

Calamus Reservoir 2024 Fall Fish Survey Summary

Nebraska Game and Parks Commission

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2024 Calamus Fish Management Summary

The following text and graphs are summaries from the 2024 fall gill net and nighttime electrofishing sampling conducted during August and October. Gillnets are used to sample fish species which primarily live in open water environments such as large reservoirs. Gill net sampling effort in 2024 was 4 nets located in the mid to lower reaches of the lake on October 10-11. Electrofishing for young-of-the-year fish was conducted on September 4th. The same general areas of the lake are utilized for sampling locations each year for standardization. No angler creel survey was conducted in 2024.

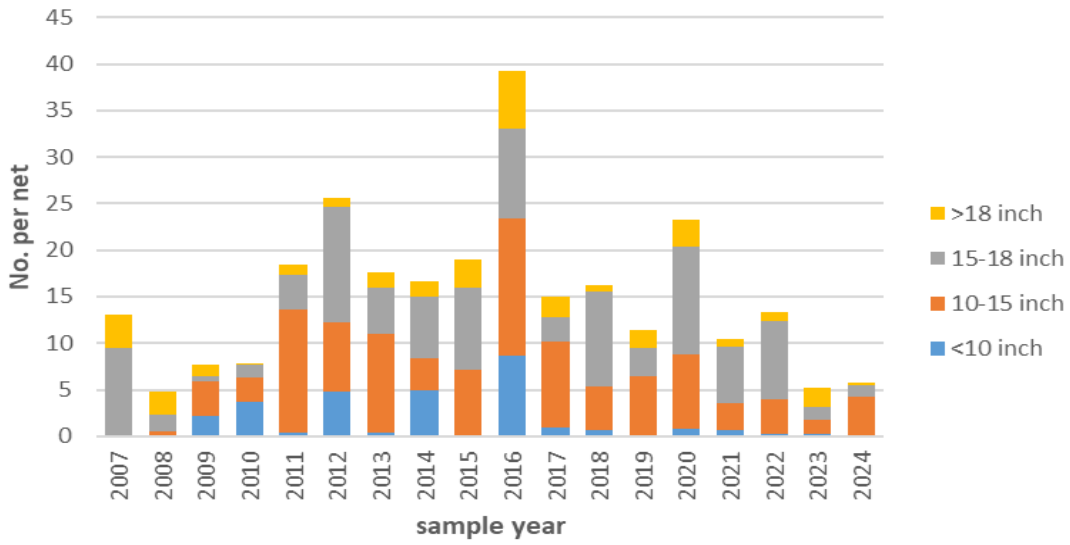
Fish Stockings: Walleye, channel catfish, and wiper populations are maintained through annual fish stocking. Muskellunge are stocked periodically to maintain their population and provide angling opportunity. In 2024, both walleye fry and fingerling were stocked. In all 2.02 million walleye fry and 231,784 fingerling walleye were stocked along with 25,000 fingerling wipers; and 14,015 10-inch channel catfish. Fish stocking in 2025 will include walleye, wipers, muskellunge, and channel catfish.

Fishing Regulations: **Walleye: Daily bag limit of 4; 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. Channel Catfish: 1 over 30 inches is allowed in the daily bag limit of 5 channel catfish. This regulation is designed to protect large channel catfish from overharvest. White Bass/Wipers: The regulation for white bass and wipers in combination has been changed to one fish over 18 inches allowed in the 15-fish daily bag.**

