2015 Lewis & Clark Reservoir Fall Fish Survey

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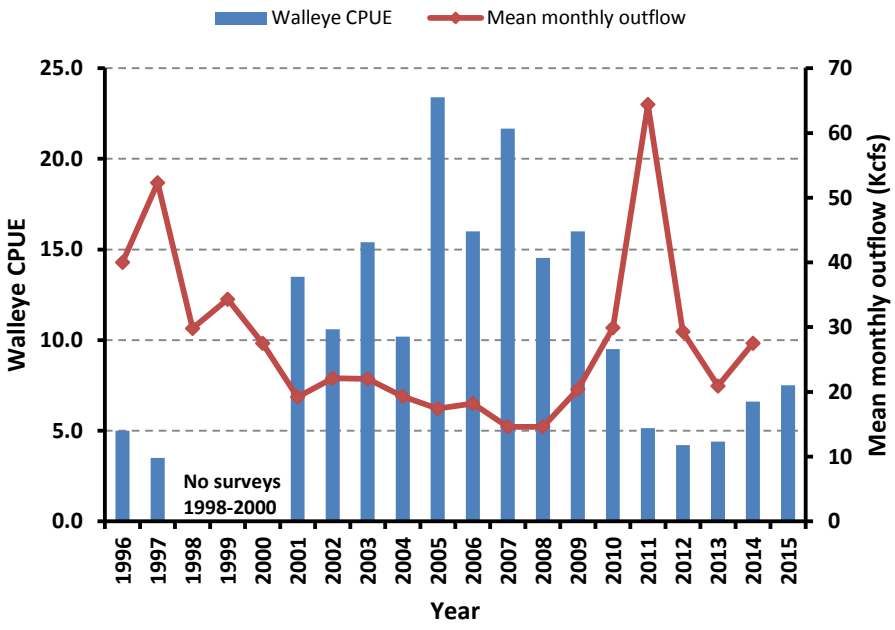
The following text and graphs summarize data from the fall fish survey on Lewis and Clark Reservoir which took place on September 28th and September 29th, 2015. Sampling consisted of 4 gill nets along with four hours of night-time electrofishing. Gill nets targeted walleye, sauger, white bass, and channel catfish and the electrofishing was used to monitor abundance of young-of-the-year walleye, sauger, and white bass as an index of 2015 production of those species. Both sampling methods are normally conducted on an annual basis.

The fishery in Lewis and Clark is still recovering from the 2011 flood. A lot of fish were flushed out of the reservoir in 2011 and it has been a slow process to recovery. Historical data has shown that high flows through the dam result in low catch rates of walleye in the reservoir as they are "flushed" through the system. The average outflow in 2013 dropped below 25,000 cfs for the first time in four years but was above that again in 2014 at 27,500 cfs. Final flow data for 2015 were not yet available.



