

Harlan Reservoir

2013 Fish Population Survey Summary

Nebraska Game and Parks Commission
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The following text and graphs are summaries of netting surveys completed during October 2013 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 frame nets to sample shoreline-oriented fish, such as crappie. The nets are set each year at approximately the same locations and dates as previous years, which reduces variability and allows for trend comparisons of species abundance and size distribution.

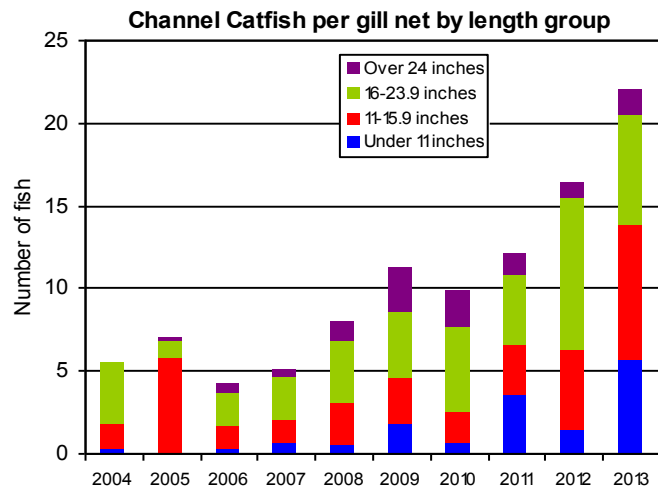


Graphs on the following pages show the total number of fish caught per net and the relative abundance of fish within several length categories. The text provides a brief explanation of the information contained in the graphs.

Channel Catfish

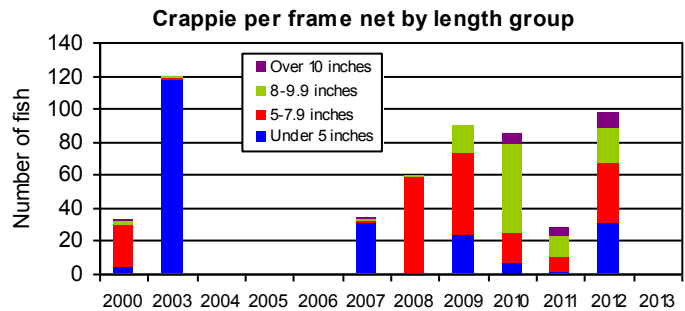
Channel catfish abundance in 2013 was the highest in the last ten years, and continued an upward swing since the long-term low in 2006. Catfish are present in all size groups, including catfish over 24 inches. The largest catfish sampled was 28 inches long.

Recruitment of small catfish has been good from 2007 through 2013. Current fishing regulations for channel catfish regulations 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 2014 with a good variety of sizes available.



Crappie

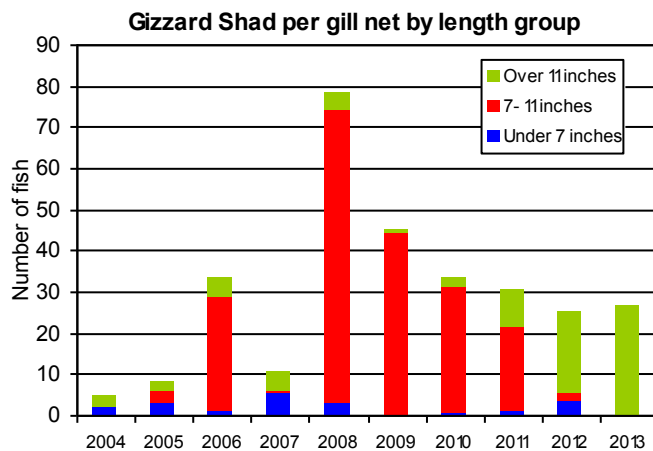
Because of low reservoir water levels, trap nets used to sample crappie were not used in 2013. Standard sampling locations were either dry or nearly dry and prevented the use of trap nets. Crappie sampling will resume when water levels allow sampling at standard locations. Crappie recruitment was documented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



Gizzard Shad

Gizzard shad numbers were similar to the previous year, and still down from the peak of 2008. Most shad ranged from 12 to 14 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 2013 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