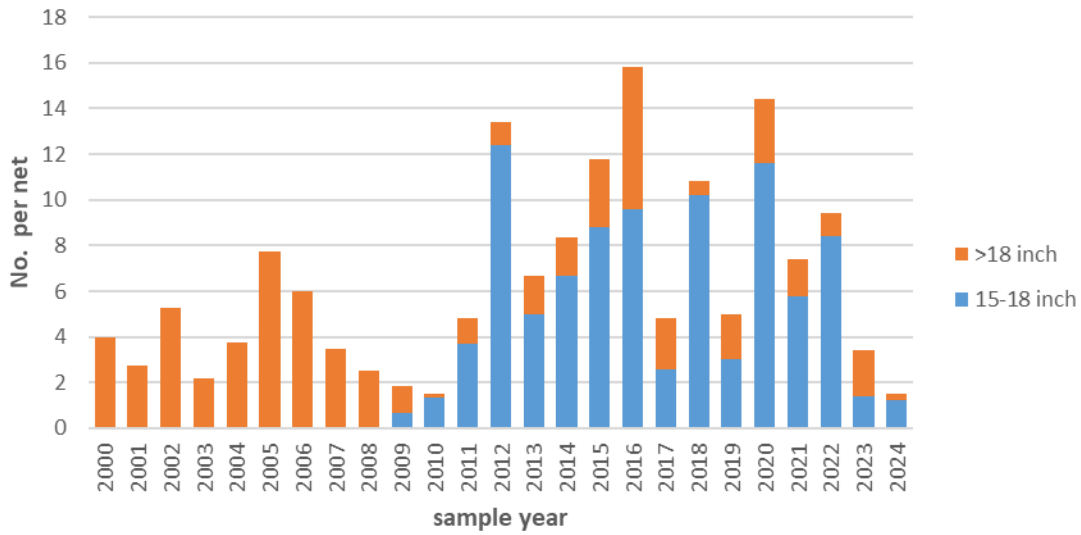
Walleye

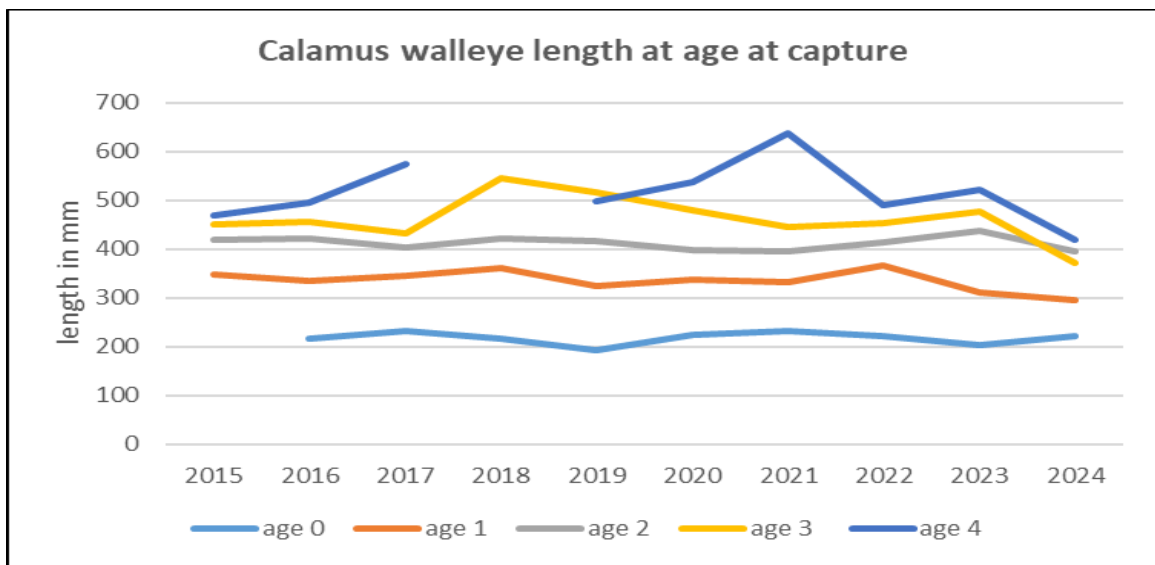
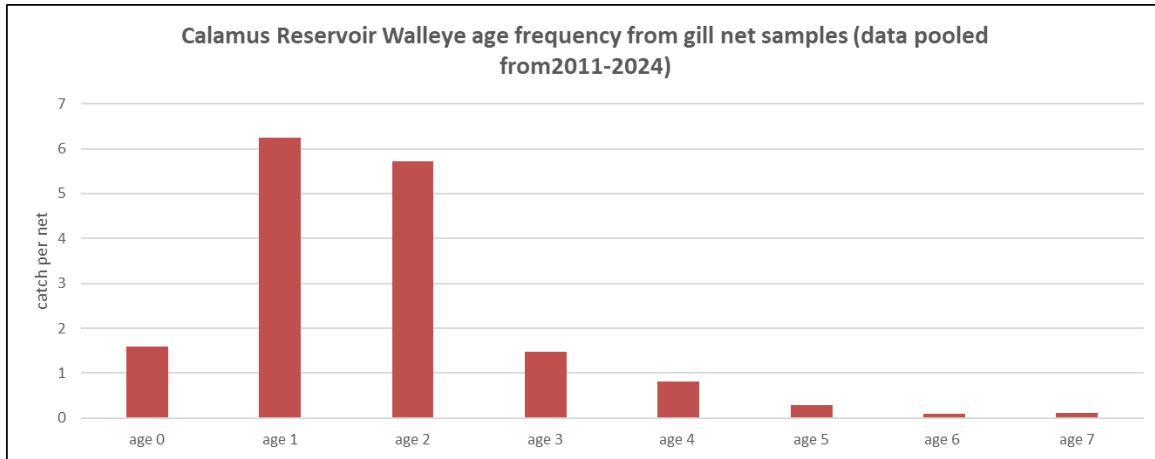
The walleye fall gill net index remained low again in 2024 and is one of the poorest net catches recorded over the last 20 years. While walleye fishing experienced by anglers in 2024 was good at times, the gill net catch was well below expectations. Lake levels were low during the sampling window and nets in the western half of the lake really underperformed. Best catches were on the east end of the lake near deeper water. We believe the 2024 gill netting results reflects poor walleye recruitment the past couple of years along with poor prey availability. Gizzard shad production was very poor in 2023 and 2024. The lack of available prey is reflected in poor walleye recruitment, poor walleye growth rates and survival, and poor walleye body condition. While it appeared young shad production was somewhat better in 2024 compared to 2023, it was still well below numbers seen in the past. As seen in the chart below, mean length at age at capture has declined for all walleye ages other than age 0. Poor shad reproduction and low numbers of young shad leads to YOY shad reaching a larger size quickly which limits the prey availability and affects walleye growth rates. It is hoped walleye angling success will be similar to 2024, but the contribution of harvestable sized walleye has declined. Walleye under 15 inches made up the bulk of the fish collected during the 2024 gill net survey. While this is good news for the future, the lack of harvestable fish reflects poor walleye recruitment and growth the past few years. The dual stocking of walleye fry and fingerling will continue in 2025 in an attempt to maintain high walleye recruitment levels and prevent a missing year class. Hopefully shad production is improved in 2025, and walleye numbers will start to rebound along with an increase in growth rates and body condition.

