

## 2024 Lewis and Clark Lake Fish Sampling Summary

### Nebraska Game and Parks Commission

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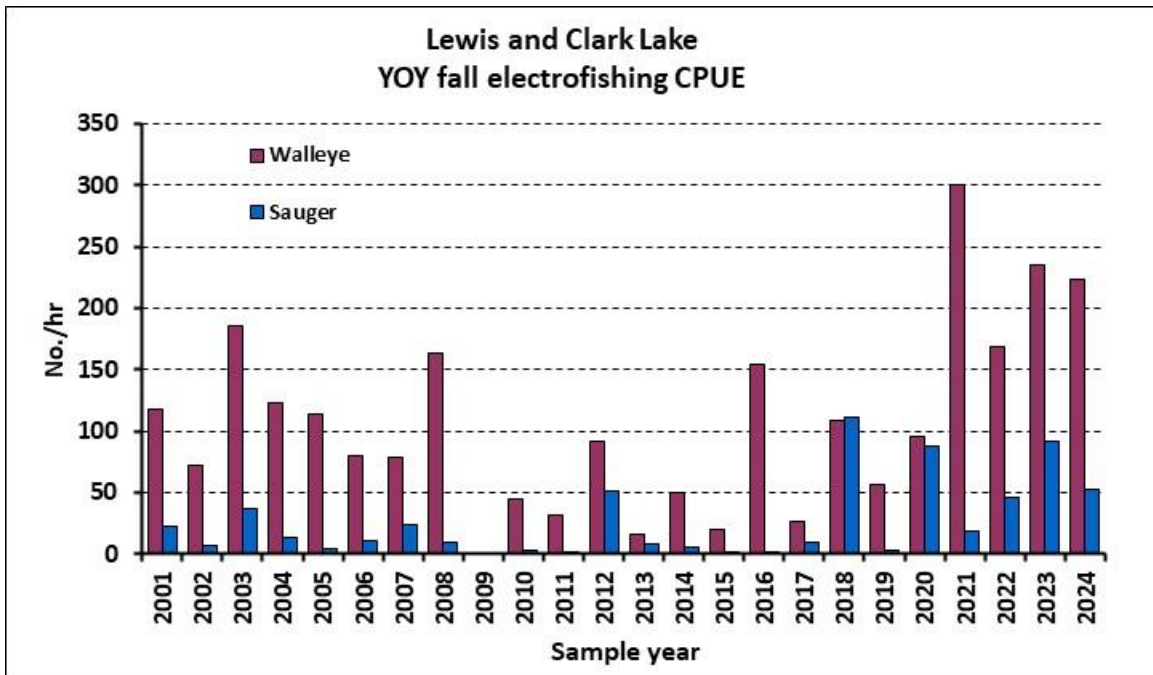
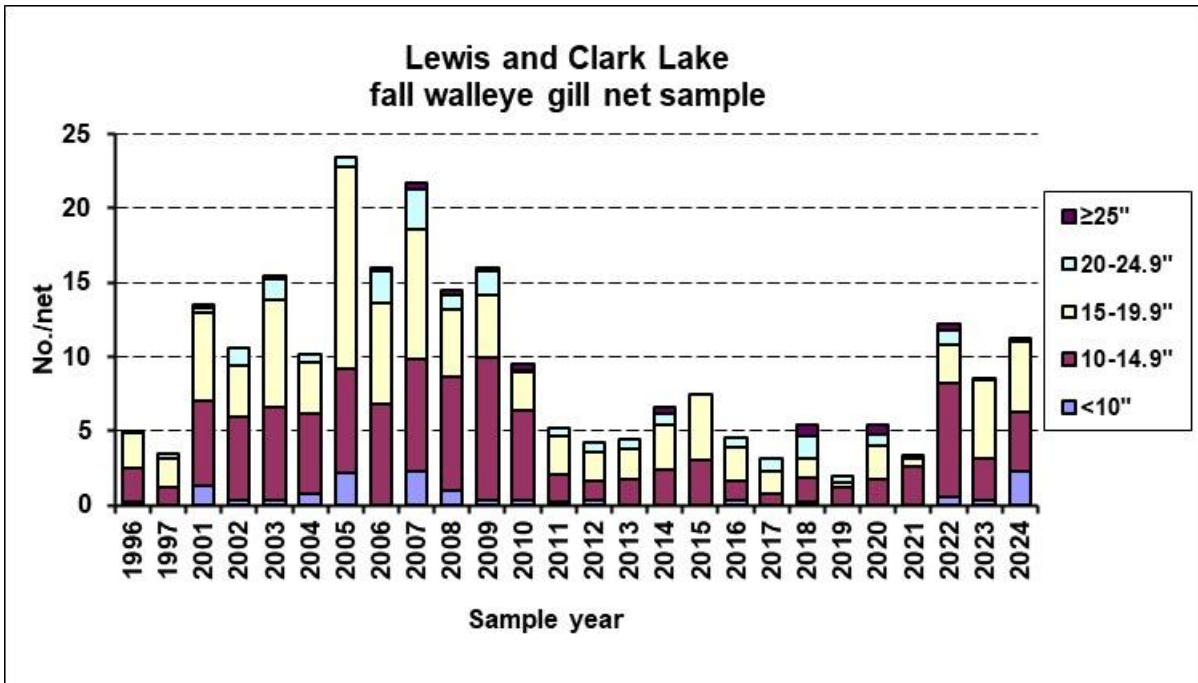