2015 Fall Fishery Survey Results

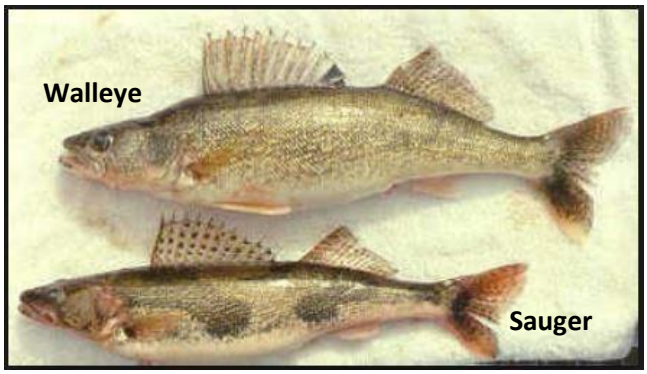
Walleye/Sauger

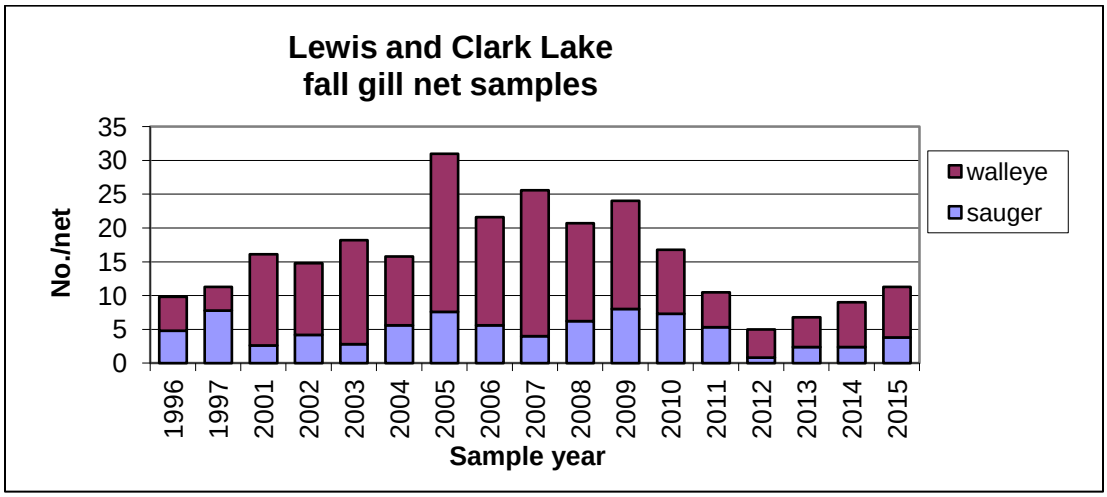
Walleye abundance has shown a slight increasing trend since the 2011 flood but was still quite low in 2015 at 7.5/net. The sampling indicated decent size structure for walleye with around 60% exceeding 15 inches. However, unlike most previous years, no walleye over 20 inches were observed in the survey. Sauger catch also continued an increasing trend but was still relatively low at 3.8/net. Additionally, only around 25% were harvestable-size fish. Considering the increasing trend for both species, angler catch rates for walleye and sauger should improve in Lewis & Clark Lake and provide good opportunity to harvest some fish if desired.