Calamus Reservoir walleye gillnet CPUE



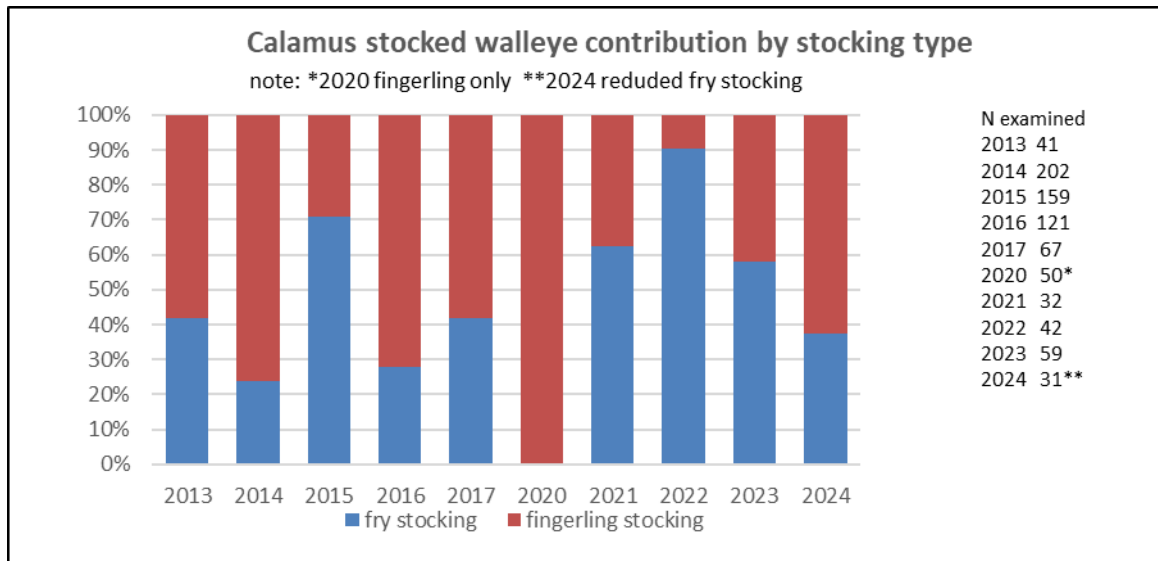
Calamus Reservoir harvestable size walleye per gill net





