Harlan Reservoir

2014 Fish Population Survey Summary

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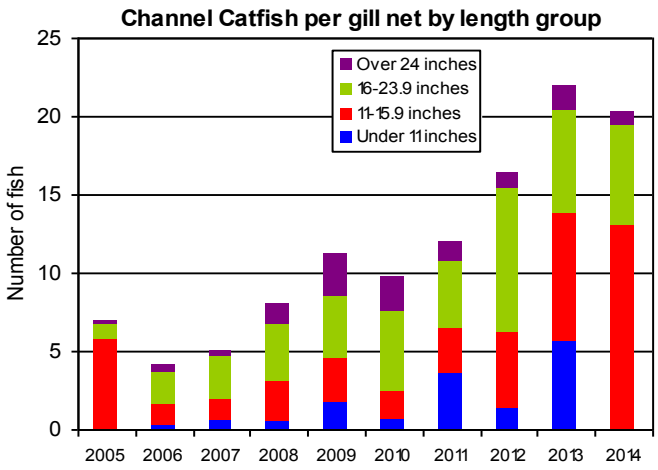
The following text and graphs are summaries of netting surveys completed during October 2014 at Harlan Reservoir. Results from previous years are included for comparative purposes. Fish populations are sampled each fall at Harlan using gill nets to sample fish species found primarily in open water, such as walleye and white bass. Trap nets are used to sample shoreline-oriented fish, such as crappie. Sampling nets are set each year at approximately the same locations and dates to reduce variability and allow for trend comparisons of species abundance and size distribution.

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 a brief explanation of the information contained in the graphs.

Channel Catfish

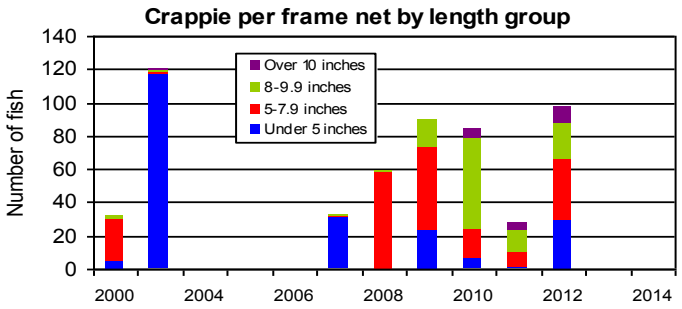
Channel catfish abundance in 2014 was slightly lower that 2013, but still well above the average from the last 10 years. Catfish were are present in all size groups, except for fish under 11 inches. The average length of catfish was 16 inches, and the largest was 28 inches.



Recruitment of small catfish was good from 2007 through 2013, but no small catfish were sampled in 2014. 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 excellent fishing in 2015 with a good variety of sizes available.

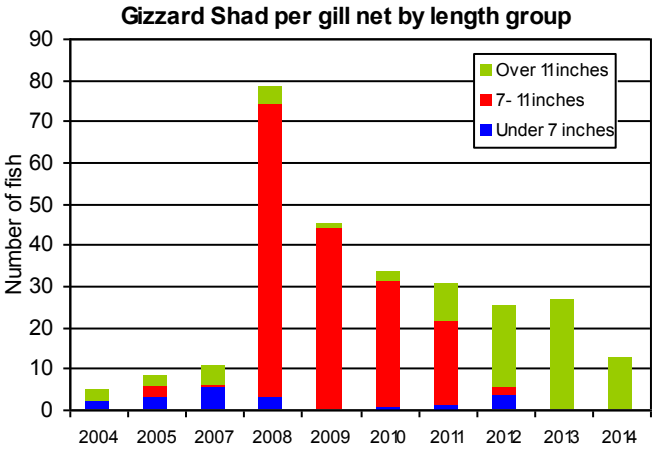
Crappie

Because of low reservoir water levels, trap nets used to sample crappie were not used in 2013 or 2014. Crappie sampling will resume when water levels allow sampling at standard locations. Crappie recruitment was documented in all years from 2007 to 2012, and anglers should still be able to locate some crappie at Harlan Reservoir in 2015, although low water conditions may affect crappie distribution and angling success.



