2017 Lewis and Clark Lake Fish Sampling Summary

Nebraska Game and Parks Commission
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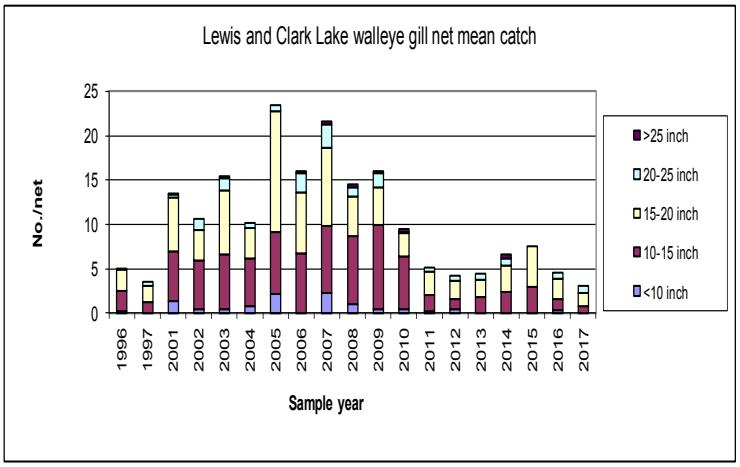
The following text and graphs summarize data from the fall fish survey on Lewis and Clark Reservoir. Night-time electrofishing for young-of-the-year (YOY) and gill netting was conducted on October 3-4 2017. Sampling consisted of 6 gill nets along with approximately 2.0 hours of night-time electrofishing. 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 2017 production of those species. Both sampling methods are normally conducted on an annual basis.

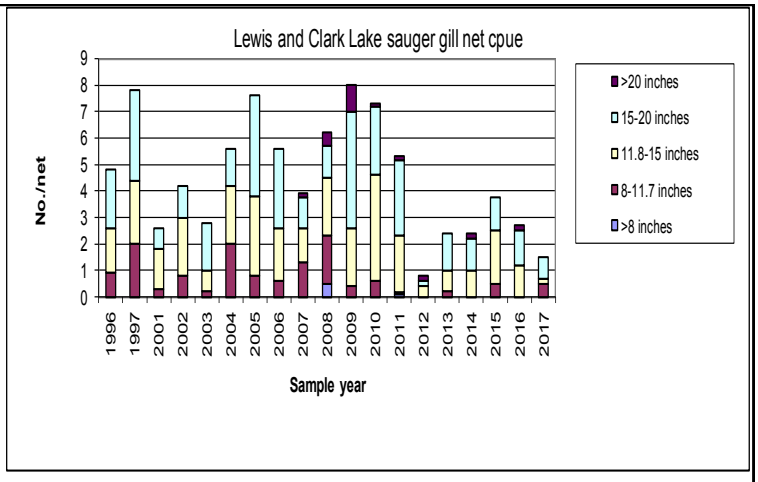
Historical data has shown that periods of low flows through the dam have corresponded to higher abundance of walleye in the reservoir. Gavins Point Dam releases in 2017 were towards the higher end with a mean average outflow of 26,500 cubic feet per second. While some sport fish species such as walleye and sauger continue to see low relative abundance, species such as white bass and channel catfish are doing very well. Two of the previous three years have had very high numbers of Age 0 white bass and and this recruitment was noted by much better white bass fishing success by anglers in both the lake and tailwater areas. Walleye and sauger angling success was spotty in 2017 but those anglers who know the lake and fish the "chutes" area had good success.

Walleye



Walleye numbers in our sample decreased for the second straight year. This was disappointing since we anticipated an increase in age 1 walleye in the sample following the stocking success in 2016 that led to a strong year class. Walleye numbers remain depressed since the 2011 flood. The good news for anglers is that about 75% of the fish sampled were over the 15 inch minimum length limit. Research and discussion continues into the cause of the walleye decline. Much of it is related to flow and releases from Gavins Point Dam and suspected habitat changes following the 2011 flood. Knowledgeable anglers have had good angling success in the "delta" located in the Santee and Springfield areas. Seasonal movement patterns concentrate both walleye and sauger that can provide good angling opportunity. Sporadic good fishing also occurs below Gavins Point Dam and areas downstream. These areas are basically "stocked" from Lewis and Clark Lake due to movement of fish out of the reservoir. Despite the slight drop of walleye numbers in our survey, angling should be comparable to the past few years. Growth rates appear adequate with fish on average reaching 15 inches in three growing seasons, however, some fish from the 2016 year class were still sub -12 inch at the time of our sampling.