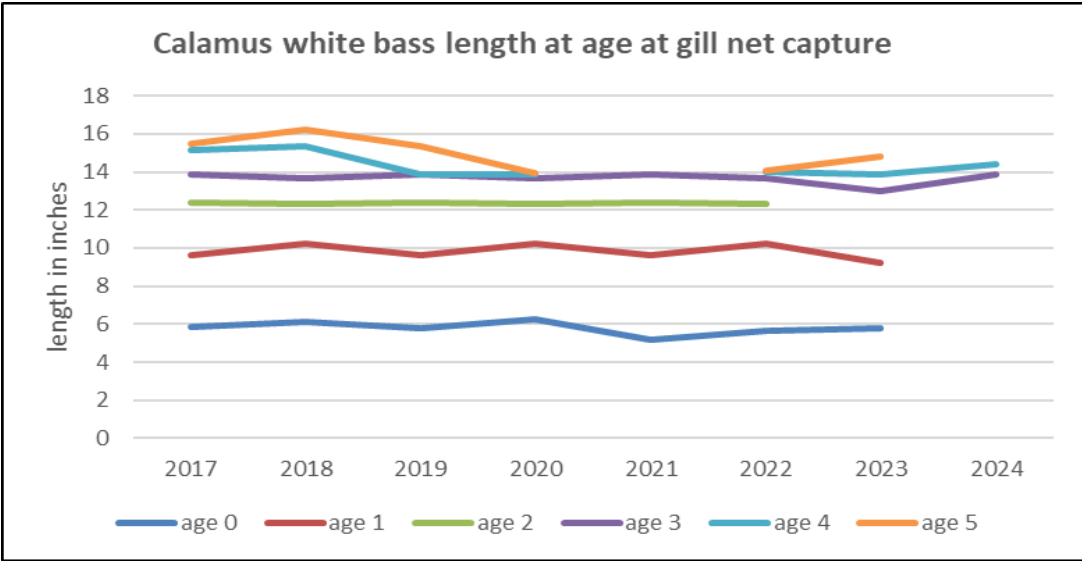
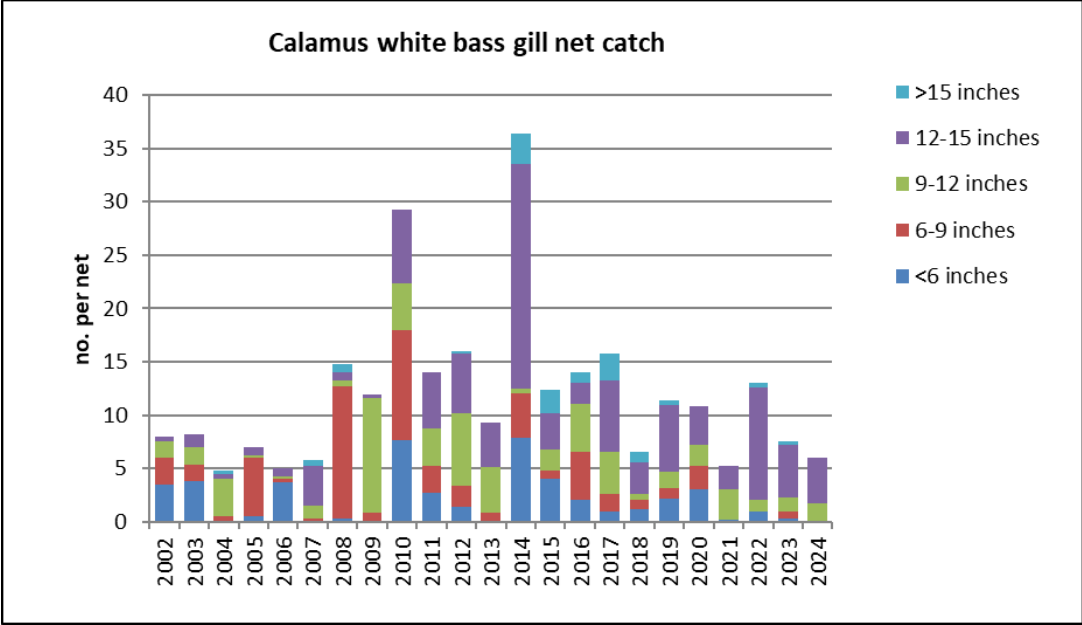
2024 Young-of-the-year Walleye Sampling

Age-0 walleye were collected by nighttime electrofishing on September 4 and September 10. Evaluation of the fry/fingerling concurrent annual stocking is ongoing using chemical marking. Past research has shown that natural recruitment of walleye at Calamus is very low to non-existent, so current efforts are concentrated toward fine tuning the stocking of fry and fingerling. In past years, the fingerling walleye received a chemical mark to help evaluate which stocking strategy is contributing more fish—fry or fingerling. At this point in the stocking evaluation, both stocking strategies are contributing to year class strength. However, one strategy can contribute a little better than the other in some years. It appears both stockings should be continued to ensure adequate walleye recruitment. The fry stocking contribution made up 37% in spite of a 75% reduction in fry numbers stocked in 2024 vs 2023. The 2025 walleye request is for 250,000 fingerling and 7.5 million fry for stocking.



