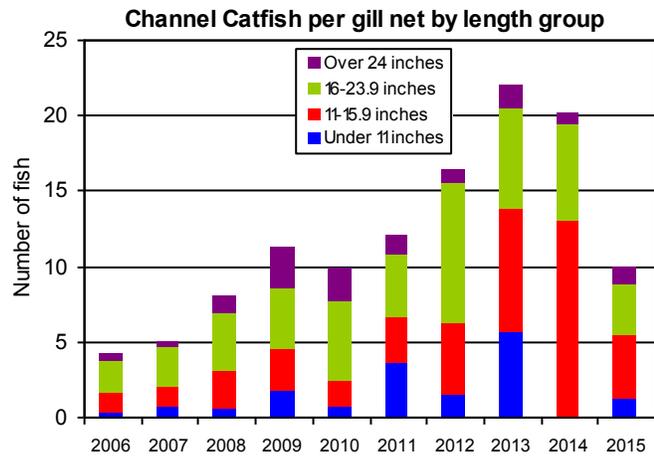
The following graphs and text provide summaries of netting surveys completed at Harlan Reservoir. Graphs on the following pages show the total number of fish caught per net and the relative abundance of fish within several length categories. The text provides brief explanations of the information contained in the graphs. In most cases, results are included from the last 10 years.



## Channel Catfish

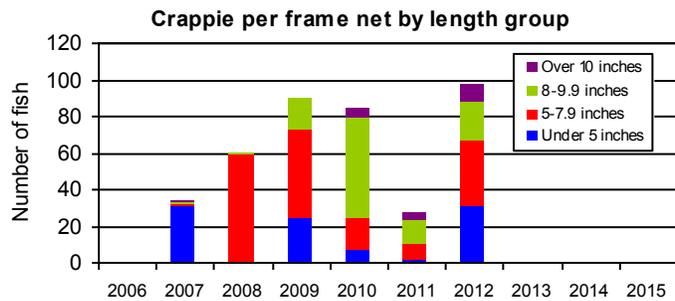
Gill net catch of channel catfish was much lower in 2015, and the first overall decrease in the last five years. Catfish were present in all size groups, ranging from 8 to 28 inches long, with an average length of 15 inches.

Current fishing regulations for channel catfish include a daily bag limit of five (5) in the reservoir, and a daily bag limit of ten (10) in the river. Harlan catfish anglers should expect good fishing in 2016 with a good variety of sizes available.



## Crappie

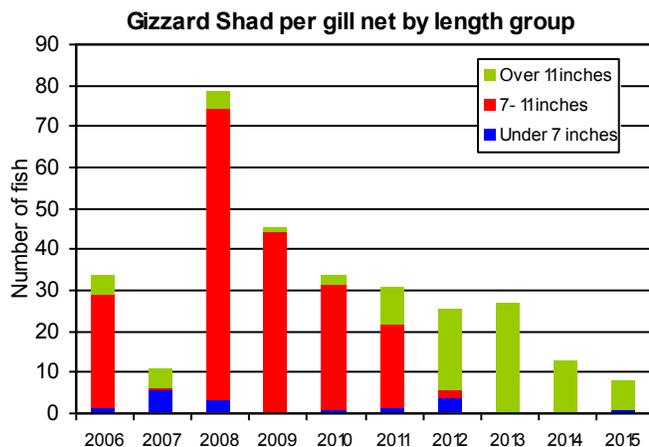
Because of low reservoir water levels, trap nets used to sample crappie were not used from 2013 through 2015. Crappie sampling will resume when water levels allow sampling at standard locations. Good crappie recruitment was documented from 2007 to 2012. Anglers should still be able to locate some crappie at Harlan Reservoir, although low water conditions are negatively affecting crappie abundance and angling success.



## Gizzard Shad

Gizzard shad numbers continued a downward trend from the peak of 2008. Most shad sampled in 2015 ranged from 13 to 15 inches long. Large numbers of intermediate-sized shad result in more competition for food resources with juvenile gamefish, and may reduce survival of young -of-the-year walleye and white bass.

No small shad were sampled in the 2015 survey, but were observed and may have been too small to sample with standard gill nets. Gizzard shad are the most important prey species in Harlan Reservoir and serve as food for all the major game fish populations.