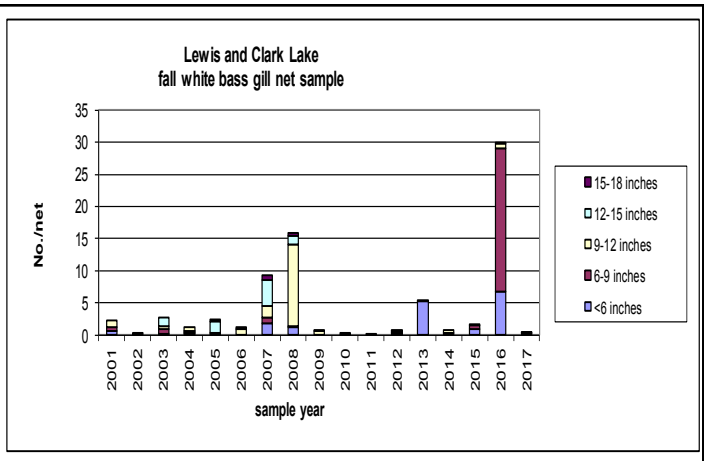
Sauger



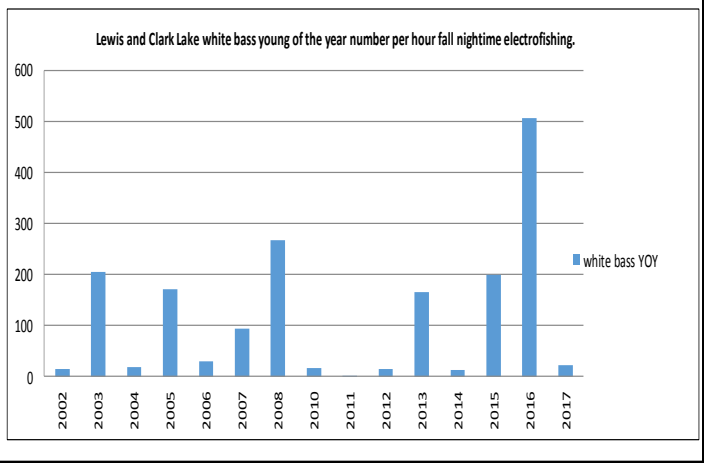
Sauger numbers also declined in the 2017 sample. This follows a six year trend of low numbers since 2012. The mean net catch in the 6 year period from 2012 to 2017 was 2.25 compared to 6 for the period 2006 to 2011. Like walleye, the good news about sauger for anglers is that about half the numbers collected were over the 15 inch minimum length limit. Growth rates for sauger are good and slightly better than walleye through age 2. Sauger are reaching 15 inches after three growing seasons. Best angling opportunity for sauger includes the upper end of Lewis and Clark Lake and the "chutes" area of the delta from Santee to Springfield S.D. and the riverine areas.

White Bass

The white bass population is on the increase following the 2011 flood. Good year classes were produced 3 of the last 6 years with the 2016 year class the highest seen during our young-of-the-year sampling. These fish also showed up in the 2016 gill net sample and show much promise for the angler the next few years. It was disappointing we did not see many white bass in the 2017 gill net sample but white bass are a schooling fish and collecting them in our sampling gear can be hit or miss. Anecdotal information from anglers indicated much improved white bass fishing success in 2017. Anglers were catching fish in the 15-18 inch range with good body condition. White bass in Lewis and Clark Lake exhibit excellent growth rates and body condition.

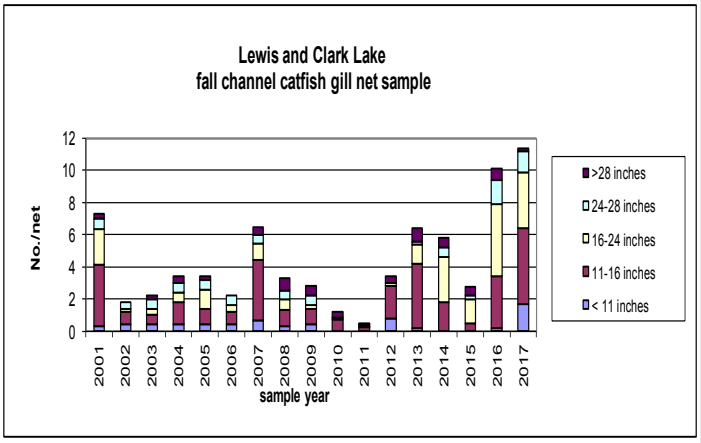


In addition, the good white bass production seen in the lake in 2015 and 2016 resulted in higher numbers of small white bass in the Gavins Point tailwaters as the fish produced in the lake pass through the dam into the river below. Anglers should find improved white bass fishing in the Gavins Point tailwaters in 2018.