White Bass

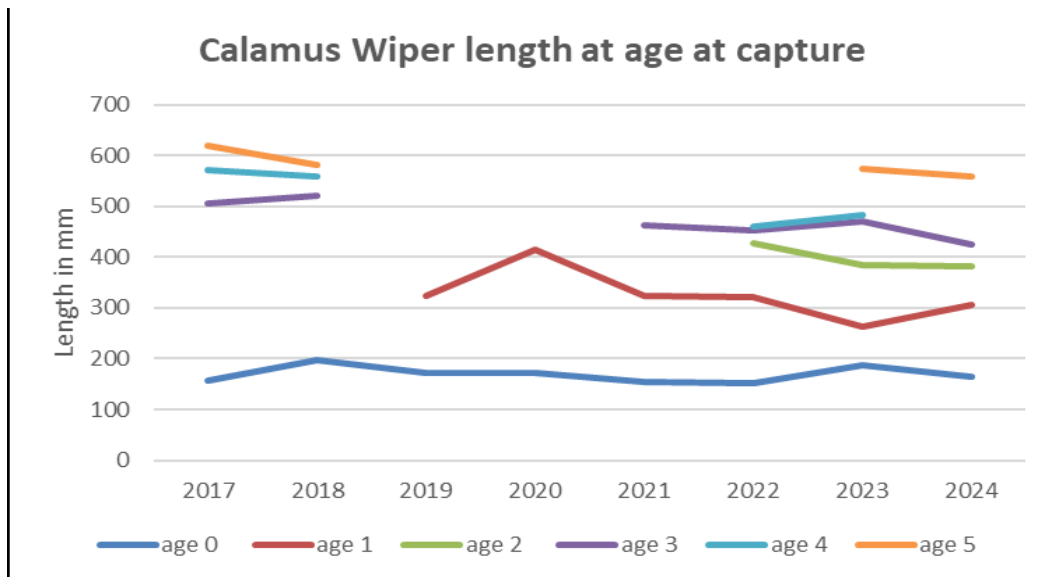
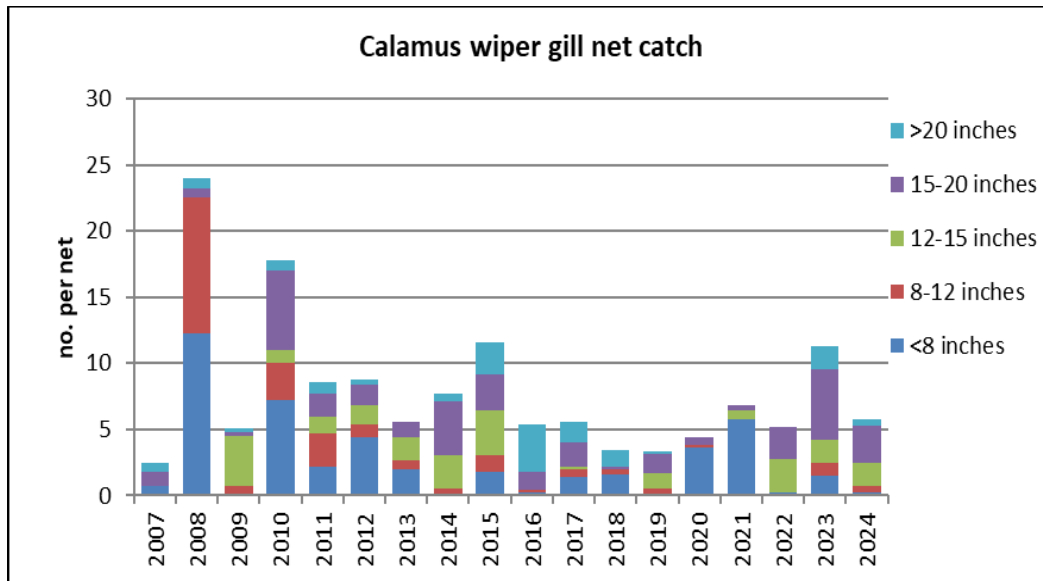
A healthy, abundant white bass population is present in Calamus Reservoir. Gill net catch rates for white bass have oscillated between 5 and 10 per net and are fairly steady. Fishing pressure and harvest of white bass was high in 2024 at times with angling really picking up in August and September. The size structure of white bass is skewed toward larger fish but reproduction appeared to be decent in 2024 as adequate numbers of young-of-year were seen during fall electrofishing. Fish are present up to 15 inches offering anglers good opportunity at quality sized fish. White bass body condition was okay for fish under 13 inches but sub-standard for the larger fish, particularly those white bass over 14 inches. Shad production was poor again in 2024 and that parameter is the driving force behind body condition across all species at Calamus. Growth rates remain consistent with fish reaching 12 inches in three growing seasons. No age-0 or age-1 white bass were captured in the gill net survey. Annual growth slows considerably after age 3 but most fish are harvested by that age. White bass fishing success in 2025 should be good and similar to what anglers have seen the past few years. **Remember only 1 white bass/wiper greater than 18 inches is allowed in the daily bag limit.**



Wipers

The wiper catch per gill net in the 2024 sample was down about 50% from 2023 but is more in line with the previous nine year catch rates. As always, wipers are a schooling fish and they can be a “hit or miss” sample. Angler success on wipers in 2025 should be similar to that seen in 2024. All length groups of wipers are present indicating good, consistent recruitment. Wipers exhibit much faster growth than white bass and current data indicates wipers 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. Anglers should see some wipers growing into the 20 inch and larger group barring any significant natural mortality. There have been some instances of bacterial infections leading to a die-off of larger fish after ice out at Calamus Reservoir. We will monitor the situation.

Only 1 wiper/white bass greater than 18 inches is allowed in the daily bag.

