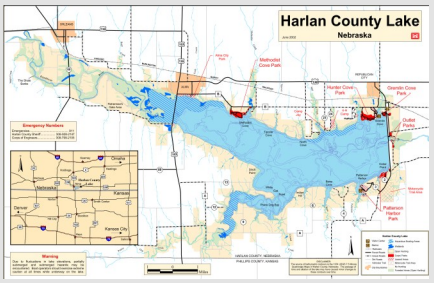
Harlan Reservoir

2012 Fish Population Survey Summary

Nebraska Game and Parks Commission
Brad Newcomb, District Manager

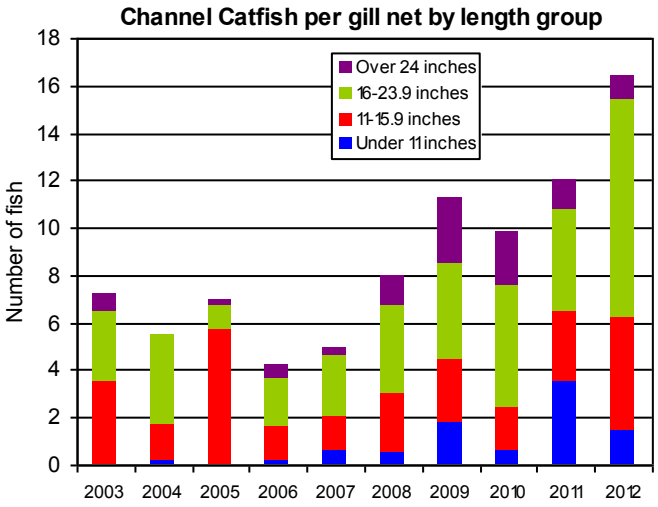


The following text and graphs are summaries of netting surveys completed during October 2012 at Harlan Reservoir. For comparative purposes, results from previous years are also included. Fish populations are sampled each fall at Harlan using gill and frame nets. Gill nets are used to sample fish species found primarily in open water, such as walleye, while frame nets are used 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.

The following graphs 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

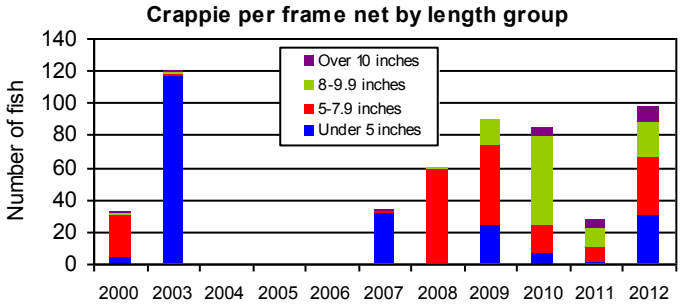
Channel catfish abundance in 2012 was the highest in the last ten years, and continued an upward swing since the long-term low in 2006. Catfish are present in all size groups, including good representation of catfish over 24 inches. The largest catfish sampled was 29 inches long.



Recruitment of small catfish has been good from 2007 through 2012. Recruitment has improved with 2007 and 2009 stocking and improved water levels and habitat. The new channel catfish regulations includes 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 2013 with a good variety of sizes available.