The following text and graphs summarize data from the fall fish survey on Lewis and Clark Lake. Night-time electrofishing for young-of-the-year (YOY) was conducted on September 25 and 26 and gill netting occurred on October 1 and 2. Sampling consisted of two hours of night-time electrofishing and 6 gill nets. Gill nets targeted walleye, sauger, white bass, and channel catfish while electrofishing was used to monitor abundance of YOY walleye, sauger, and white bass as an index of 2024 production. Both sampling methods are normally conducted on an annual basis. Historical data has shown that periods of high flows through the dam typically correspond to lower abundance of walleye in the reservoir. As a limited example, through the ten-year period from 2001-2010 the mean daily outflow was 19,770 cubic feet per second (cfs) with a corresponding mean catch rate of 15.1 walleye/gill net while during the ten-year period from 2012-2021 the mean outflow was 30,070 cfs and the mean catch rate was 4.6 walleye/gill net. Walleye and sauger anglers experienced good success in the reservoir proper once again in 2024 which was evident from the angling pressure observed throughout the year. Fishing the chutes at the upper end of the lake and the riverine portion upstream were also worthwhile endeavors in 2024 as anglers also saw success in those areas. White bass fishing remained lackluster for the most part, but catfishing opportunities continued their positive trend.

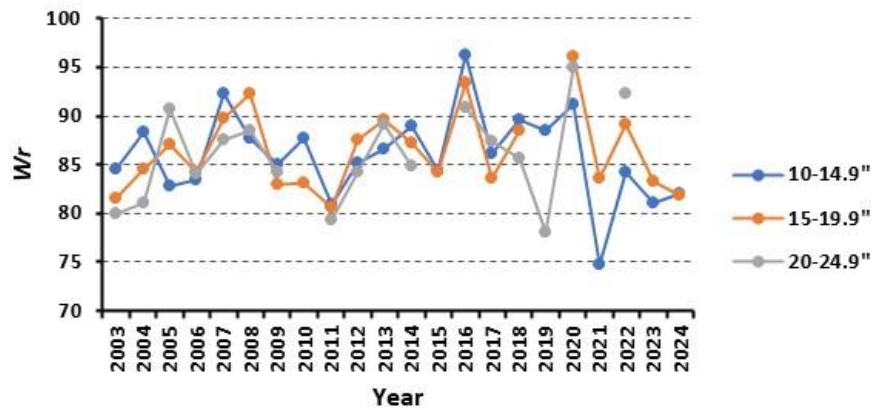
### Walleye

The walleye population in Lewis & Clark should once again provide good angling opportunities in 2025. The 2024 walleye catch was very similar to that of 2023 except that an increase in the number of fish less than 10 inches increased notably. Growth of the age-0 fish (2024 year class) was very good and they attained sizes that made them susceptible to catch in the gill nets. In most years it isn't that the fish haven't been there, it's that they just hadn't reached a size that allowed them to be captured in our nets (i.e., they were shorter and thinner and could thus swim through the mesh). Four consecutive years of good walleye production, most from natural reproduction, have bolstered and maintained the walleye population. The strong 2021 year class was still fairly represented in the gill net survey but has dropped substantially after being vulnerable to harvest for around a year and a half at this point. The 2022 and 2023 year classes have experienced good recruitment in the reservoir thanks to outflows through Gavins Point Dam remaining relatively low, thus continuing to provide good catch rates in our surveys and for anglers. Quality walleye angling opportunities are expected to continue since our YOY sampling indicated strong year classes being produced in each of the last four years. However, as alluded to earlier, it will be highly dependent on flows through the system remaining relatively low. Four consecutive years of reduced releases through the dam have provided conditions for more of those fish to stay in the reservoir. Graphs and discussion later in this report provide some background on the relationship between dam releases and walleye numbers. The walleye in the reservoir have exhibited variable body condition ( $W_r$ ) over the years indicating limited food resources at times. In spite of experiencing reduced body condition, the walleye are maintaining their growth rates and, on average, continue to reach legal harvestable size (15 inches) in their third growing season. Anecdotally, it does appear that the historical primary prey species in the reservoir is on the rebound. Observations of emerald shiners have been increasing over the last