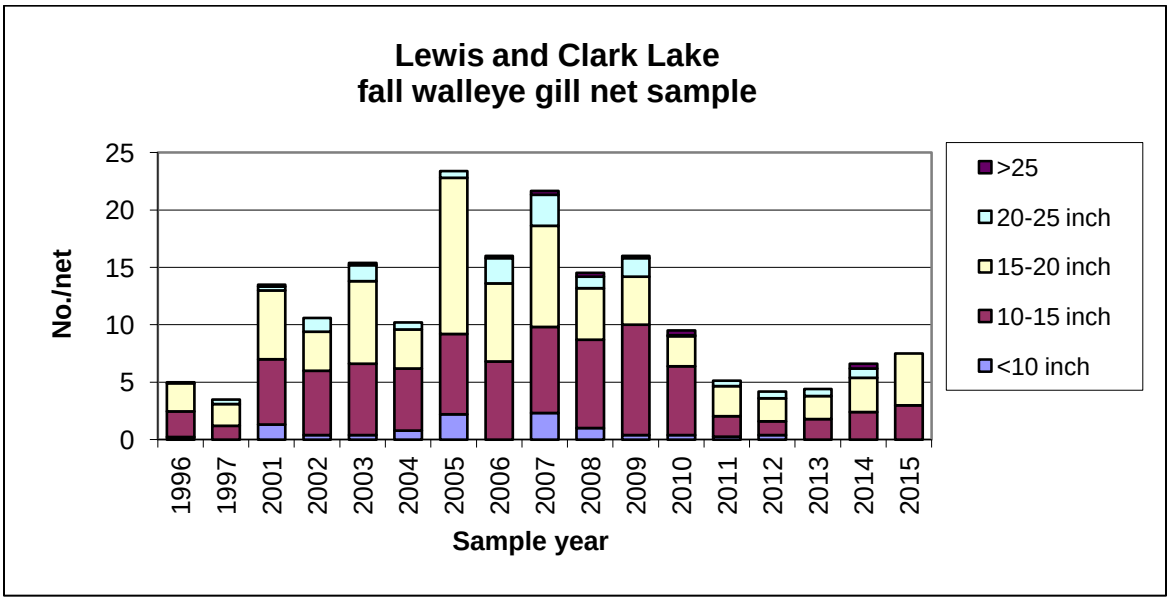
Young-of-the-year (YOY) electrofishing once again indicated low numbers of both walleye and sauger juveniles. Natural reproduction and recruitment have historically provided and maintained the game fish populations in Lewis & Clark. However, in response to low net catches and low angler catch rates, walleye were stocked in the reservoir in 2014 and 2015 to see if the recovery of the walleye fishery could be accelerated following the 2011 flood. In 2014 14.1 million three-day-old fry were stocked in the upper end of Lewis & Clark Lake with another 12.8 million stocked in 2015. The stocked fish were chemically marked to evaluate their contribution to year class strength. Otoliths, or "ear bones", were collected and analyzed from 200 YOY walleye in 2014 and 130 in 2015 to look for marked fish. The otoliths from 2014 have been analyzed while those from 2015 will be looked at in January 2016. An alternate, but less quantitative, evaluation method is to compare electrofishing catch rates among years to determine if more YOY walleye are present in the lake following stocking. At this time, neither evaluation technique points to any contribution by the stocked walleye to year class strength. In summary, natural reproduction and recruitment are sufficient to sustain the walleye population in Lewis and Clark Lake when conditions are favorable but supplemental stocking has not provided more walleye in the reservoir when conditions appear to limit natural recruitment. Habitat alterations resulting from the 2011 flood that occurred in both the river above Lewis and Clark and in the reservoir itself could be limiting reproduction and recruitment of walleye and sauger in the system. Anecdotally, channel degradation that occurred upstream of the reservoir altered the morphology of the river substantially, including areas where sauger spawning has been documented, possibly to the point that their spawning success is limited compared to pre-2011. Additionally, nursery areas utilized by young walleye and sauger could have been compromised in the river and/or reservoir. All said the river and upper portions of the reservoir may still be in a state of "flux" while the system is working its way back to equilibrium following the flood, and the process could be affecting sportfish recruitment in the system. Furthermore, as mentioned earlier, reduced annual flows through Gavins Point Dam are instrumental in boosting or maintaining walleye numbers in the reservoir, especially when they occur in consecutive years as was the case from 2004 to 2008. Those repeated years of relatively low flows corresponded to the best period of walleye fishing opportunity (2005 to 2009, see graph below) in the recent history of the lake. The trend of increasing walleye

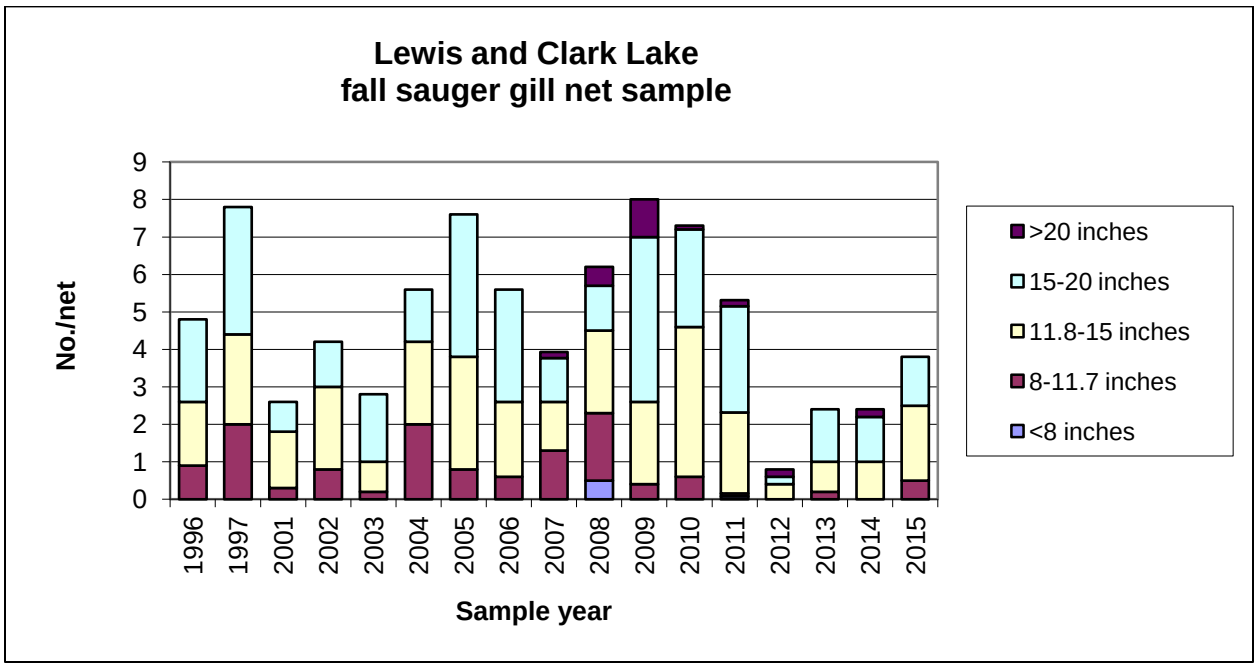
numbers is encouraging and likely a function of moderate to low flow years through the reservoir. Provided similar flows continue in subsequent years, we could start to see some numbers like those of the mid to late 2000's.

