Calamus Reservoir 2021 Fall Fish Survey Summary

Nebraska Game and Parks Commission

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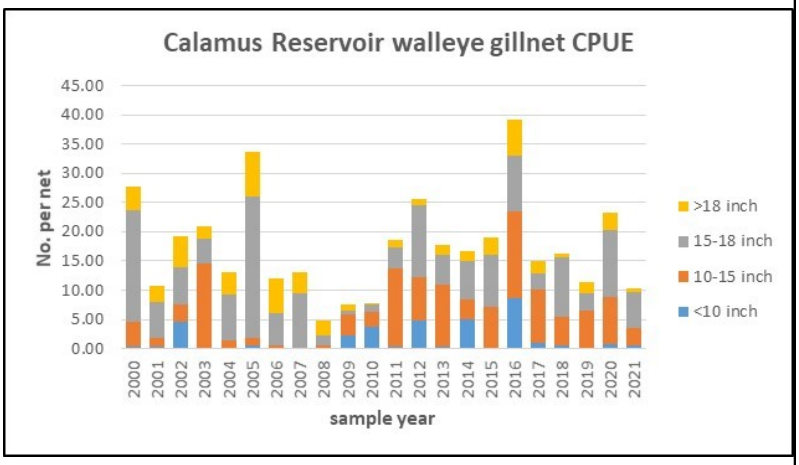
2021 Calamus Fish Management Summary

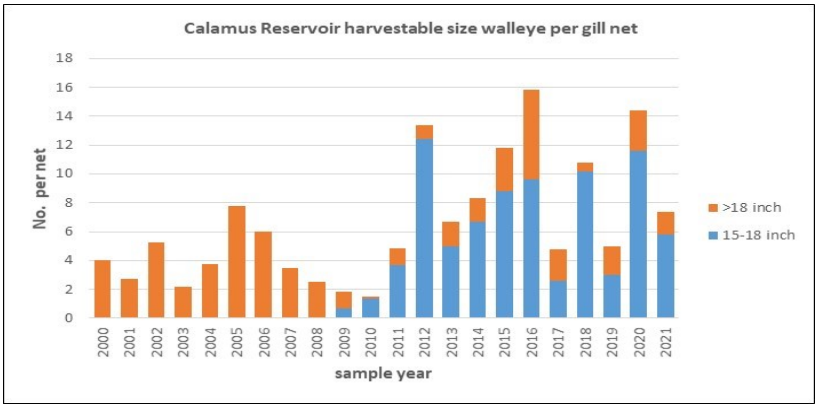
The following text and graphs are summaries from the 2021 fall gill net sampling conducted during October. Gillnets are used to sample fish species which primarily live in open water environments such as large reservoirs. Gill net sampling effort in 2021 was 5 nets located in the mid to lower reaches of the lake on October 4-5. Electrofishing for young-of-the-year fish was conducted on September 27. The same general areas of the lake are utilized for sampling locations each year for standardization. No angler creel survey was conducted in 2021.

Walleye, channel catfish, and wiper populations are maintained through annual fish stocking. Muskellunge are stocked in low numbers biannually to maintain their population and angling opportunity. In 2021, both walleye fry and fingerling were stocked as some COVID restrictions on walleye spawn collections were lifted. In all 4.75 million fry and 270,707 fingerling walleye were stocked along with 45,000 fingerling wipers; and 25,075 10-inch channel catfish. Fish stocking in 2022 will include walleye, wipers, channel catfish and muskie. Fishing regulations include **a daily bag limit of 4 walleye, however, anglers may have no more than 2 fish between 15 and 18 inches and no more than 2 fish over 18 inches. Keep in mind only one fish in the daily bag may be longer than 22 inches in length. Also keep in mind that only 1 channel catfish over 30 inches is allowed in the daily bag limit of 5 channel catfish. This regulation is designed to protect**