Gizzard Shad

Gizzard shad numbers continued a downward trend from the peak of 2008. Most shad sampled in 2014 ranged from 12 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.

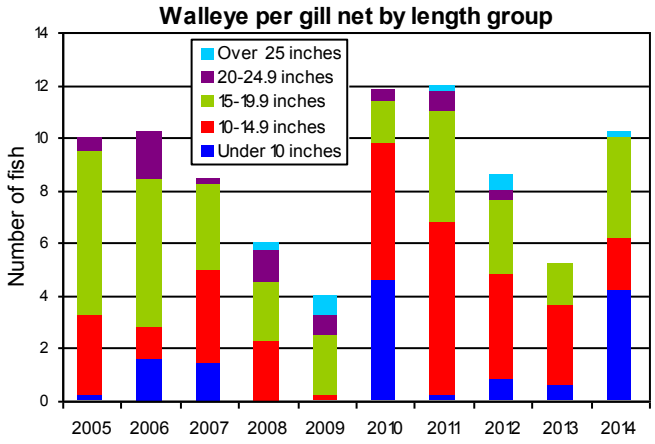


No small shad were sampled in the 2014 survey, but were observed and may have been too small to sample with standard gill nets. Gizzard shad are the most important prey species in Harlan Reservoir and serve as food for all the major game fish populations.

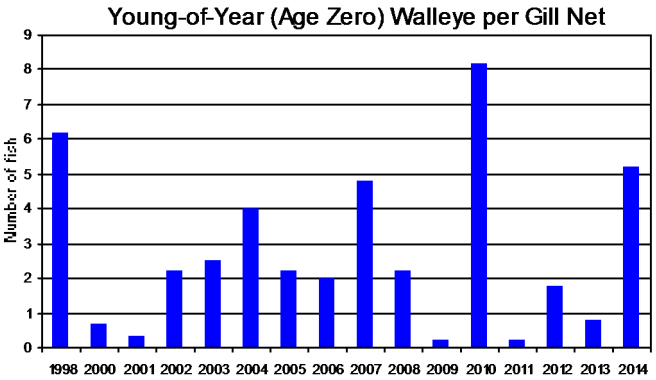
Walleye

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

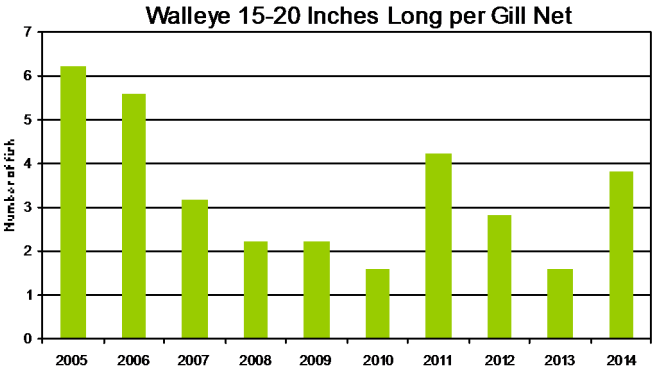
From the first graph, overall walleye abundance increased in 2014, and was near the highest level from the last ten years. Walleye ranged from 9 to 27 inches long with an average of 13 inches. All year-classes from 2010 to 2014 were represented in the 2014 survey. No walleye were sampled from the 20-25 inch size group. Harlan produced excellent walleye fishing in 2014, and the fall survey showed that good numbers remain in most size groups.