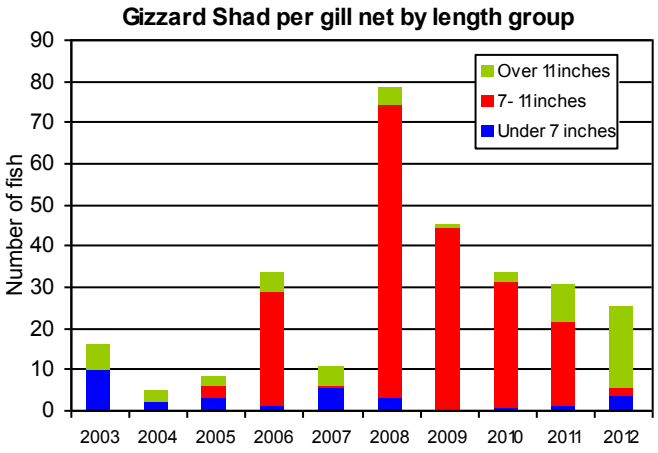
Crappie

The 2012 survey showed very high numbers of crappie, with a good size distribution. Crappie recruitment has been good since 2007 resulting from high water levels and abundant shoreline and cove habitats. Crappie recruitment has been documented in all years from 2007 to 2012. Anglers should find good crappie fishing at Harlan Reservoir in 2013. The lake water level dropped about 10 feet during 2012, and may affect crappie distribution and angling success during lower water elevations.



Gizzard Shad

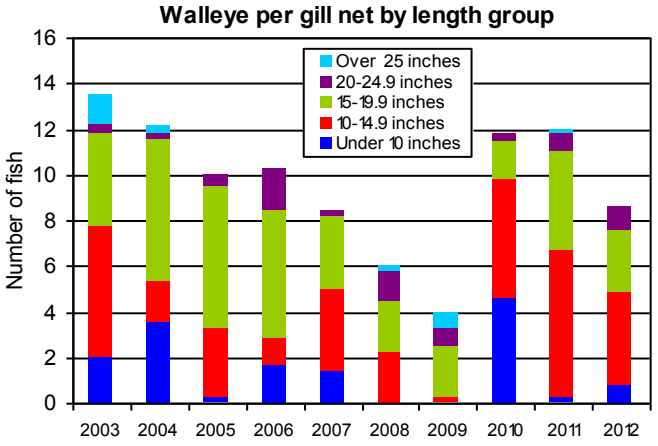
Gizzard shad numbers continued a downward trend from the peak in 2008. Most shad ranged from 12 to 13 inches long. Large numbers of intermediate-sized shad result in more competition for food resources with juvenile gamefish, and may reduce survival of young-of-the-year walleye and white bass.



The 2012 survey showed an increase in small shad (less than 7 inches). Gizzard shad are the most important prey species in Harlan Reservoir and serve as food for all the major game fish populations. Good production of young shad should contribute to good annual recruitment and growth of predator fish species such as walleye and white bass.

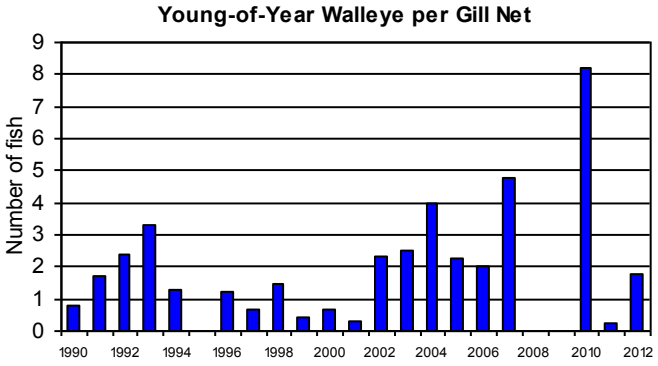
Walleye

Walleye abundance in 2012 was slightly lower than the previous two years, but still much improved from the low numbers in 2008 and 2009.



Walleye size and age distribution were very good. Walleye ranged from zero to eight years old, with ages zero through four the most abundant. Numbers of young-of-year walleye in 2012 were much higher than 2011, but still below the record level of 2010 (second graph).