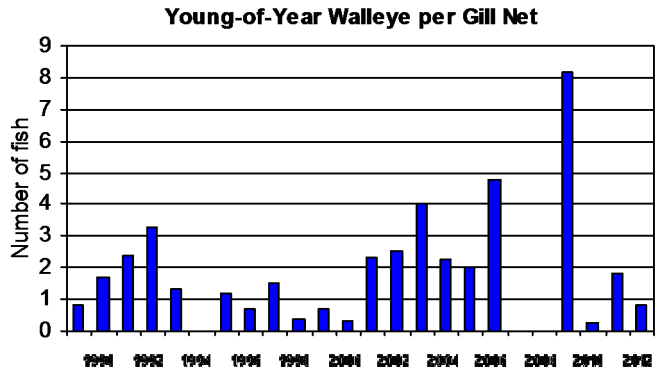
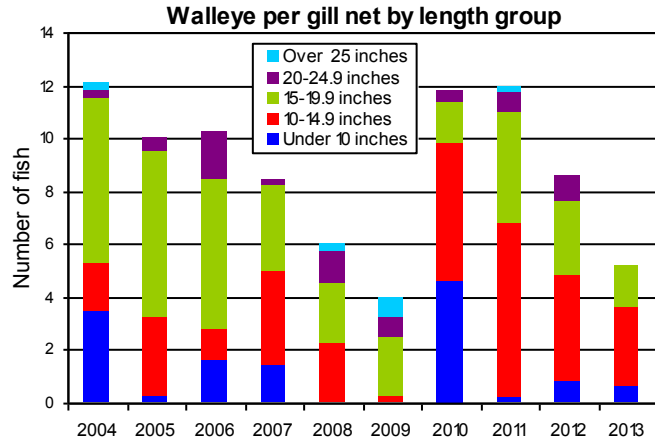
Walleye abundance in 2013 was lower than the previous three years, and near the low levels observed in 2008 and 2009.

No walleye over 20 inches were sampled in the 2013 survey. Sampled walleye ranged from 8 to 17 inches, and 0 to 3 years old. Numbers of young-of-year walleye in 2013 were slightly below average, and much lower than the record level of 2010 (second graph).

The last three year-classes of walleye were all represented in the 2013 survey, and all correspond to walleye fry stockings of about 14 million fish each year. Water levels have changed dramatically during this time frame, and ended very low at the end of 2013.

Harlan produced good walleye fishing in 2013, and the fall survey may reflect reduced numbers due to high walleye harvest. Low reservoir water levels can also change walleye and shad distributions, which can impact survey results.

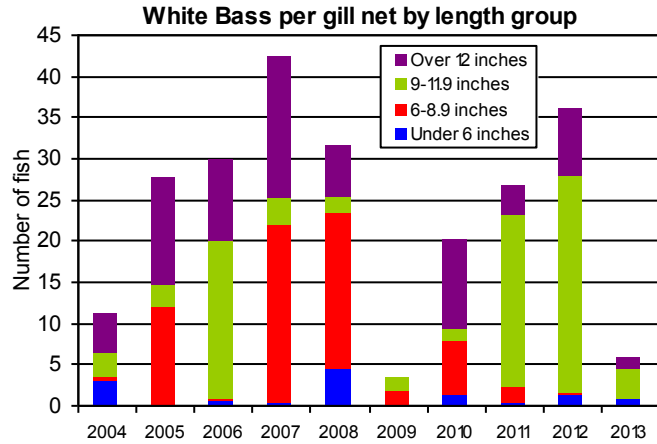
With overall good walleye recruitment the last few years, walleye anglers at Harlan should expect good walleye fishing, but probably down from the 2013 fishing year.



White Bass

White bass net catch decreased significantly in the 2013 survey, and was similar to the survey results from 2009. As with the walleye survey results, white bass net catches may have been influenced by low reservoir water levels and uneven distribution of predator and prey fish species in the reservoir.

The most abundant white bass in the 2013 survey were just under 12 inches long, and mostly age three. 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.

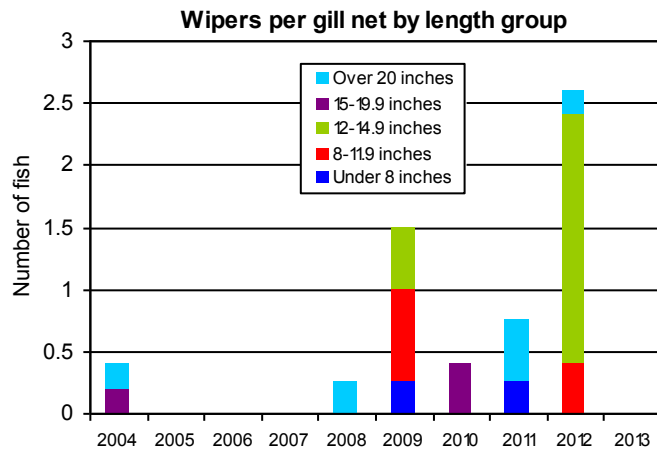


Netting surveys before 2013 have shown an excellent white bass population, and white bass fishing went from excellent in 2012 to average in 2013. The 2013 netting survey probably underestimated the current population level, and based on surveys from 2010-2012, there should still be good white bass fishing potential in 2014.