# Walleye

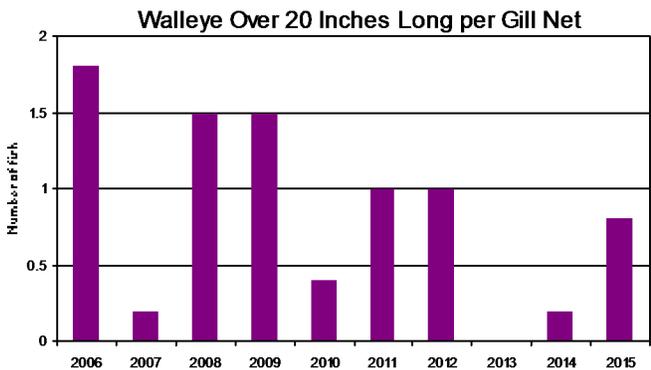
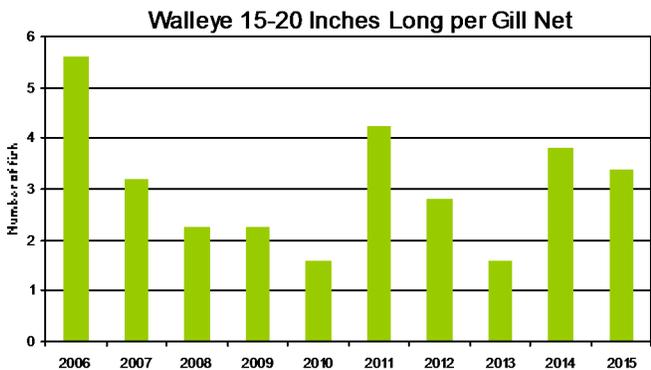
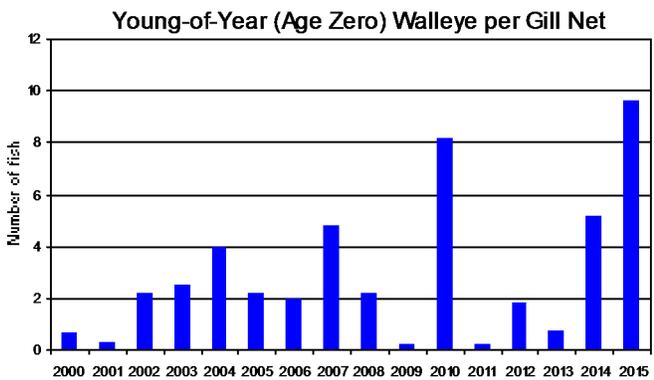
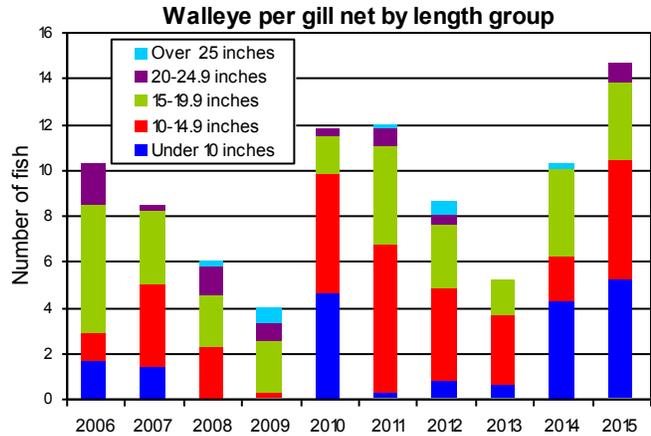
Walleye survey information is displayed on four graphs: all sizes, young-of-year, 15-20 inches, and over 20 inches.

The first graph shows the 2015 walleye abundance was the highest in the last ten years. Walleye ranged from 10 to 24 inches long with an average of 12 inches. The 2015 year-class represents the best recruitment ever sampled at Harlan. There has been very good walleye fishing at Harlan the last two years, and with high recruitment in 2014 and 2015, walleye fishing should be excellent in the future.

Numbers of young-of-year walleye in 2015 were the highest every sampled (second graph). The last seven year-classes of walleye were all augmented with walleye fry stockings of about 14 million fish each year. With three excellent recruitment years since 2010, overall walleye numbers at Harlan are the highest in recent history.

Walleye between 15 and 20 inches long are presented in the third graph. Numbers of fish in this size range were similar to last year, and are slightly higher than the last 10 year average. Walleye in this size range are generally 2 to 4 years old. Related to the walleye fishing regulation at Harlan, the survey showed 71% of walleye are under 15 inches, 21% from 15-18 inches, and 8% over 18 inches.