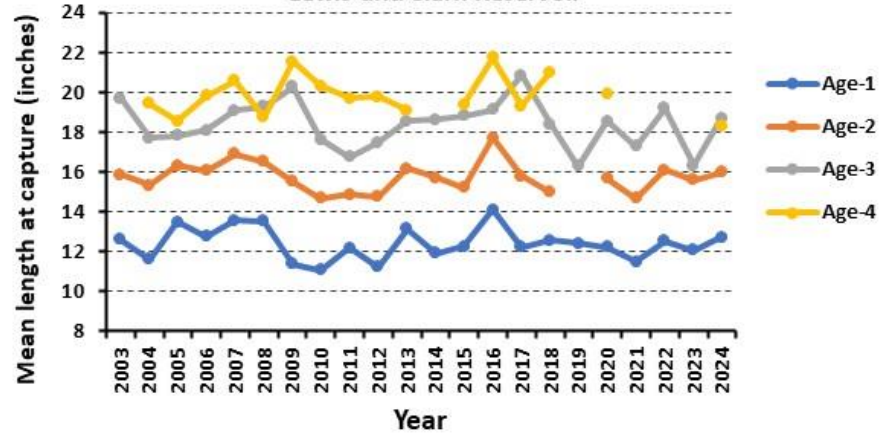
few years and several anglers commented on seeing high numbers/large schools of small fish in shallow areas around the reservoir. Additionally, gizzard shad production increased in 2024, adding substantially to the prey base present in Lewis & Clark in 2024.



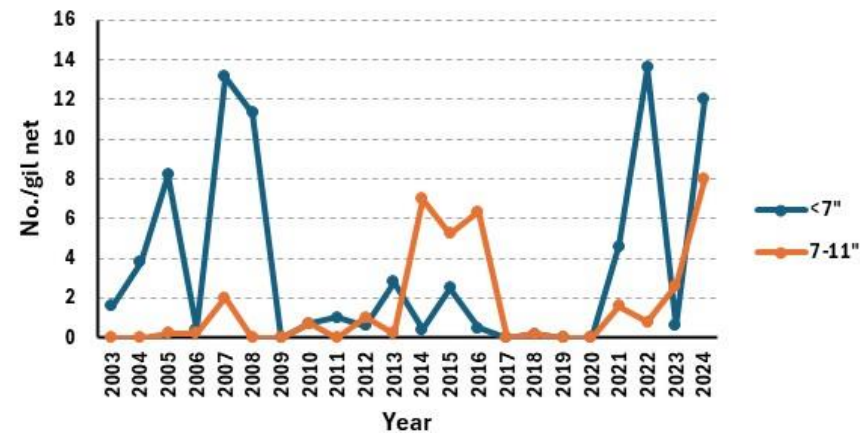
**Lewis & Clark Walleye Condition (Mean *Wr*)  
by Length Group**