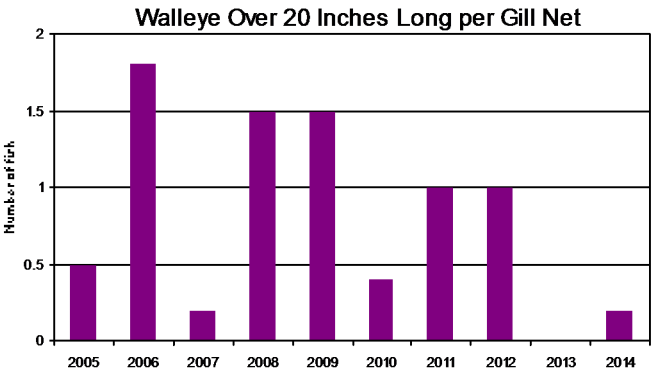
Numbers of young-of-year walleye in 2014 were very high and near the record level of 2010 (second graph). The last six year-classes of walleye all correspond with walleye fry stockings of about 14 million fish each year. With two excellent recruitment years since 2010, overall walleye numbers at Harlan should be relatively high.



Walleye between 15 and 20 inches long are presented in the third graph. Numbers of fish in this size range increased from the previous two years, 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 62% of walleye are under 15 inches, 23% from 15-18 inches, and 15% over 18 inches.



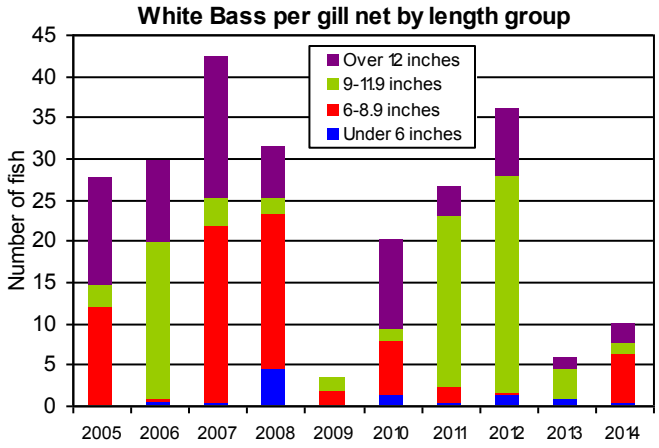
Walleye over 20 inches long are displayed in the fourth graph. Walleye numbers in this size group have declined the last two years, likely a result of high fishing mortality. Most walleye in this size range are age five or older.



White Bass

White bass net catch increased from the 2013 survey, but was well below the average from the past ten years.

The most abundant white bass in the 2014 survey were from 6 to 9 inches long, and mostly ages 0 and 1. The average white bass size was 9 inches. 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. There is still a good percentage of white bass over 12 inches long.

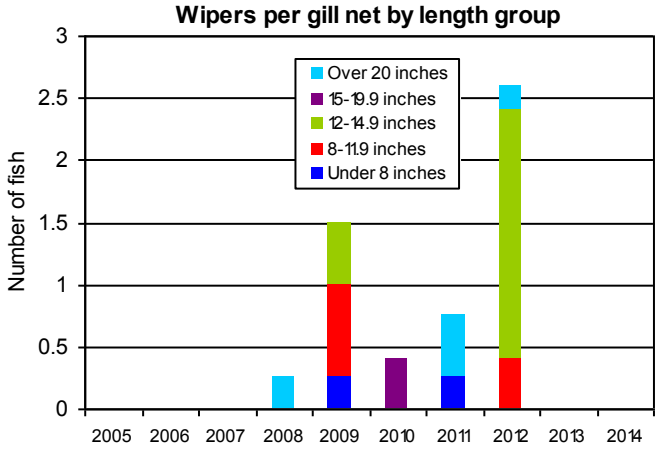


Netting surveys prior to the last two years showed an excellent white bass population. White bass fishing was excellent in 2012, and average in 2013-2014. Based on results from the last five surveys, there should still be good white bass fishing potential in 2015.

Wipers

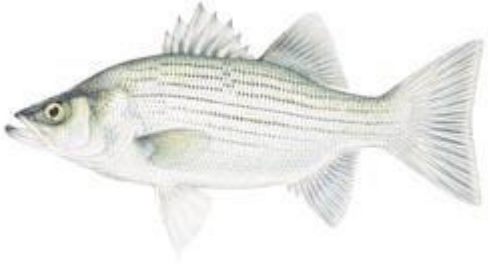
No wipers were sampled in gill nets during the 2013 or 2014 standard netting surveys, which ended a trend of increasing wiper net catches from 2008 to 2012.