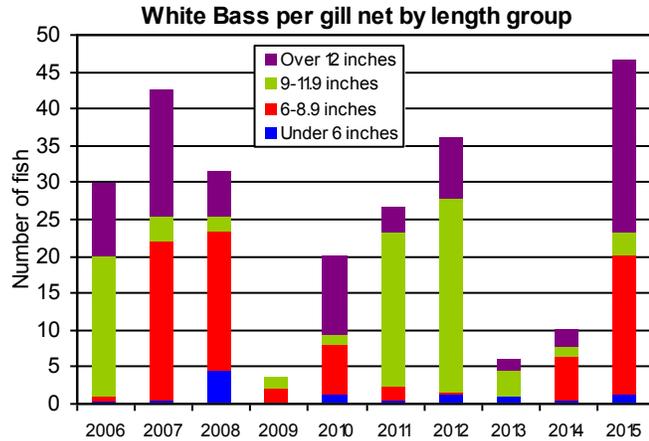
Walleye over 20 inches long are displayed in the fourth graph. Walleye numbers in this size group increased in 2015, and are near the last 10-year average. Most walleye in this size range are age five or older.



## White Bass

White bass gill net catch increased dramatically in 2015, and was the highest from the last 10 years.

The most abundant white bass in the 2015 survey were over 12 inches long, and 6 to 9 inch fish also well represented. The average white bass size was 11 inches long. Similar to walleye, recruitment of white bass has been good the last few years, and should help maintain a good population of white bass in Harlan Reservoir.

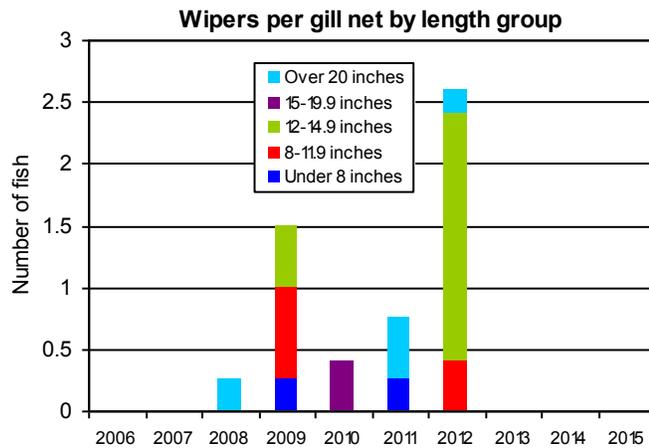


White bass fishing was excellent in 2012, but only average from 2013 to 2015. Based on 2015 survey results, there should be excellent white bass fishing in the future.

## Wipers

No wipers were sampled in gill nets from the last three netting surveys, which ended a trend of increasing wiper net catches from 2008 to 2012.

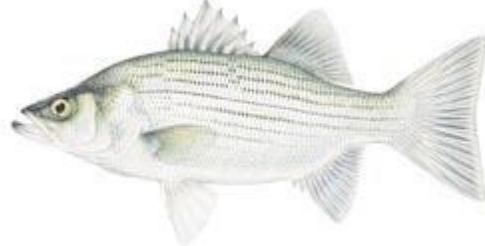
Results from a 2002-2003 food habit study at Harlan involving major predator fish species indicated very little competition between wipers and walleye. Based on those results, wiper stocking was reinstated in 2005, with current stockings planned every other year. The current stocking program should improve the population to provide a sustainable sport fishery with potential for trophy fish.