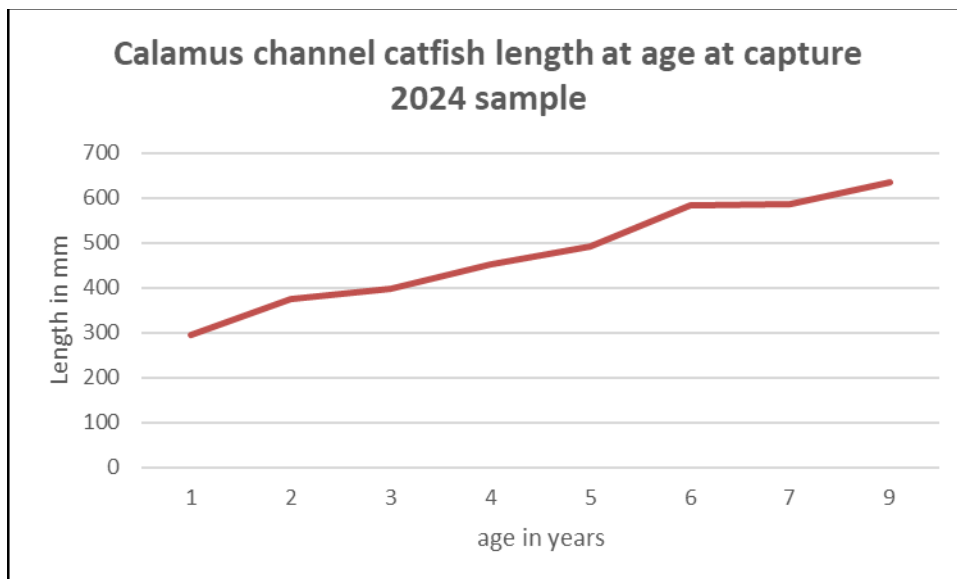
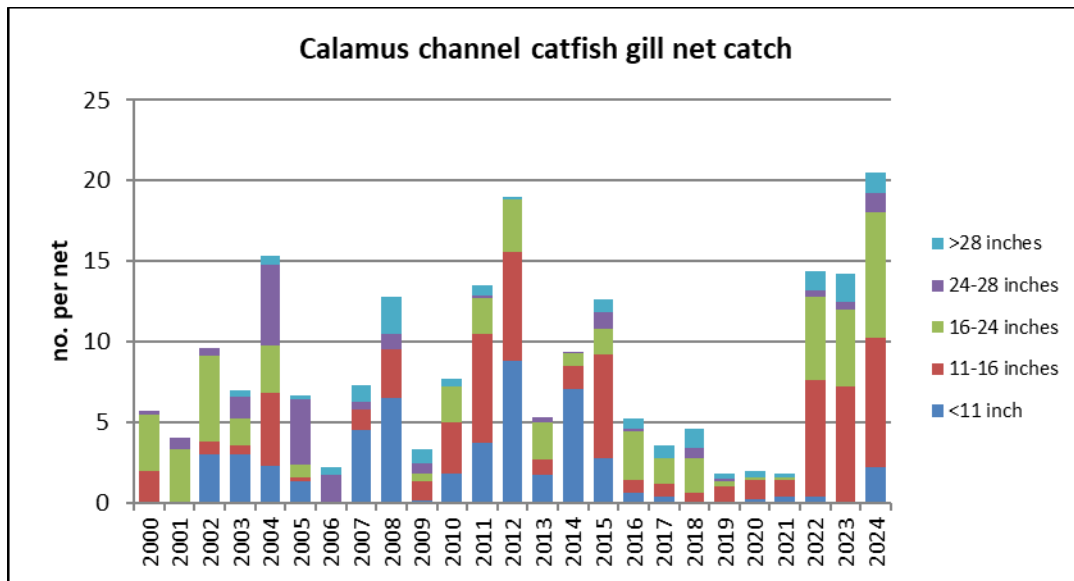


Channel Catfish

Channel catfish catch per net in the 2024 survey is the highest catch rate recorded for gill net surveys. Channel catfish numbers continued to climb after switching back to stocking ten-inch fish annually. Once again the reservoir elevation was low during the 2024 sample and this may have led to an increase catch of channel catfish, but numbers are strong and recruitment high. 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. We look for catfish angling opportunity in 2025 to be similar as that seen in the past few years.

Pectoral spines were extracted from a subsample of channel catfish in 2024 to gather baseline data on