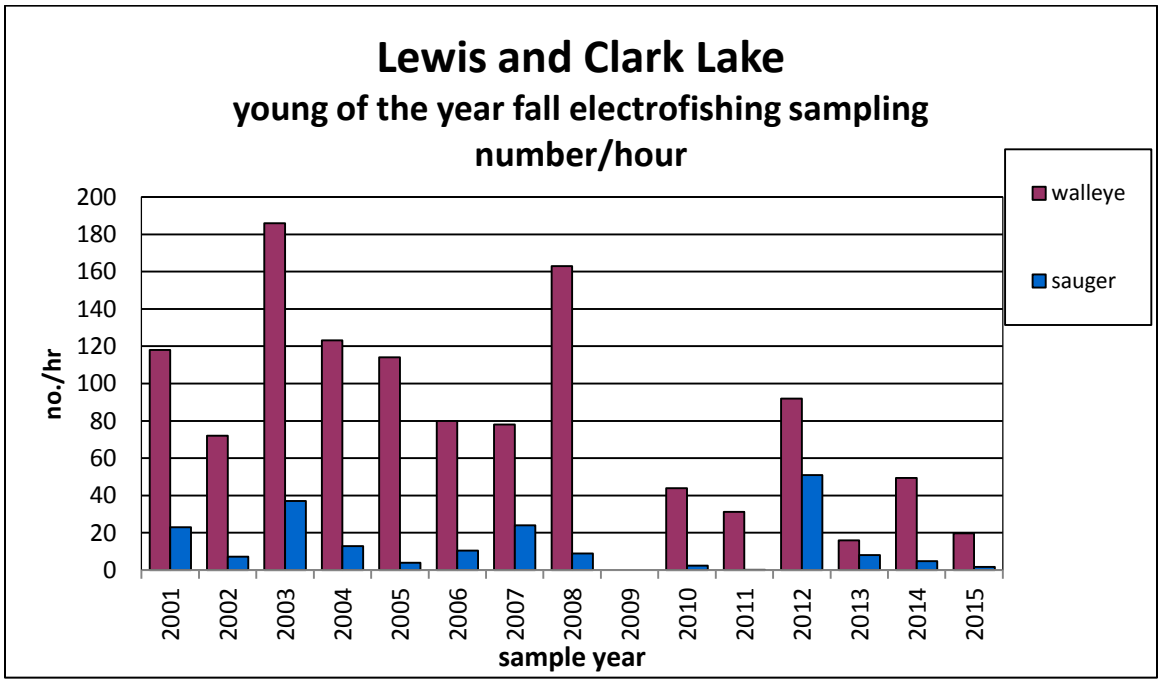
Sauger and walleye are managed under one regulation that includes a 15-inch minimum length limit and an aggregate (walleye and sauger combined) daily bag limit of 4 fish.