Channel Catfish

Channel catfish numbers in Lewis and Clark Lake have been on the increase the past few years and are a bright spot in the reservoir fishery. Not only has the number of catfish been increasing in our sample but the size structure is balanced and contains good numbers of angler preferred catfish. Angling opportunity for catfish should be good in 2018. Often overlooked by anglers, catfish can be fun to catch and possess good fighting ability. Fishing for channel catfish near the mouth of tributaries following a runoff event can provide good action.

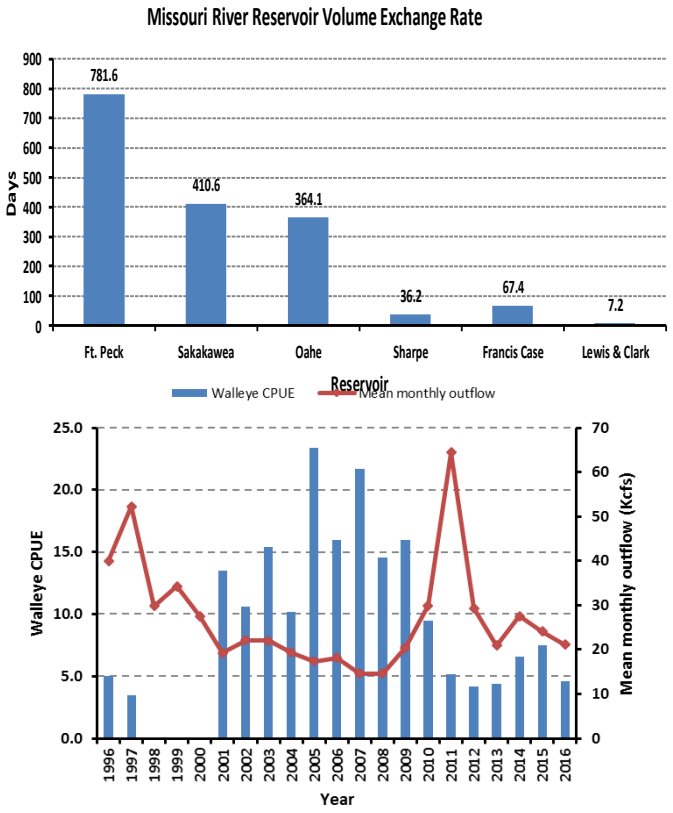


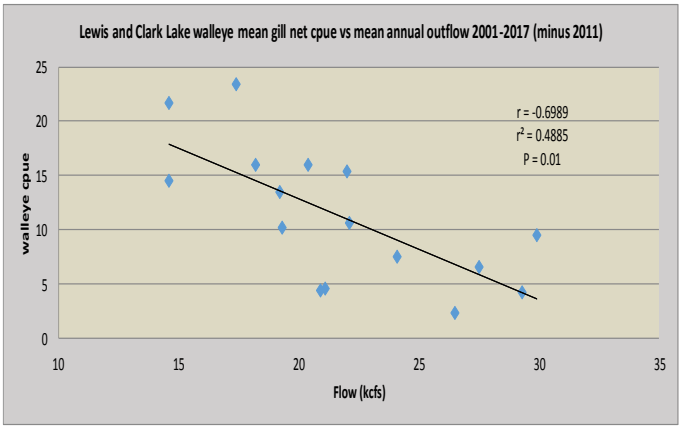
Other Species and Information

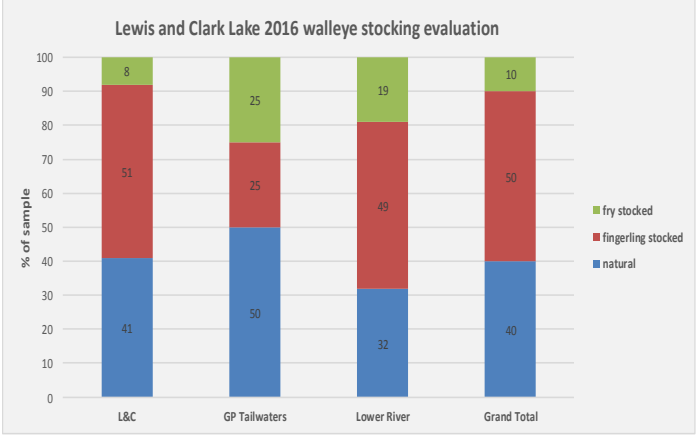
Although no data is presented in this summary report, other species available for anglers to catch in Lewis and Clark include abundant smallmouth bass along with some crappie, bluegill and northern pike. Smallmouth bass are found throughout the lake and river system, usually associated with rock structure, both natural and man-made. Crappie are typically caught in bays around the lake, in the delta backwaters and around docks in the marinas. Northern pike can provide an occasional catch anywhere in the system.