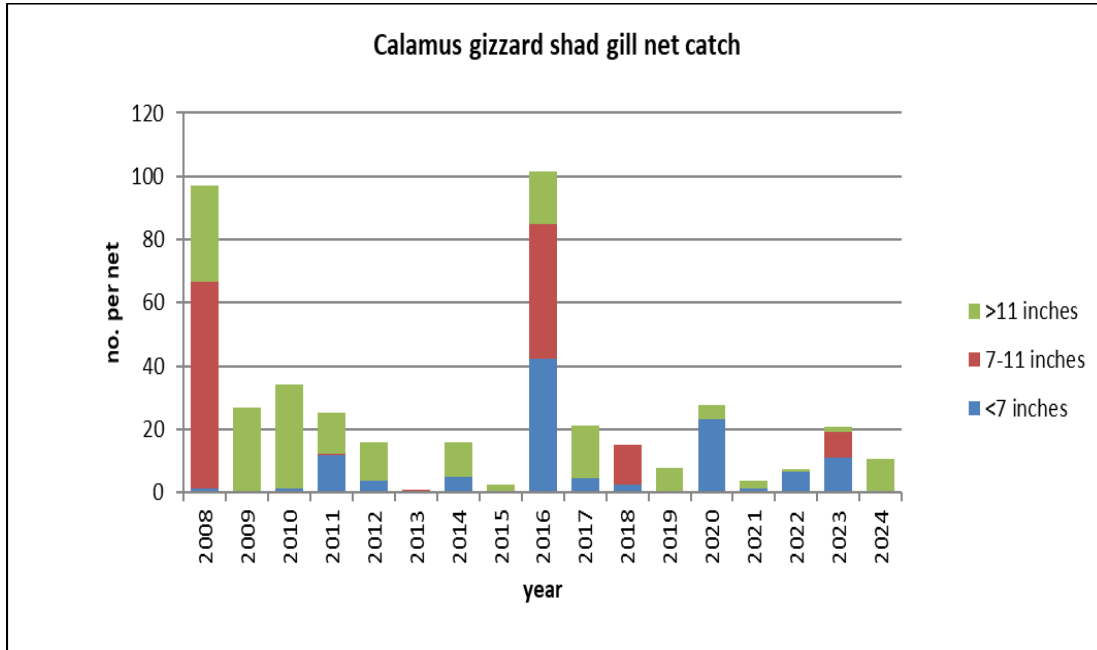
channel catfish growth rates. Growth rates are good with a wide range of ages represented. Growth rates will be monitored periodically in the future. A regulation change occurred for Calamus Reservoir beginning in 2020. A “1 fish over 30 inches in the daily bag limit” regulation is now in place for channel catfish.



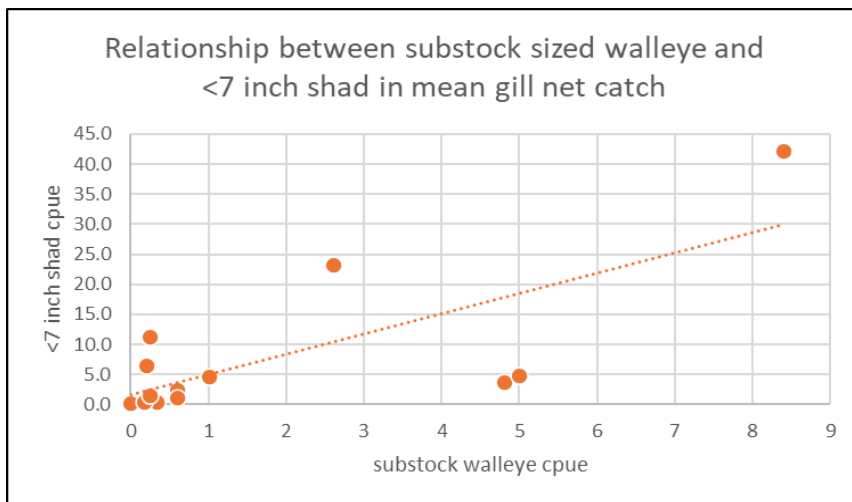
Gizzard Shad

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. Shad production in 2024 was spotty, seemingly delayed, and less than adequate as forage for all the predatory sport fish found

in the lake. While the gill net catch indicated a pretty good number of shad, the majority of those were over 11 inches which are good brood stock size but poor prey size. Young shad quickly outgrew the size range for utilization by smaller predatory sport fish. This can lead to reduced body condition, reduced growth rates, and increased mortality for sport fish. Shad are continuing to over-winter in the warmer water of Gracie Creek at the upper end of the lake. It becomes critical to ensure shad have access to this over-winter area. We will continue to monitor shad numbers at Calamus Reservoir.