**White Bass**



**Hybrid Striped Bass (Wiper)**



# Additional Information about Harlan Reservoir

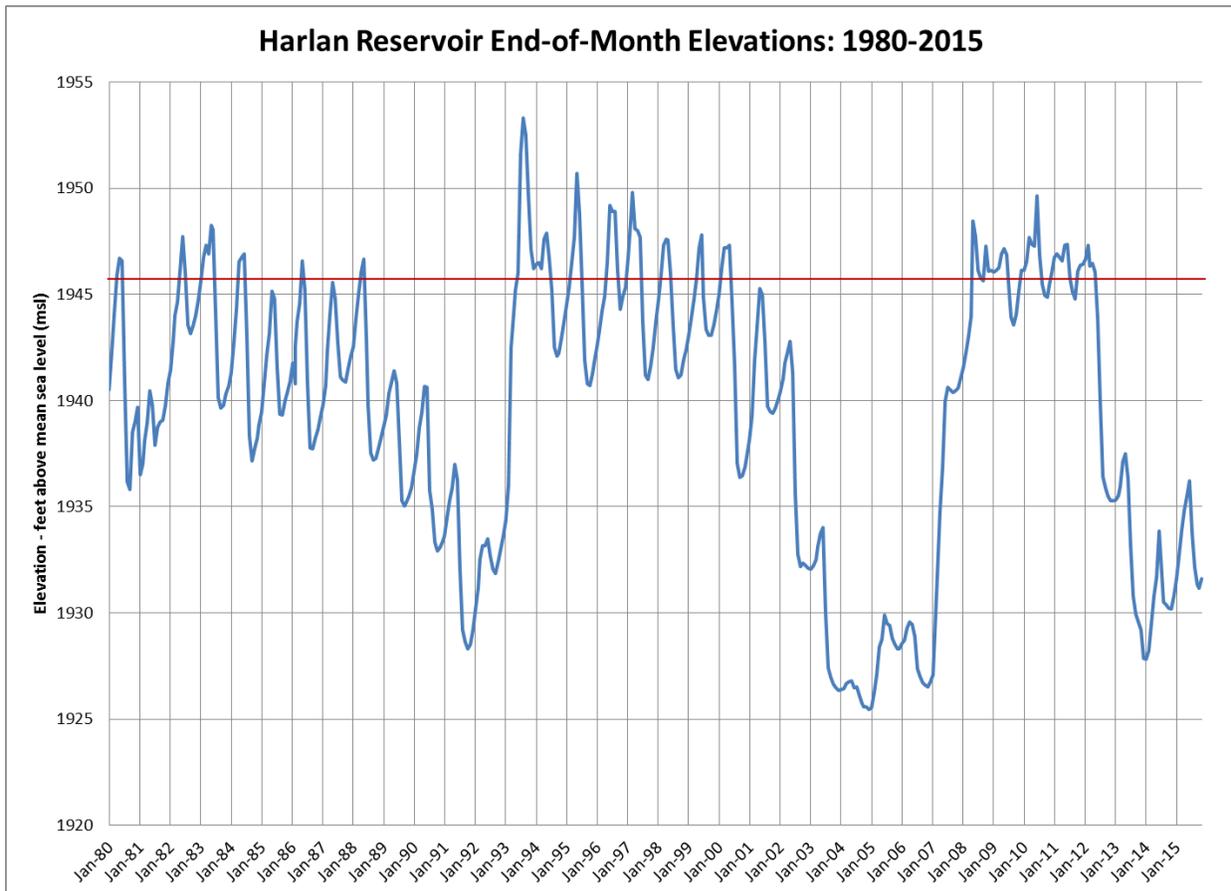
## Water Levels

After high water conditions from 2007 through 2011, Harlan Reservoir experienced a large drop in water levels from 2012 through 2015. The reservoir dropped about 10 feet during 2012, and another 8 feet by the end of 2013. Water levels did not change dramatically in 2014 or 2015, but the excellent aquatic habitat conditions associated with the high water have been reduced, and lower production of shoreline-oriented species is expected.

The following graph shows end-of-month water elevations at Harlan Reservoir from 1980 through 2015, and the red line shows the conservation pool elevation of 1946msl.

Current lake elevations can be found on the U.S. Army Corps of Engineers website:

<http://www.nwd-mr.usace.army.mil/rcc/nwk/7daylak3.txt>



## Dam Road Closure at Harlan Reservoir

There is an ongoing multi-year construction project on the dam at Harlan Reservoir. During construction, the road on the dam may be closed temporarily for construction activity. When the dam road is closed, vehicles access the Patterson Harbor area by driving the signed detour route through Naponee. Road closure information is available from the US Corps of Engineers office at 308 799-2105.

## **Additional Information about Harlan Reservoir**

### **Walleye Stocking**

Walleye fry have been stocked at Harlan annually since 2009, with about 14 million each year. Walleye recruitment has been documented in each of these years, including a record number of young-of-year walleye in 2015. Walleye recruitment has been excellent three of the last five years. Special research sampling of young-of-year walleye from 2011 through 2015 has shown that over 90% of sampled young walleye were stocked fish. Based on recent recruitment success, walleye fry stockings are planned annually at a rate of 1,000 per surface acre of water.