Any discussion of the fishery in Lewis and Clark Lake quickly turns to flows through Gavins Point Dam and turnover time in the reservoir. Fish of all species are highly vulnerable to escapement or flushing through the dam into the tailwaters. This is a one way trip since fish cannot get back upstream to the reservoir. The complete barrier is a very good thing to contain the ever growing Asian Carp population found below Gavins Point Dam and keep them from getting into the lake above. However, the barrier can lead to depressed sport fish populations in the reservoir if flows and escapement are too high. Consider the adjacent charts. The exchange rate, also known as turnover time, for Lewis and Clark Lake is very short especially when compared to the other Missouri River reservoirs. This means a high flow-through at the dam that can lead to high fish escapement. This phenomenon is depicted in the relationship between mean walleye gill net catch-per-unit-effort and mean annual outflow from Gavins Point Dam (mean annual outflow in cubic-feet-per-second). The analysis indicates a significant negative relationship. In other words, the higher the outflow through the dam the lower the walleye numbers in our reservoir samples. The less the outflow the higher the walleye numbers. This can also be applied to other species such as white bass. Some species are more prone to entrainment than others with walleye being a top candidate species for this downstream movement. This relationship, while not accounting for all variability in walleye numbers, is a major part of the equation.

Another example of walleye movement out of the reservoir and through the dam can be found in the evaluation of the 2016 walleye stocking utilizing marked fish. The stocked walleye fry and fingerling in 2016 all received a specific oxytetracycline chemical mark that allows us to evaluate not only contribution of stocked fish to the population but movement of stocked fish. (Note the adjacent chart.) Walleye stocked into Lewis and Clark Lake in 2016 made up 50% or more of the young-of-the-year walleye collected below Gavins Point Dam including all the way down to Ponca which is as far downstream as collections were made. These fish obviously moved through Gavins Point Dam. These stocked fish are not "lost" but will contribute to the fishery in the river below Gavins Point Dam. Rather, this just illustrates the difficulty in keeping fish in the reservoir proper in an open system.







Zebra Mussels and Invasive Species

Anglers and recreational boaters should continue awareness for zebra mussels while using Lewis and Clark Lake and the Missouri River. Zebra mussels were found in Lewis and Clark Lake in 2014 and their numbers have exploded since and are increasing exponentially. Please clean, drain, and dry your water craft prior to leaving Lewis and Clark Lake and never arrive at a lake with water in your boat or live well from anything other than a domestic source. Invasive mussels have also been documented in several neighboring states including Iowa, Kansas, Missouri, and South Dakota.

Invasive mussels will attach to almost any surface and have detrimental impacts on industry (power plants, water intakes, irrigation, etc), native fish and mussels, and recreational users (fouling boat motors, impacting beaches, etc). Invasive mussels cause an estimated $5 billion per year in economic impacts in the United States for monitoring and control efforts. Inadvertent transfer by humans is the major source of new infestation for zebra mussels; primarily by boats, boat trailers, and fishing gear. Boaters and anglers are reminded that it is important to **clean, drain and dry** their equipment and boats before moving to different bodies of water. Anglers and boaters are encouraged to educate themselves on these and other 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://www.neinvasives.com.

Regulations that took effect in 2013 mandate that all vessels and conveyance be drained of water prior to entering or leaving a lake to prevent the spread of invasive species. This means all livewells, baitwells, and boat hulls shall be drained and free of water except for water from a domestic source for bait fish. Additionally, all aquatic vegetation must be removed from boats and trailers prior to leaving a lake. Boats are subject to inspection by authorized personnel. Regulations will be strictly enforced. Remember to bring ice on your fishing trip to transport your fish home. Also keep in mind South Dakota law requires plugs be pulled on all watercraft leaving the lake and while in transport. Nebraska is pursuing similar regulations in 2018.

All non-resident boats (those not registered in Nebraska) must have a non-resident AIS sticker affixed to the hull prior to launching at Nebraska boat ramps.

2018 Activities and Stocking

Fish sampling will continue for a variety of species with gill nets and electrofishing gear. Stocking in 2018 will consist of 500,000 fingerling walleye that will be oxytetracycline marked to evaluate contribution to year class strength and fish movement. This is a combined effort between the Nebraska Game and Parks and South Dakota Game, Fish and Parks.

Boat inspections and zebra mussel sampling will continue on Lewis and Clark Lake and the Missouri River in 2018. We ask for your cooperation and patience in the boat inspection effort and ask for your assistance in stopping the spread of zebra mussels and other invasives species such as Asian carp, Eurasian watermilfoil, rusty crayfish and red swamp crayfish. All these invasives are found in the Missouri River below Gavins Point Dam.

For more information on fishing rules and regulations visit the Nebraska Game and Parks website at OutdoorNebraska.org.

For more information on the fisheries at Calamus Reservoir contact:

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