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 stockings planned every three years. 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)



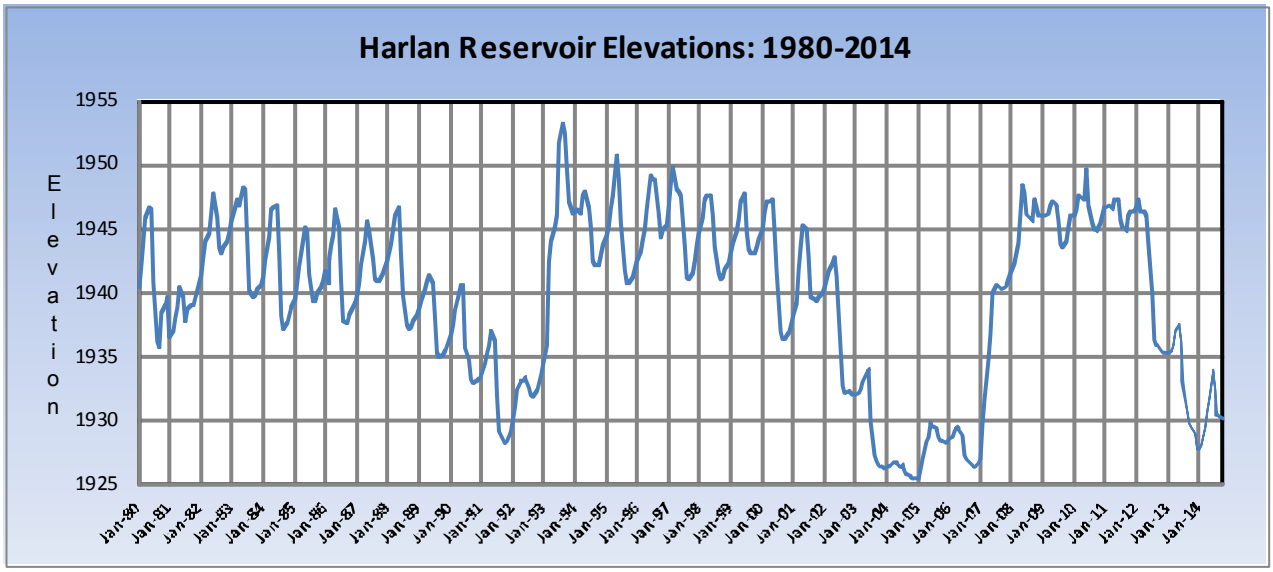
Additional Information about Harlan Reservoir

Water Levels

After high water conditions from 2007 through 2011, Harlan Reservoir experienced a large drop in water levels from 2012 through 2014. 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. The excellent aquatic habitat conditions associated with the high water have been reduced, and lower production of shoreline-oriented species is expected.

The high water levels and improved aquatic habitat from 2007 through early 2012 resulted in good recruitment of most major fish species in Harlan. If reservoir elevations stay near current levels, recruitment of most fish species will be affected**.**

The following graph shows end-of-month water levels at Harlan Reservoir from 1980 through 2014.



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

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 2010. Walleye recruitment in 2014 was also very high, and not far from the record level from 2010. Special research sampling of young-of-year walleye from 2011 though 2013 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 very good, and the catfish population has recovered enough to discontinue stockings.

Wiper Stocking

Based on results of several years of research into wiper interactions in Harlan Reservoir, wiper stockings started again in 2005 and are scheduled for every three years. 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, and are not planned for 2015.

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, and none are planned for 2015. Walleye egg collections are planned at Sherman, Merritt, and McConaughy in 2015.

Angler Survey

An angler survey will be completed in 2015 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.

Zebra Mussels - Aquatic Invasive Species

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 23 locations in Kansas. Monthly monitoring completed at many Nebraska reservoirs during the last four 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 still 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**.
- NEW for 2015: ***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.

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