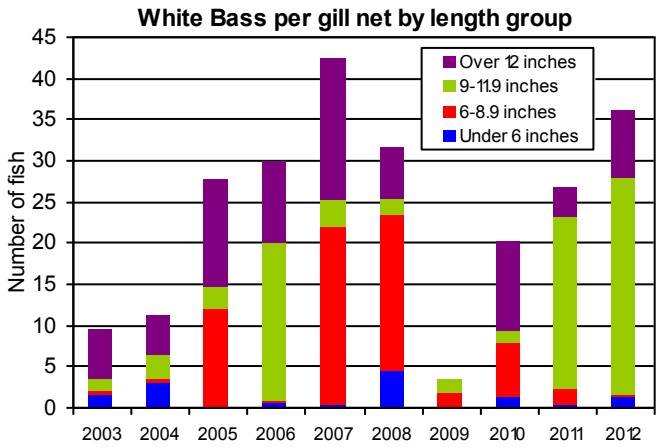
The last four year-classes are all well represented in the population, and all correspond to walleye fry stockings of about 14 million fish each year. Water levels have also been high, with good aquatic habitat conditions the last four years.



Overall, there has been good recent recruitment of young walleye and higher total numbers. Based on the 2012 survey, walleye anglers should expect a good fishing year in 2013, with a good distribution of sizes.

White Bass

White bass numbers increased again in 2012, improving each year from the unexpected drop observed in 2009. The low numbers in 2009 may have been explained by poor sampling efficiency caused by flooded vegetation and uneven fish distribution with high reservoir water levels.

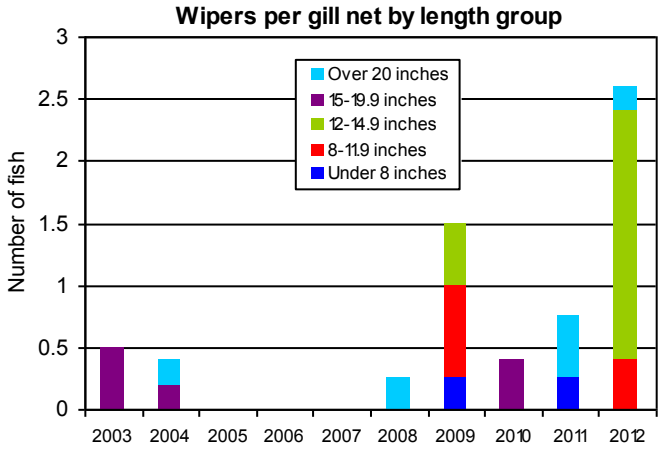


The most abundant white bass in the 2012 survey were 10-12 inches long, and mostly age 2 and 3. Similar to walleye, the 2010 year-class is especially strong. White bass ranged from age zero to four, with all ages well represented, indicating even recruitment over the last few years.

Netting surveys over the last three years have shown an excellent white bass population, and white bass fishing was excellent in 2012. Based on these surveys, there should be very good white bass fishing in the next few years.

Wipers

Although relatively low, wipers numbers are increasing at Harlan Reservoir. Most of the wipers sampled in 2012 came from the last stocking in 2011, and ranged from 12 to 14 inches long. The largest wiper sampled was 27.5 inches long and 13 years old.



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.

New Fishing Regulations for 2013

Several new fishing regulations went into effect on January 1, 2013 that may effect Harlan anglers:

- **White bass, striped bass, and striped bass hybrids**: The one-over daily bag restriction was lowered from 18 inches to 16 inches to provide more protection for wipers. The new regulation states the daily bag limit for white bass, striped bass, and their hybrids (combined) can contain only one fish 16 inches or longer - statewide.

- **Channel catfish**: The daily bag limit for channel catfish was increased to 10 on rivers, streams, and canals, but the daily bag limit of five was retained on reservoirs, lakes, and ponds. The possession limit for channel catfish was increased from 10 to 20.

- **Aquatic Invasive Species**: Any conveyance (boat) that has been on a waterbody must **drain all water** from their compartments, equipment, or containers before leaving the launch area. All aquatic vegetation from that waterbody must be removed before leaving the launch area.