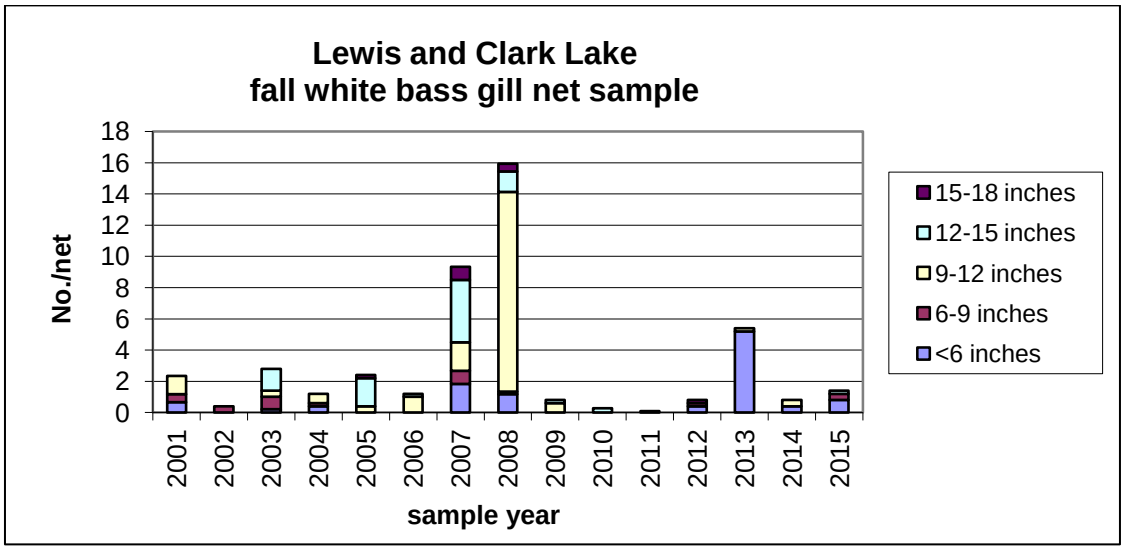

Lewis and Clark Lake
fall sauger gill net sample
No./net
0
1
2
3
4
5
6
7
8
9
1996
1997
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Sample year
>20 inches
15-20 inches
11.8-15 inches
8-11.7 inches
<8 inches

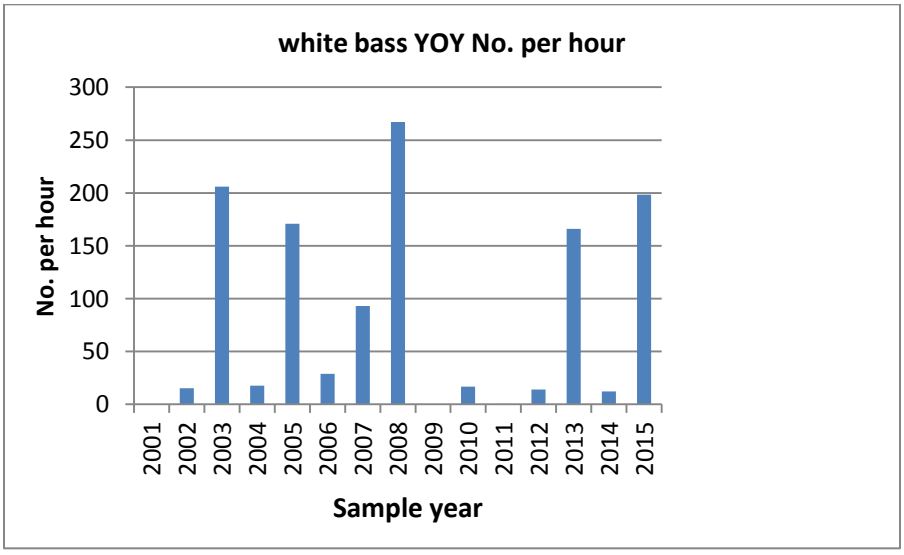

Lewis and Clark Lake
young of the year fall electrofishing sampling
number/hour
no./hr
0
20
40
60
80
100
120
140
160
180
200
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
sample year
walleye
sauger