Walleye

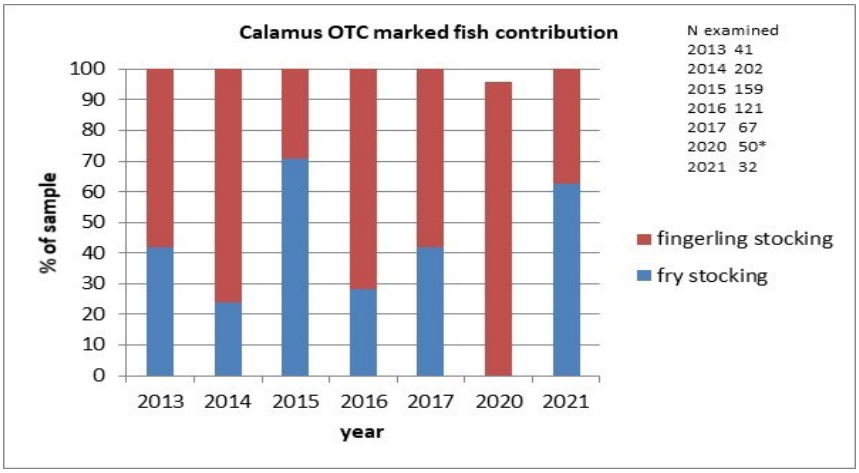


The walleye fall gill net index decreased over that seen the past 10 years. The 10.4 fish per net is well below the target gill net catch rate of 15 to 20 per net. This marks the second time that the objective catch rate has been missed since the fry/fingerling stocking and current harvest regulation have been in effect. This is likely due to heavy fishing pressure the past year or two. Harvest on walleye has been high. Harvestable sized fish in the 15 to 18 inch size range still make up a good percentage of the sample while the fish 18 inches and longer had decreased somewhat in the 2021 sample. Since the inception of the concurrent fry and fingerling annual stocking and the change in length regulation allowing fish harvest in the 15 to 18 inch range, more walleye are currently available for harvest now than under the 18 inch minimum length limit. The chart below shows the catch rates of "keeper" walleye in annual gill net sampling. The mean number of harvestable walleye per net catch from 2000-2008 (18 inch minimum years) was 4.1. The mean net catch of harvestable sized walleye from 2011-2021 is 9.4. Five year classes of fish were represented in the survey with age-1 to age-3 fish the most abundant. Walleye are reaching 15 inches in about 3 growing seasons with fish reaching 18 inches in 4+ growing seasons. The dual stocking of walleye fry and fingerling will continue in 2022 to maintain high walleye recruitment levels and prevent a missing year class. Anglers should find good fishing again in 2022 with most harvestable fish subject to the 2 fish daily bag limit between 15 and 18 inches. However, anglers should find decent numbers of fish over 18 inches.