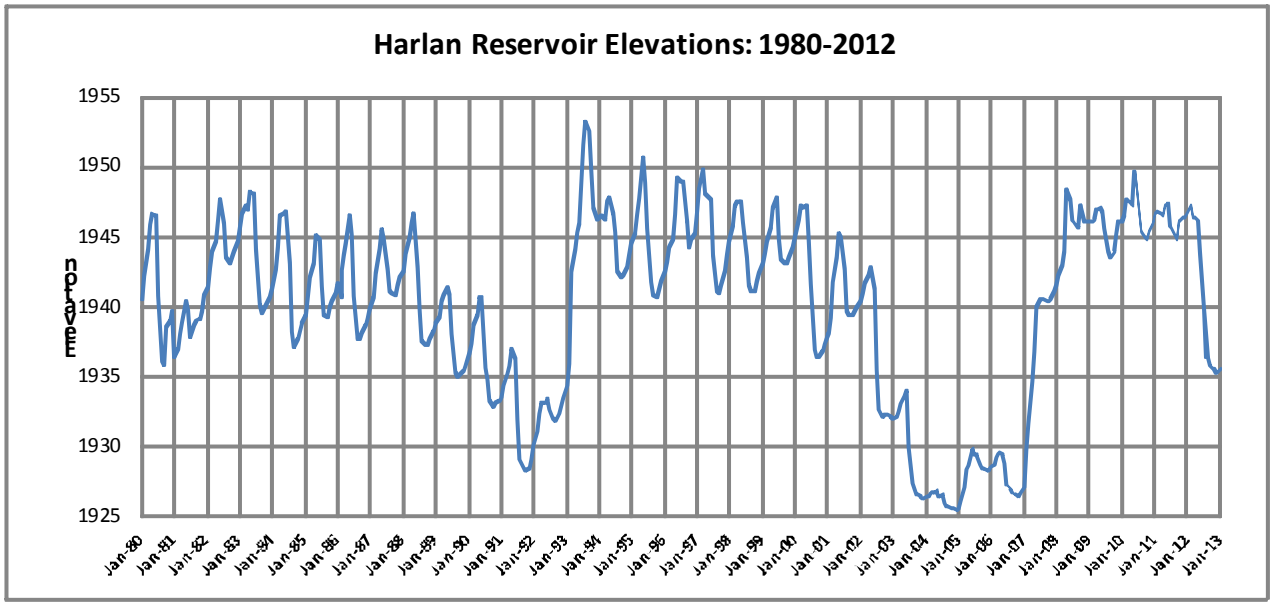
Please refer to a current copy of the Nebraska Fishing Guide for more information.

Additional Information about Harlan Reservoir

Water Levels

After several years of relatively high water conditions, Harlan Reservoir experienced a large drop in water levels in 2012. The reservoir dropped about 10 feet during 2012, and was much lower than the previous 4-5 years. The excellent aquatic habitat conditions associated with the high water have been reduced, and lower production of shoreline-oriented species is likely.

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, or drop further, recruitment of most fish species will be affected.



Fish Stocking

Walleye fry stockings have been about 14 million annually from 2009. 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.

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 future stockings.

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 70,000 wiper fingerlings in 2011, and these fish were represented in recent surveys.

To take advantage of shoreline habitat associated with higher lake levels, stocking of largemouth bass and northern pike were completed from 2008 to 2012. Future stocking of these species will be 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 2013.

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.

The planning phase of the Harlan project was completed in 2012, with the Flatwater Consulting Group providing final plans and specifications. A public meeting was held in Alma in April. Bids were opened in June, and the construction contract was granted to Frahm Construction. Field construction started in October, and by the end of 2012 most work at Gremlin Cove and the east side of Patterson Harbor was completed. The entire project is scheduled for completion early in 2013.

The following photos show construction progress in 2012.

Gremlin Cove:

Patterson Harbor:

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 2011-2012, 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 this season need to be aware of **new regulations** dealing with aquatic invasive species. Starting January 1, 2013 the following regulations went into 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://snr.unl.edu/invasives/**.
invasives/.

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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