White bass

Low catch rates are typical for white bass in Lewis & Clark but it isn't necessarily a good indicator of their population abundance. They are an actively schooling species which can make them inherently difficult to sample consistently in a reservoir, especially one this large. That is, they can be very "hit and miss" when it comes to being captured in the nets. It is a little surprising that a few more 10-12 inch fish weren't observed this year considering the large year class that was produced in 2013. Young of the year white bass, however, were quite abundant as indicated by a catch rate of approximately 200/hour of night-time electrofishing. White bass fishing could be outstanding in 2017 if those fish stay in the reservoir. White bass grow quickly in Lewis & Clark, approaching 10 inches by age 2 and 12 to 13 inches by age 3.

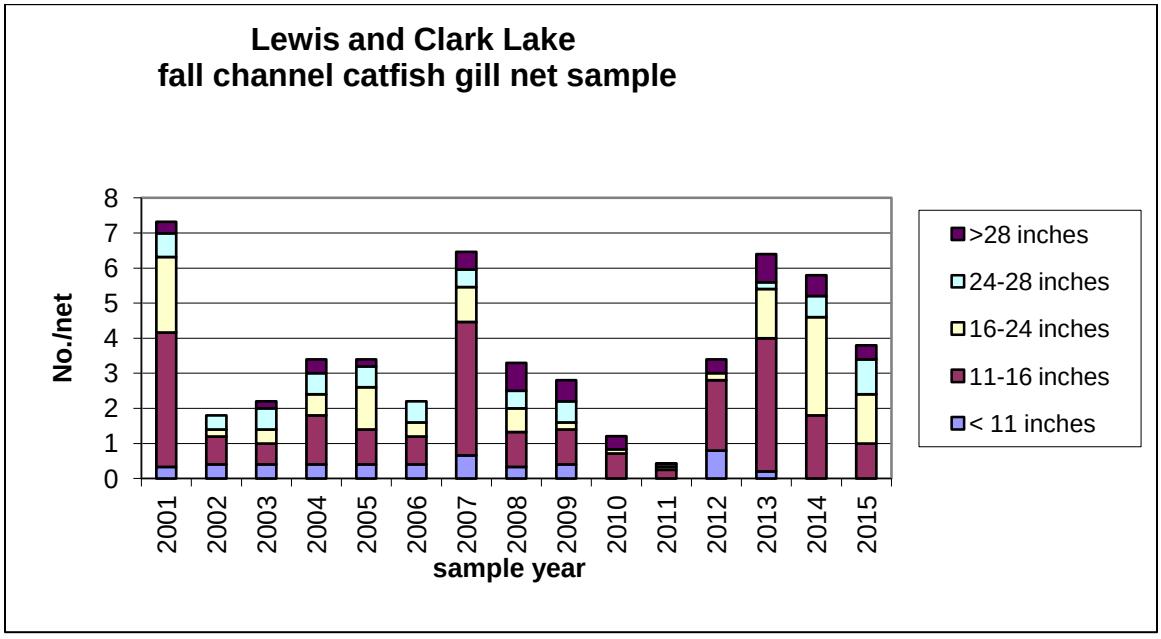
White bass harvest is regulated with a 15-fish daily bag limit.





Channel catfish

The catch rate of channel catfish remained relatively low but sampling revealed that there are quality fish in the population. The majority of fish exceeded 16 inches which will provide decent opportunity to harvest catfish in the reservoir but also offer the opportunity to catch a really nice fish around 30 inches. Channel catfish typically reach 16 inches in 4 to 5 years in Lewis & Clark and they are regulated with a 10-fish daily bag limit in the reservoir and Missouri River.