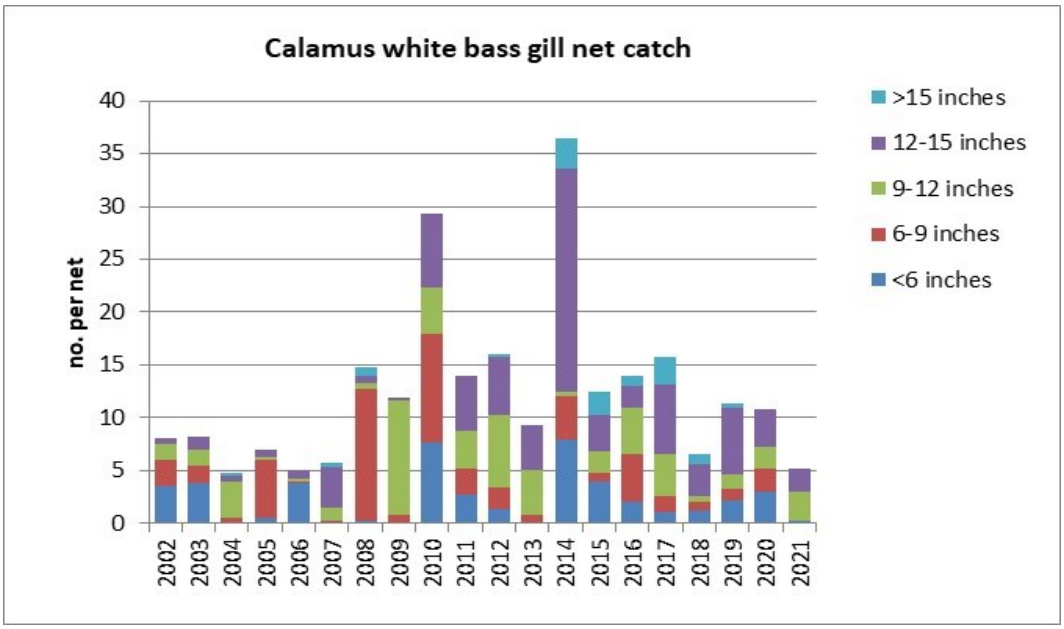
2021 Young-of-the-year Walleye Sampling

Age-0 walleye were collected by nighttime electrofishing in September. Poor water quality due to an intense blue-green algal bloom hampered the YOY sampling in 2021. While evaluation of walleye stocking strategies remain ongoing, stocking of only fingerling fish in 2020 gave us information concerning any natural reproduction of walleye. Fifty of the collected age 0 walleye in 2020 were examined for a chemical mark and 48 out of 50 (96%) were marked. This means 96% of the fish examined were stocked walleye. It also means perhaps some limited natural reproduction for walleye at Calamus Reservoir. However, not nearly enough to maintain the needed walleye population. In 2021, as in the years 2013 through 2017, the fingerling walleye received a chemical mark to evaluate which stocking strategy is contributing more fish—fry or fingerling stocking. At this point in the stocking evaluation, both stocking strategies contribute with one a little better than the other some years. It appears both stockings should be continued to ensure adequate walleye recruitment.



White Bass

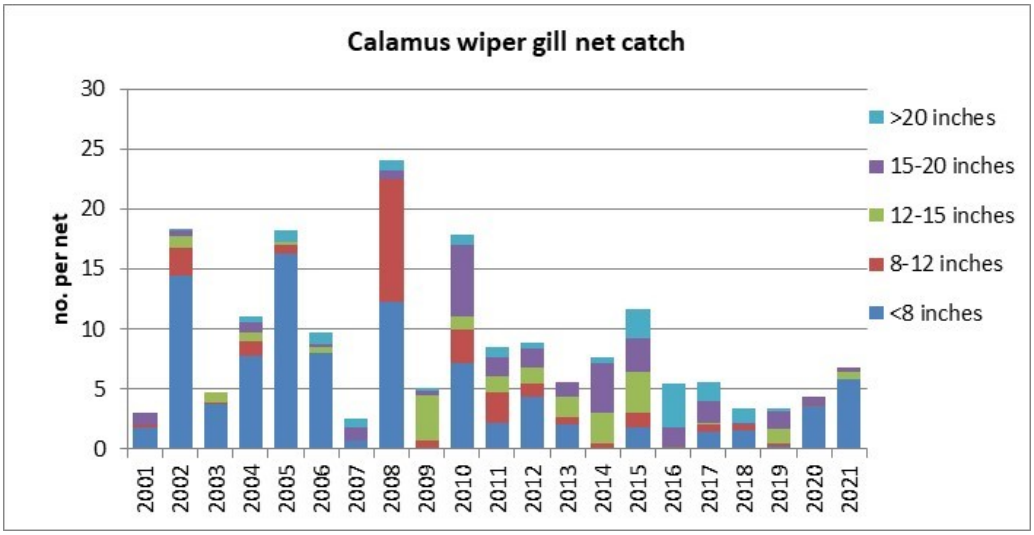
Net catch for white bass of 5.2 per net in 2021 was a decrease of 50% but similar to that seen in 2018 and is below the previous five year average of 11.7. Fishing pressure and harvest of white bass was high in 2021 and that may have reduced population numbers. The size structure of white bass is skewed toward larger fish and reproduction appears down in 2021. Fish are present up to 15 inches offering anglers good opportunity. A healthy, abundant white bass population is present in Calamus Reservoir. White bass body condition is excellent, indicating good prey availability. White bass fishing success in 2022 should be slightly below that seen in the past few years. **Remember only 1 white bass/wiper greater than 16 inches is allowed in the daily bag limit.**