### **Channel Catfish Stocking**

Harlan Reservoir received stockings of channel catfish in 2007 and 2009 due to declining population trends and low recruitment. Each catfish stocking consisted of 10 fish per acre that were 5 to 7 inches long. Based on survey results, recent catfish recruitment has been good, and the catfish population has recovered enough to discontinue stockings.

### **Wiper Stocking**

Based on results of several years of research into predator fish interactions in Harlan Reservoir, wiper stockings started again in 2005 and are currently scheduled for every other year. The most recent stocking was about 46,500 wiper fingerlings in 2014.

### **Largemouth Bass and Northern Pike Stocking**

To take advantage of shoreline habitat associated with higher lake levels, largemouth bass and northern pike fingerlings were stocked from 2008 through 2012. Future stocking of these species is dependent on the availability of shoreline habitat.

### **Walleye Egg Collections**

Walleye eggs were collected at Harlan Reservoir from 2003 through 2006, with most used for walleye fry stockings in Nebraska. No walleye eggs have been collected from Harlan since 2006. Walleye egg collections are planned at Sherman, Merritt, and McConaughy in 2016.

### **Angler Survey**

An angler survey will be completed in 2016 at Harlan Reservoir from April through October. This survey is done in cooperation with the University of Nebraska-Lincoln. The survey provides valuable information on angling pressure, catch rates, harvest rates, and numbers and types of fish caught.

# Attention motorboat owners operating in Nebraska:

Starting in 2016, boaters whose motorized watercraft are registered in any state other than Nebraska must purchase and display a \$15 Aquatic Invasive Species (AIS) Stamp each year they launch their boat in Nebraska. The stamp will help fund AIS education and inspection programs.



- ◆ Boat inspections for AIS prior to launch in Nebraska are NOT mandatory at this time.
- ◆ Personal watercraft registered outside of Nebraska must have this stamp.
- ◆ Non-motorized craft registered in any state are exempt from the stamp.
- ◆ Stamps are not required for boats registered in Nebraska. A \$5 AIS fee is included on the residents' three-year boat registrations.
- ◆ Residents who register their boats in other states must have this stamp before launching in Nebraska.

This stamp is available online at [OutdoorNebraska.org](http://OutdoorNebraska.org) or at Nebraska Game and Parks permitting offices.

Learn more about invasive species at [neinvasives.com](http://neinvasives.com).



## Aquatic Invasive Species – Zebra Mussels

Anglers and recreational boaters should be aware of the threat of zebra and quagga mussels while using Nebraska waters. Currently in Nebraska, zebra mussels have been documented at Offutt Air Force Base, the Missouri River, and Lewis and Clark Lake. Invasive mussels have been documented in most of Nebraska's neighboring states, including over 20 locations in Kansas. Monthly monitoring completed at many Nebraska reservoirs during the last five years have not shown any new evidence of zebra mussels.

Anglers and boaters using Nebraska waters need to be aware of **current regulations** dealing with aquatic invasive species. The following regulations are in effect to help prevent the spread or introduction of unwanted species in Nebraska waters.

- **Any watercraft that has been on a Nebraska waterbody must drain the lake water from their compartments, equipment or containers before leaving the launch area. It is illegal to dump baitfish into a Nebraska waterbody.**
- **Livewells need to be drained prior to leaving a launch area: plan ahead and bring a cooler for harvested fish.**
- **All aquatic vegetation from that waterbody attached to the watercraft and/or trailer must be removed before leaving the launch area.**
- **It is unlawful to arrive at or leave any waterbody in Nebraska with water other than from a domestic source (such as a water supply system, well, or bottled), except for fire-fighting purposes. This applies especially to boats, their compartments, equipment or containers that may hold water.**

A good source of information about invasive species can be found on the University of Nebraska's Invasive Species Project website:

<http://neinvasives.com/resources/stop-aquatic-hitchhikers/>

Technicians have been hired the past few years to conduct interviews of boaters and help provide more information about aquatic invasive species. Harlan Reservoir has been a priority location for this effort in the past, and will likely continue in future years.



For additional information about fisheries management at Harlan Reservoir, please contact the Nebraska Game and Parks Commission office in Kearney at 308-865-5310, or by email at the addresses listed below.

District Manager: Brad Newcomb, [brad.newcomb@nebraska.gov](mailto:brad.newcomb@nebraska.gov)

Biologist: Brad Eifert, [brad.eifert@nebraska.gov](mailto:brad.eifert@nebraska.gov)