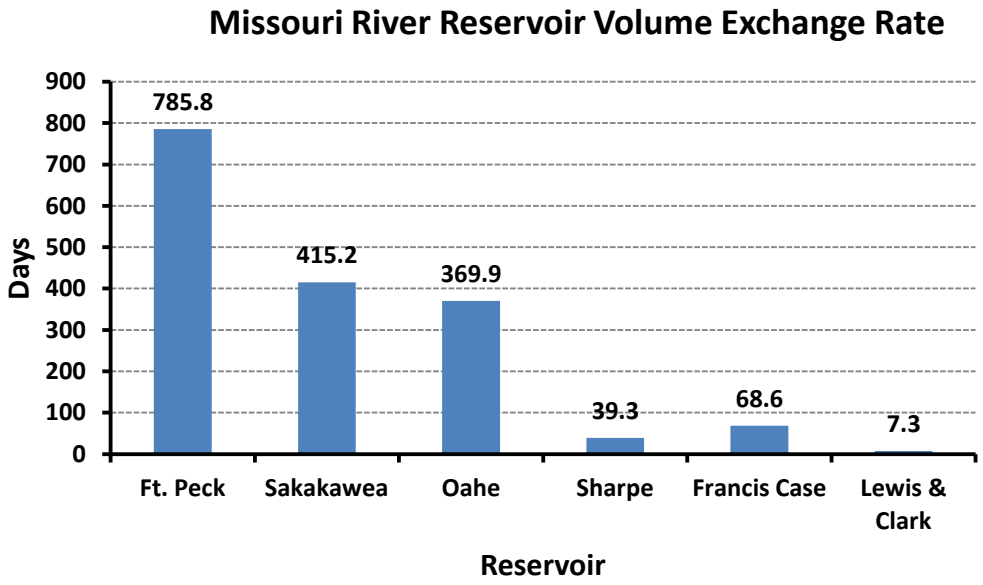
Other species

The lake is also a good destination for those seeking **black bass** (**largemouth** and **smallmouth bass**). Numbers appear to be down compared to pre-2011 but bass anglers can still get out and have a decent day. Rocky areas, bays, boat basins, and the marsh area on the west end will provide some of the better opportunities. **Flathead catfish** are picked up on occasion as are **panfish**. **Bluegill** can be caught along the rocks or in vegetated bays and anglers do pick up some **crappie** along the rocks and in the boat basins.

<u>Additional notes</u>

Anglers are again reminded that regulations require that **any boat that has been on a waterbody must drain all water from all compartments, equipment, or containers (*including bait buckets*) before leaving the launch area and that all aquatic vegetation must be removed from the boat and trailer before leaving the launch area**. These regulations are meant to control the spread of aquatic invasive species such as zebra mussels, Eurasian watermilfoil, and curly-leaf pondweed to name a few. Not only are these practices required by regulation, they

have become even more important concerning Lewis and Clark and the Missouri River following the 2015 expansion of zebra mussels in the reservoir after finding only a single adult in 2014. Also, nonresident boaters launching in Nebraska waters will be required to purchase the Aquatic Invasive Species Stamp and affix it to their watercraft. The stamp provides funding for dealing with invasive species that are already present in addition to education and prevention activities that are meant to limit their introduction and spread. Resident boaters also contribute to this fund through a surcharge on their boat registration. Additional information about these requirements and preventing the spread of aquatic invasive species can be found in the 2016 Fishing Guide, the 2016 Boating Guide, and at the University of Nebraska's Invasive Species Project website: [http://www.neinvasives.com.](http://www.neinvasives.com)



The graph above is included to show how Lewis & Clark differs greatly from other reservoirs on the Missouri River system. It depicts the amount of time it takes, based on the volume of the reservoir and the outflow through the related dam, to replace the entire volume of the reservoir. Compared to the other reservoirs, Lewis & Clark is basically a "wide spot in the river" as it only takes about a week, on average, to replace its entire volume with "new" water. In 2011, when outflow peaked around 160,000 cfs passing through the dam, the exchange rate would have been just over 1 day (approximately 27 hours). The volume exchange rate, or turnover time as it is called, is instrumental in keeping fish in a reservoir. High exchange rates result in fish movement out of the reservoir. This is true for fish of all sizes, young-of-the-year through adult.