Wipers

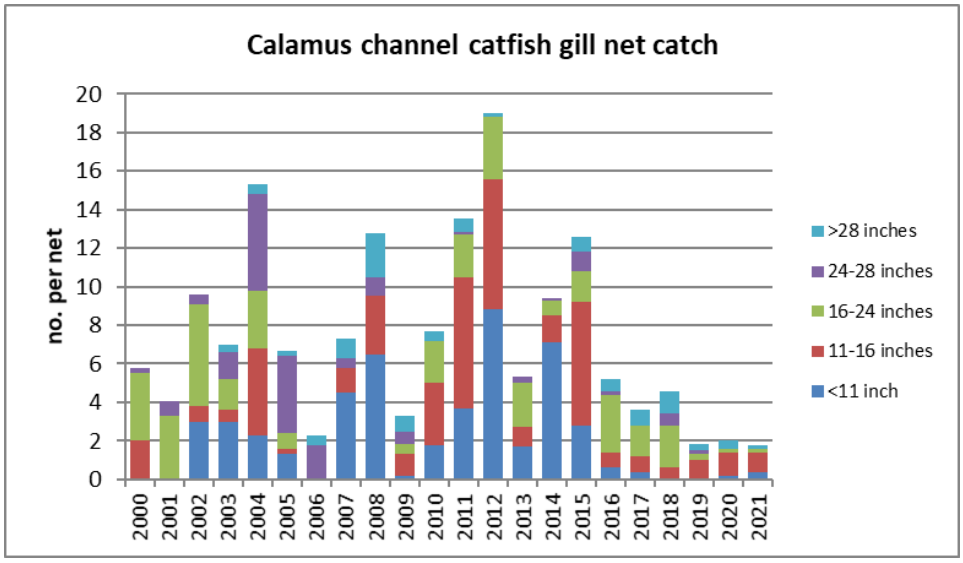
The wiper catch per net in the 2021 sample improved slightly over the past few years thanks to the contribution of smaller fish. Few larger fish were collected again in 2021 and that trend is concerning. There has been some natural mortality of wipers just after ice-out in recent years which may still be affecting numbers of larger wipers. In addition, high fishing pressure for white bass and wipers could have led to a high harvest of 9-13 inch wipers as they are quite vulnerable to harvest at that size range and are not protected until they reach the 16-inch size. As always, wipers are a schooling fish and they can be a "hit or miss" sample. Angler success on wipers in 2022 should be similar to that seen in 2021. Wipers exhibit much faster growth than white bass and current data indicated reaching 17—18 inches in three to four growing seasons and over 20 inches in four to five growing seasons. Like white bass, prey availability in the form of young gizzard shad influences year class survival and growth rates. The wiper stocking request in 2022 is once again for 25,000 fingerling (2 inch) fish.

Only 1 wiper/white bass greater than 16 inches is allowed in the daily bag.