**Walleye Mean Length at Age at Capture  
Lewis and Clark Reservoir**

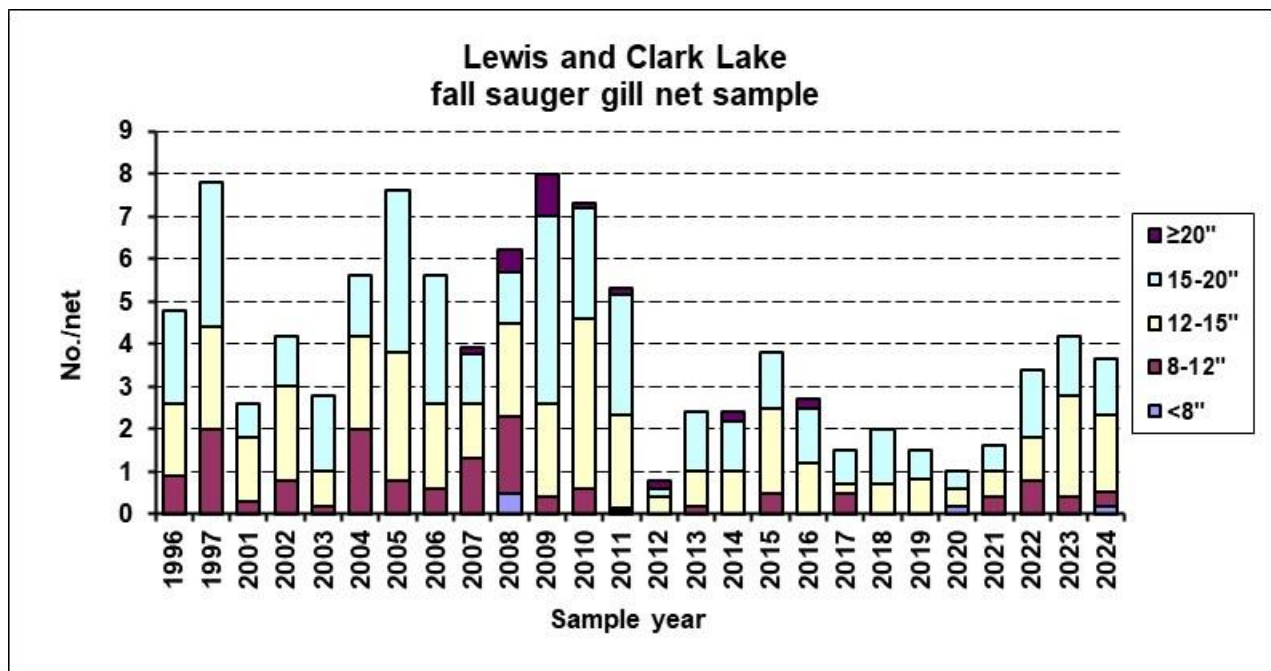


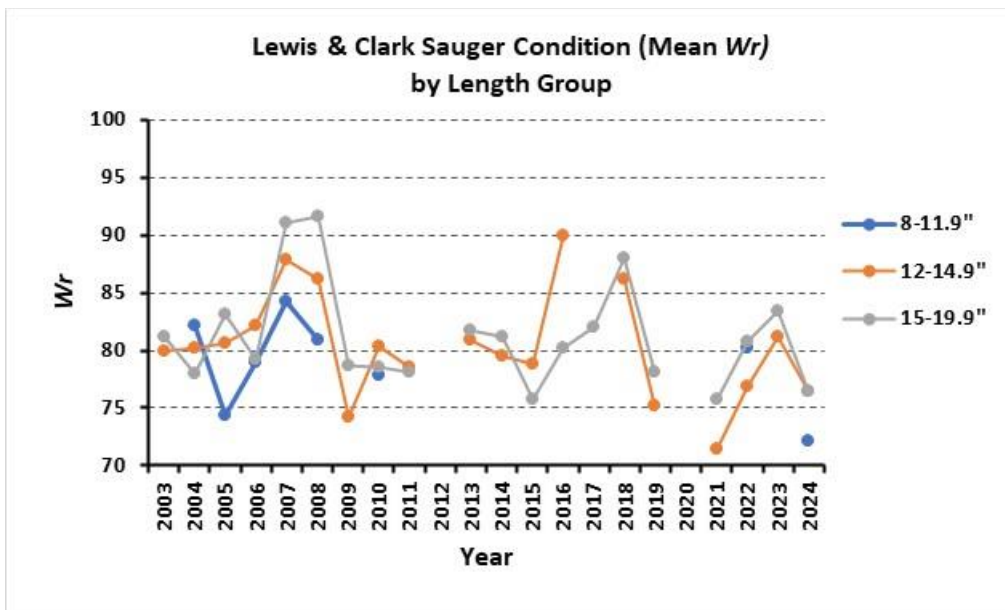
**L&C Gizzard shad gill net CPUE**



## Sauger

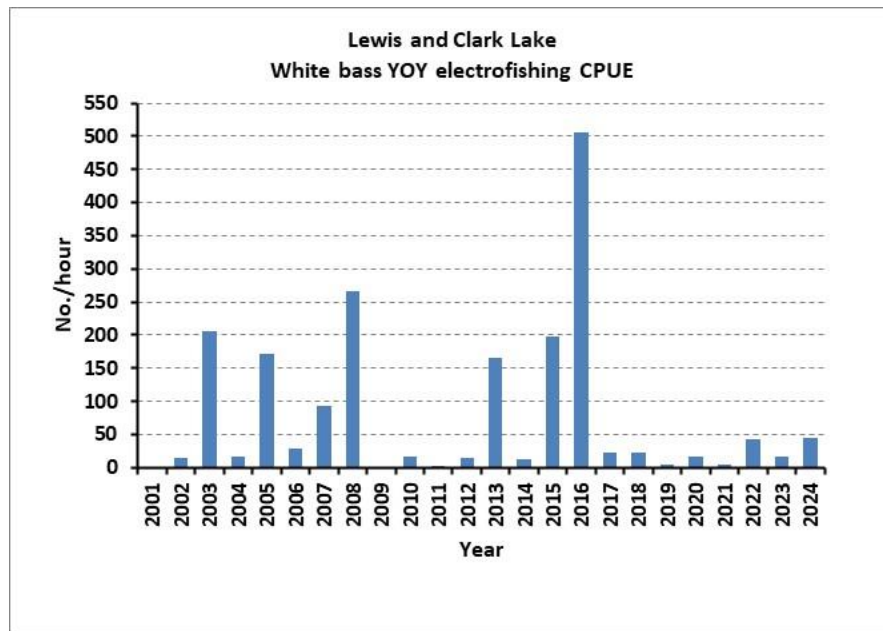
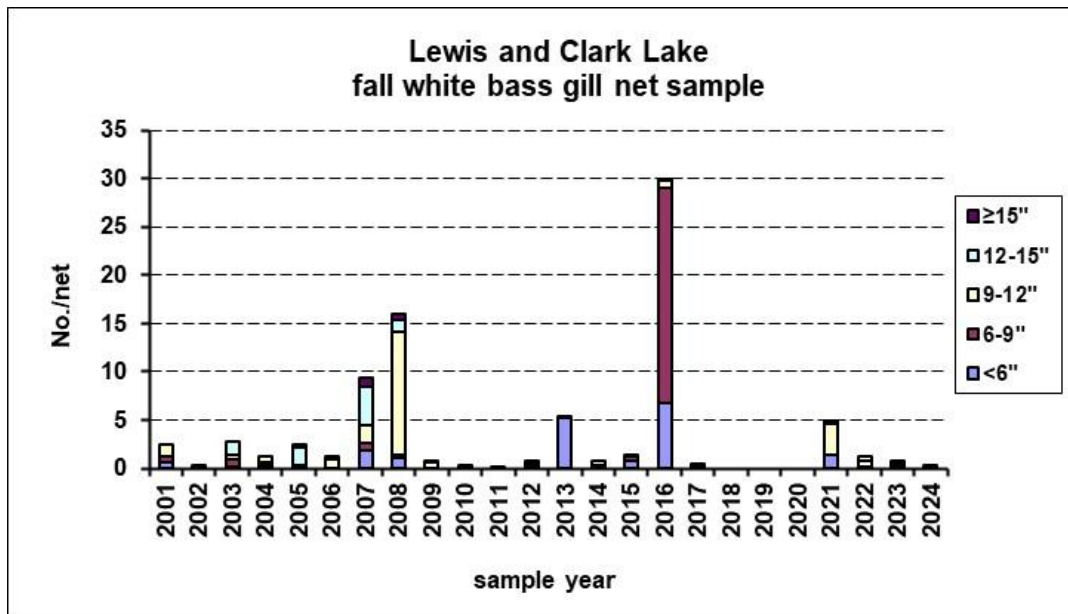
Sampling has indicated a consistent sauger population over the last three years, especially the catch of those over 15 inches. Five year classes of sauger were observed in the sample and just over a third of the fish were of harvestable size ( $\geq 15$  inches). Relatively strong year classes have been produced in five of the last seven years and have contributed to consistently promising sauger catch rates that are at their highest since 2015. As with the walleye, the reduced flows are likely keeping more sauger in the reservoir to recruit to the fishery. Sauger appeared to be struggling to find food in 2024 as indicated by noticeably reduced condition for all length groups. In response to the reduced body condition, growth rates did slow a bit compared to previous years and, on average, sauger were just short of 15 inches by this time in their 3<sup>rd</sup> growing season. Sauger are more adapted to flow than walleye and often provide some good angling opportunities in the delta portion of the reservoir. This area, often referred to as the “chutes”, is in the vicinity of Springfield, SD and Santee, NE. Considering the production in the system over the last few years (indexed with the fall YOY sampling), angling should be quite good in 2025. The riverine stretch upstream of the delta also provides good angling opportunities for sauger (and walleye).