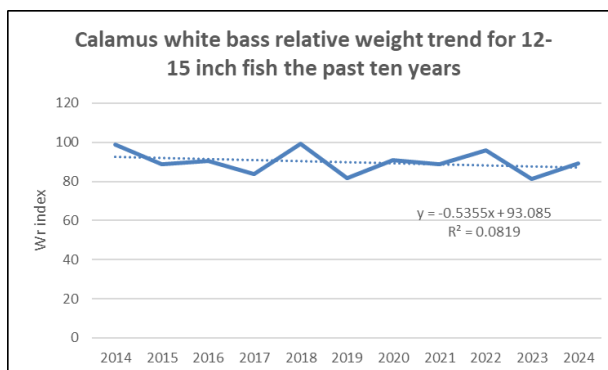
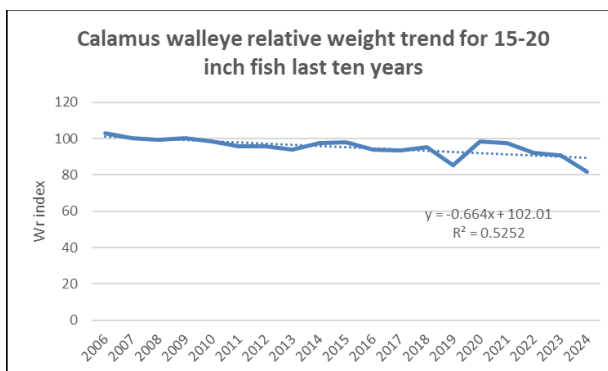
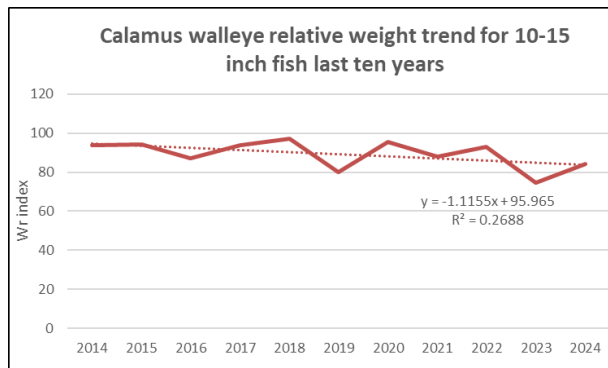


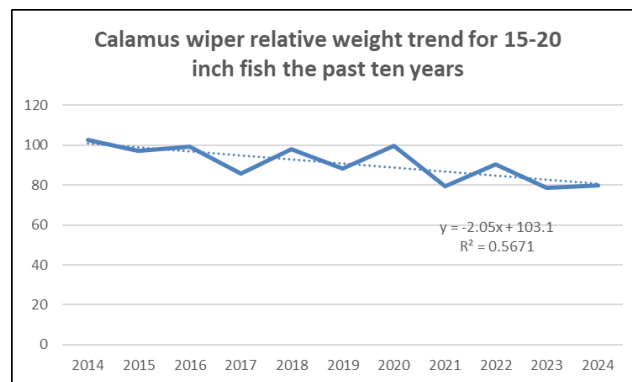
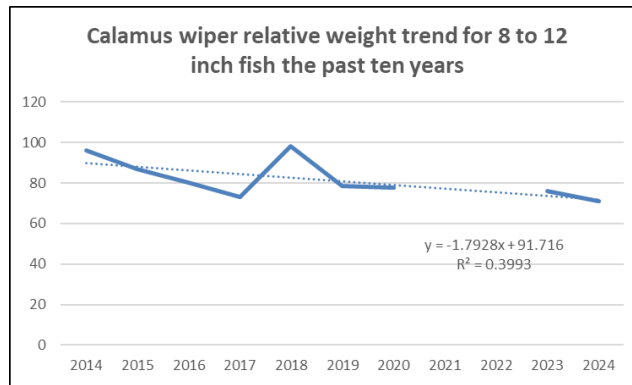
The importance of gizzard shad production can be illustrated in the chart below. As you can see, a positive relationship exists between the number of substock walleye (under 10 inches) and the number of young, small gizzard shad. In other words, the higher the small shad production the better the walleye recruitment.



Body Condition Index (relative weights)

Discussion in the above paragraphs dealt with prey availability (shad production) and how the poor shad production in 2024 may have affected fish growth and recruitment. The following graphs illustrate the index we use to evaluate fish body condition. This index is called relative weight and gives the percentage of a sampled fish weight vs the “standard” weight for a given length. Any index over 85, which is 85% of the standard, is considered adequate and prey supply is not a problem. Obviously any fish with an index over 100 would be considered “plump” with more than enough to eat. Everything with fish body condition, growth, recruitment, and mortality is related to shad production and that critical food supply. Hopefully 2025 will see higher production of small shad for these predatory fish to consume. Trendlines have been added to the Relative Weight charts to better display changes over the past ten years. There are some downward trends recently that are likely due to poor shad production.





Walleye show a slight decreasing trend in body condition the past ten years along with larger wipers. White bass body condition has stayed relatively constant the past ten years.

Invasive Species

Anglers and recreational boaters should continue awareness for zebra and quagga mussels while using Nebraska lakes. Monitoring was completed at many Nebraska reservoirs during 2024, including the Calamus. To date, no zebra mussel adults or veligers have been found at 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 2025 as well as collecting samples for potential early detection of zebra mussels. Thank you for your assistance and patience while these surveys are conducted. Please clean, drain, and dry your watercraft 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. **Special Note: Zebra mussels have been found in Lake Francis Case, Lake Sharpe, and Lake Oahe in South Dakota in addition to a number of Northeast South Dakota lakes. 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), 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 at

<https://outdoornebraska.gov/conservation/conservation-challenges/invasive-species/aquatic-invasive-species/>



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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