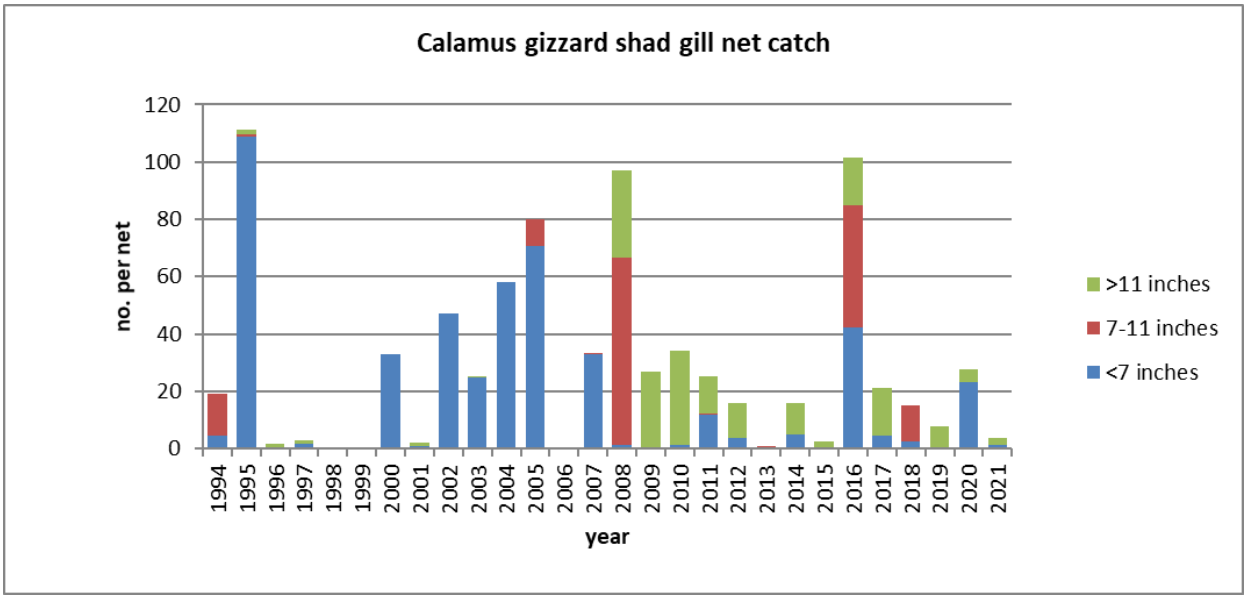
Channel Catfish

Channel catfish catch per net in the 2021 survey is very similar to the past 2 years. While some fish over 28 inches are seen in the survey, most fish collected were less than 16 inches. To improve catfish recruitment, we have returned to stocking 10 inch size catfish and that is likely contributing to the catch of smaller fish in 2021. As you can see from the graph, catfish sample catch numbers tend to vary widely at times. Trophy fish are present in Calamus Reservoir and catfishing can be quite good certain times of the year. Calamus has become known as a catfish angling destination and the site of catfish tournaments. Our gill net sampling technique may not be conducive for good catfish samples looking into population levels and trends. Anecdotal information from anglers indicates that channel catfish are likely found in deeper water during the time of our gill net sampling. Changes in sampling effort will be needed to properly sample the channel catfish population. We look for catfish angling opportunity in 2022 to be similar as that seen in the past few years. A regulation change occurred for Calamus Reservoir beginning in 2020. **A "1 fish over 30 inches in the daily bag limit" regulation is now in place for channel catfish.**



Gizzard Shad

Gizzard shad are the primary prey for managed sport fish in Calamus Reservoir and their size distribution is critical for proper growth, recruitment and maintenance of desirable sport fish species. It is desirable to have high numbers of young-of-the-year shad to provide food for the sport fish such as walleye and white bass, but lower adult numbers so as not to compete with sport fish for space and food. A large die-off of adult shad occurred following ice out in the spring of 2020. Subsequent electrofishing sampling in April of 2021 indicated adequate numbers of adult shad were present and would be adequate for spawning. Anecdotal information in 2021 indicated good production of small shad. Moderate winterkill of adult shad is a good thing for fish management purposes because the surviving adults produce a lot of young to serve as food for sport fish. When adult shad numbers are too high much of the shad biomass is tied up in those large fish and reproductive success is reduced, resulting in reduced numbers of appropriate-sized prey to support the fish populations that rely on them. The low catch of shad in the 2021 gill net sampling was disappointing since it appeared shad production was good and adults were seen around the lake in the spring and summer months. Sampling will be conducted in the spring of 2022 to insure adult shad numbers are adequate for reproductive success.



Other 2020 Activities

Fisheries Division conducted other activities at Calamus Reservoir in 2021. These included activities that affected boaters and anglers at the Reservoir and boat ramps. The Game and Parks Commission had an Invasive Species Technician conducting boat inspections and interviews for all boaters and lake users, primarily at boat ramps. **We appreciate your cooperation and patience when contacted by these technicians**. AIS technician boat inspections assist with zebra mussel prevention to protect our aquatic resources, protection of all water based recreation activity and protection of your personal property against these invaders.

Two new fish cleaning stations were installed in 2021 at Homestead Knolls and Nunda Shoals. New Barracuda units replaced the old grinder style fish cleaning stations. The new units require much less maintenance and the angler will find that breakdowns and fish cleaning station closures will be much reduced or eliminated.

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 2021, including the Calamus. Zebra mussels are found in Lewis and Clark Lake, the Missouri River, Lake Yankton, and Offutt Air Force Base lake. Invasive species technicians will be inspecting boats periodically at Calamus again in 2022. Thank you for your assistance and patience while these surveys are conducted. Please clean, drain, and dry your water craft prior to leaving any water body and never arrive at a lake with water in your boat or live well from anything other than a bottled domestic source. Invasive mussels have also been documented in several neighboring states including Iowa, Kansas, Missouri, and South Dakota. **Zebra mussels have been found in Lake Francis Case and Lake Sharpe in South Dakota. If you fish those lakes please take extra precautions to drain and dry your watercraft and tackle before returning to our Nebraska lakes and reservoirs.**

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 and quagga 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. All boats not registered in Nebraska must have a non-resident AIS sticker purchased and properly affixed to their watercraft.

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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Attention motorboat owners operating in Nebraska:

Starting in 2016, boaters whose motorized watercraft are registered in any state other than Nebraska must purchase and display a $15 Aquatic Invasive Species (AIS) Stamp each year they launch their boat in Nebraska. The stamp will help fund AIS education and inspection programs.

- Boat inspections for AIS prior to launch in Nebraska are NOT mandatory at this time.
- Personal watercraft registered outside of Nebraska must have this stamp.
- Non-motorized craft registered in any state are exempt from the stamp.
- Stamps are not required for boats registered in Nebraska. A $5 AIS fee is included on the residents' three-year boat registrations.
- Residents who register their boats in other states must have this stamp before launching in Nebraska.

This stamp is available online at **OutdoorNebraska.org** or at Nebraska Game and Parks permitting offices.

Learn more about invasive species at **neinvasives.com.**

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