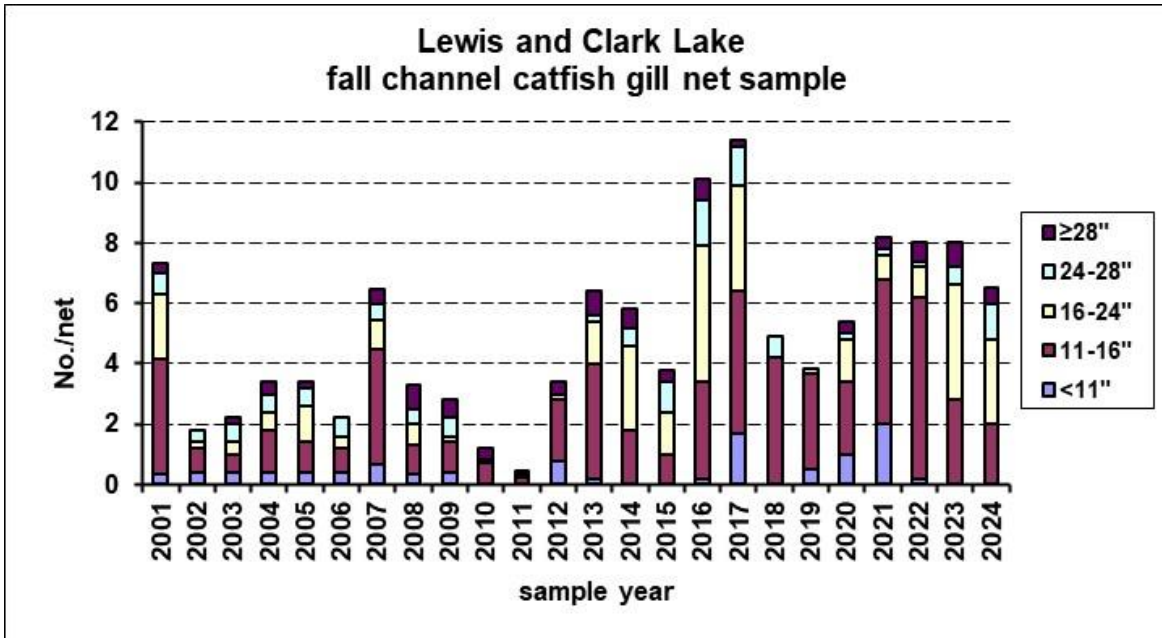
### White Bass

Not much to report once again on white bass as low catch was the theme in Lewis & Clark in 2024. Most of this discussion is unchanged from last year as the same principles apply to this year. This information is maintained not only as a reminder for those who read this report each year but also to provide information to those who might be new to it. As has been mentioned before in this report, the low number may not be completely representative of the population because white bass can be inherently difficult to sample due to their schooling nature (being very “hit or miss”). Anecdotally, this is evident when looking at the gill net catch rates from 2001 to present. Sampling resulted in a catch of at least 5 white bass per net only five times in the last 24 years with two of those times (2013 and 2016) being made up of age-0 fish almost exclusively. Despite low gill net catch rates in those other years, the white bass fishing was quite phenomenal in some of them. Growth rates have typically been excellent in the reservoir, producing great angling opportunities for white bass over 12 inches, and even exceeding 15 inches, when the fish are present. The reduced flows through Gavins Point Dam over the last four years should provide better retention of fish within the reservoir. That, coupled with two decent years of production out of the last three, will hopefully provide better white bass angling in 2025 and beyond. It was also encouraging to hear of white bass surface activity along the dam in the summer of 2024 along with word of occasional angler catches of decent numbers of harvestable-size fish over the last two years.



### Channel Catfish

Channel catfish catch rates have been quite consistent over the last four years and comparatively high since 2012. Good catch rates were evident in 2021 and 2022 but size structure was less than desired. However, those cohorts have grown and recruited to larger sizes, providing a good proportion of fish exceeding 16 inches in the last two years, including a fair portion exceeding 24 inches in the 2024 survey. Often overlooked by fishermen, catfish are fun to catch and possess good fighting ability and 2025 will again be a great time to pursue catfish in Lewis & Clark. The reservoir will not only provide some great opportunities for those who like to harvest some of those “pan-size” fish for a meal but also to catch some larger fish. In addition to the reservoir, the delta and river upstream provide some very good catfish angling opportunities.

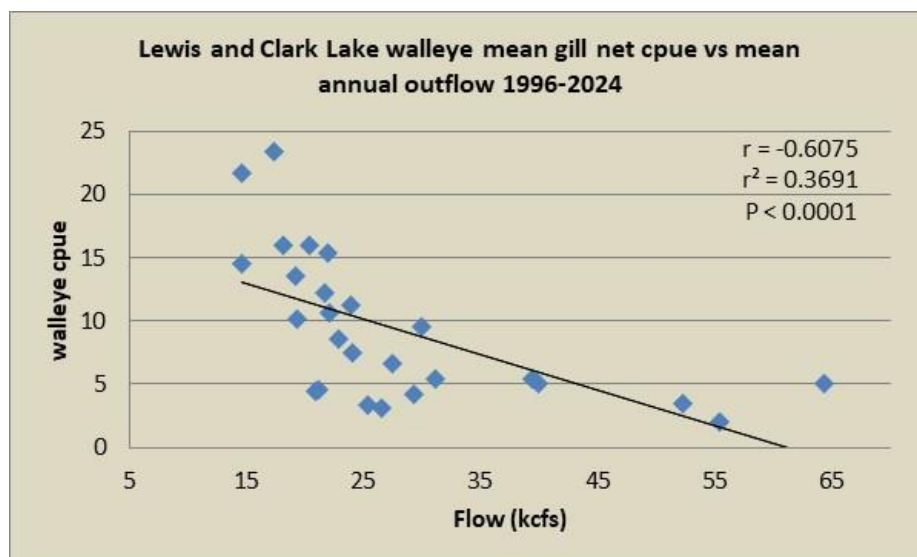
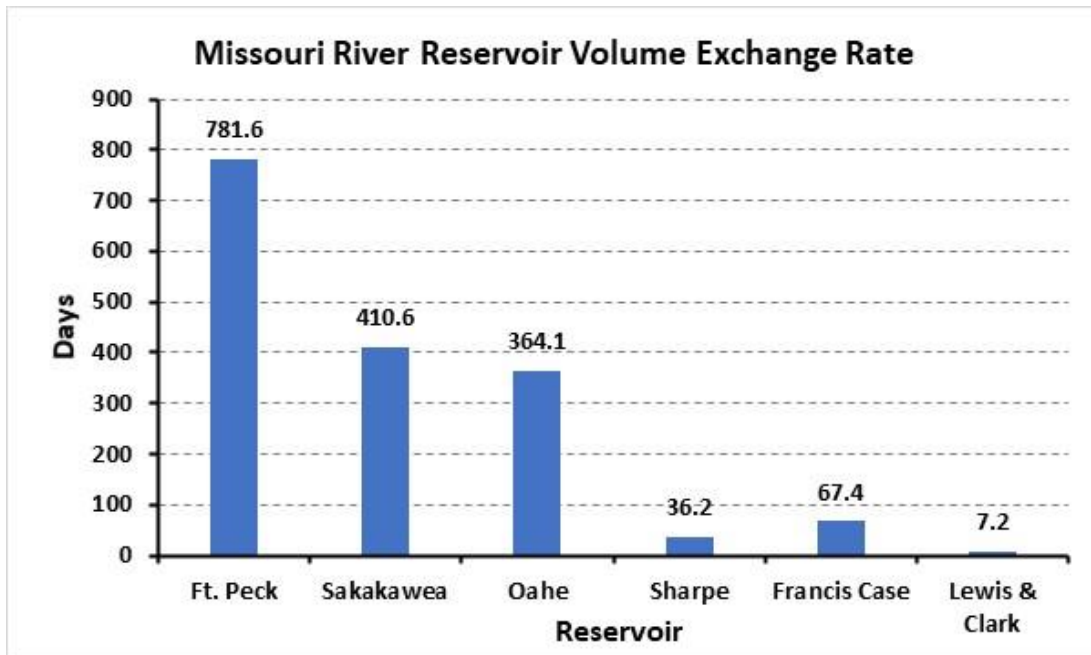