Wipers

No wipers were sampled in gill nets during the 2013 standard survey. This ended the recent trend of increasing wiper net catches at Harlan Reservoir. As with other survey results, wiper net catches may have been influenced by low reservoir water levels and uneven distribution of predator and prey fish species in the reservoir.

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)



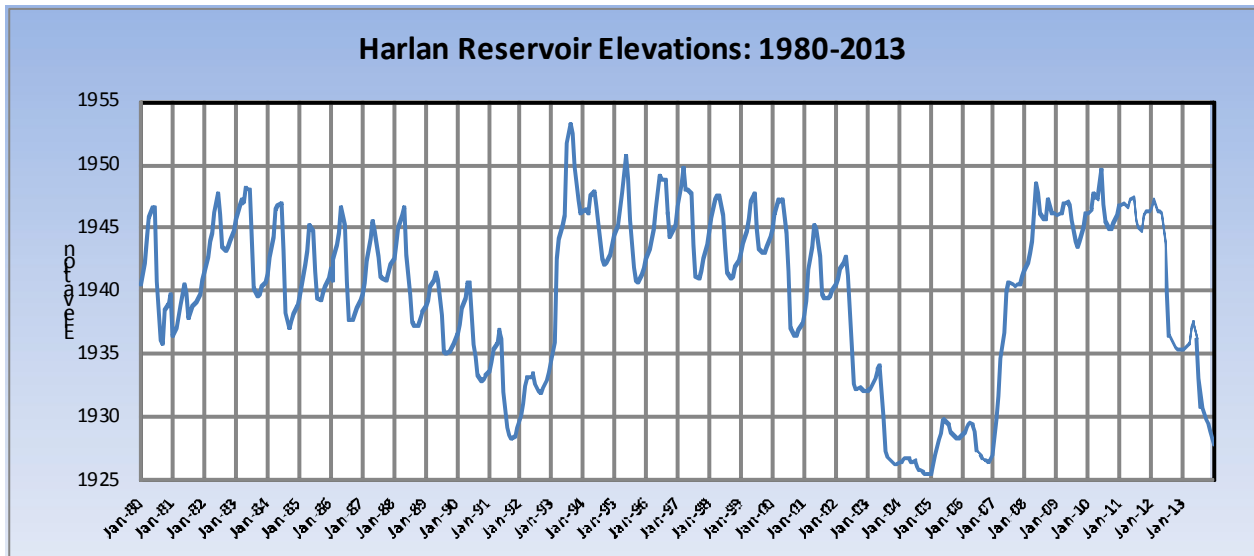
Additional Information about Harlan Reservoir

Water Levels

After high water conditions from 2007 through 2011, Harlan Reservoir experienced a large drop in water levels in 2012 and 2013. The reservoir dropped about 10 feet during 2012, and then dropped another 8 feet by the end of 2013. 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 2013.



Additional Information about Harlan Reservoir

Fish Stocking

Walleye

Walleye fry stockings have been completed 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. Based on recent recruitment success, walleye fry are requested for future stockings at a rate of 1,000 per surface acre of water.



Channel Catfish

Due to declining population trends and low recruitment, Harlan Reservoir received a stocking of channel catfish in 2007 and 2009. 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

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 57,000 wiper fingerlings in 2013.

Largemouth Bass and Northern Pike

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, and none are planned for 2014.

Aquatic Habitat Project at Harlan Reservoir

The overall goal of the Harlan aquatic habitat project is to restore and protect selected shoreline, point, and cove habitats in order to improve or sustain recreational fisheries.

Field work for the Harlan project was completed in 2013. Flatwater Consulting Group provided plans and specifications, while Frahm Construction completed field construction work. Rock breakwaters were completed at Gremlin Cove and Patterson Harbor. Dredging and a handicap accessible fishing pier were also completed at Gremlin Cove. The following photos show the completed project in the fall of 2013:



Gremlin Cove (Sep 2013):



Aquatic Habitat Project at Harlan Reservoir

Patterson Harbor (Sep 2013):



Zebra & Quagga Mussels

Anglers and recreational boaters should continue awareness for zebra and quagga mussels while using Nebraska Lakes. Monitoring was completed at many Nebraska reservoirs during 2011-2013, and no evidence of mussels was found. Currently in Nebraska, zebra mussels have only been documented near Omaha at Offutt Air Force Base, Zorinsky Lake, and the Missouri River. Invasive mussels have been documented in several neighboring states, including Colorado, Iowa, Kansas, and Missouri.

Anglers and boaters using Nebraska waters need to stay aware of **current regulations** dealing with aquatic invasive species that started in 2013. 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.**

Anglers and boaters are encouraged to educate themselves on aquatic invasive species. An excellent source of information regarding invasive species can be found on the University of Nebraska's Invasive Species Project website: <http://neinvasives.com/>



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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