### Other Species and Information

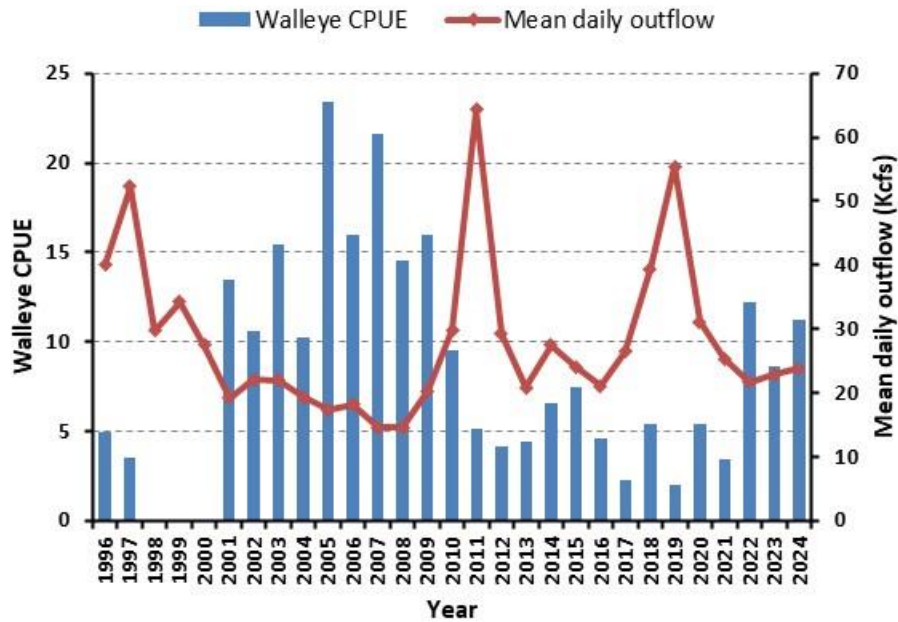
Although no data is presented in this summary report, other species available for anglers to catch in Lewis and Clark include abundant smallmouth bass along with some opportunities for largemouth bass, crappie, bluegill, northern pike, and now yellow perch. Smallmouth bass are found throughout the lake and river system, usually associated with rock structure, both natural and man-made. Crappie are typically caught in the bays around the lake, in the delta backwaters, and around docks in the marinas. Bluegill can be caught along rock areas or in the stands of vegetation in the bays and other protected areas that are present in the reservoir and northern pike provide an occasional catch throughout the system. Submerged vegetation has become more abundant in the reservoir and appears to have provided a niche for yellow perch. Reports of good angling success on yellow perch were not uncommon in 2024 with anglers actively pursuing them in some instances.

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 invasive carp populations found below Gavins Point Dam and keep them from getting into the lake and river systems above. However, the barrier can lead to depressed sport fish populations in the reservoir if flows and escapement are too high. Consider the following charts. The exchange rate, also known as turn-over 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 would likely apply to other species such as white bass also. Some species are more prone to entrainment/escapement than others with walleye and white bass being 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. In the mid- to late-2000's the average flow through the dam was less than 20,000 cfs for five consecutive years. Consequently, sampling during that period produced the highest catch rates observed through our sampling history on the reservoir. Flows through the dam had been relatively high most years since that time, but reduced flows over the most recent four years appeared to have equated to much improved walleye and sauger catch rates from 2022 through 2024.





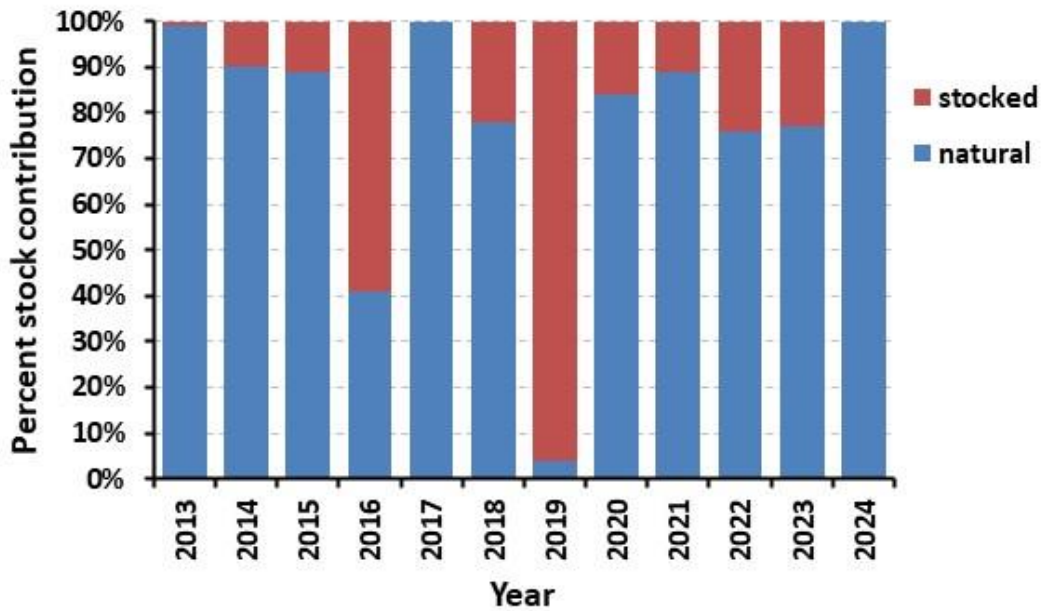


Additional evidence of walleye movement out of the reservoir and through the dam can be found in the evaluation of the various walleye stockings which utilized marked fish. Annual walleye stocking was initiated in 2014 to address the low walleye numbers in the reservoir following the 2011 flood. The walleye stocked over that time were marked with oxytetracycline (OTC) which allowed us to evaluate not only the contribution of stocked fish to the reservoir population but also document movement of the stocked fish. Walleye stocked above Gavins Point Dam have comprised up to 69% of the young-of-the-year walleye collected below the dam in sampling conducted from 2016 to 2023. These fish are “lost” to the reservoir 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 a high turn-over system.

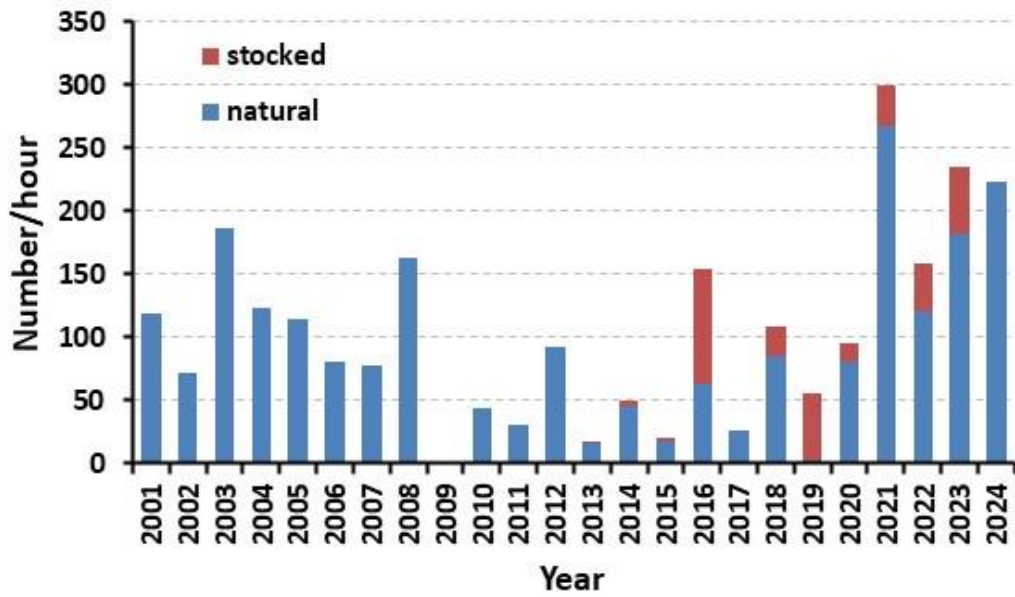
### Stocking Evaluation & Research

Walleye stocking efforts in Lewis & Clark prior to 2011 were limited to some “initial” stockings following the closure of Gavins Point Dam and a two-year period in the mid-1980’s. The walleye fishery had otherwise been maintained through natural reproduction and recruitment. However, annual walleye stockings were initiated in 2014 (exception: no stocking in 2017 and 2024) as an attempt to address the low adult walleye numbers being observed in the reservoir since the major flood year of 2011. As mentioned earlier in this report, all stocked fish were marked with OTC to allow for stock contribution analysis. Fry stockings were attempted from 2014 through 2016 but proved relatively unsuccessful with stock returns ranging from <1% to 11% for those 3 years. In 2016, South Dakota Game, Fish, and Parks (SDGFP) stocked 1.4 million fingerlings in addition to Nebraska’s fry stocking. That fingerling stocking proved much more successful comprising 50% of the 2016 walleye young-of-the-year (YOY) sample that year. Due to the success of the fingerling-stocked fish, fry stocking efforts were abandoned and only fingerlings have been stocked since.

Lewis and Clark YOY walleye night EF sampling



Lewis and Clark YOY walleye night EF CPUE



Year	Number	Size	Source	In-lake YOY Contribution
2014	14,107,500	Fry	NE	<1%
2015	12,800,000	Fry	NE	11%
2016	13,449,865	Fry	NE	8%
2016	1,400,000	Fingerling	SD	51%
2018	1,047,446	Fingerling	NE	22%
2019	1,819,269	Fingerling	NE	96%
2020	953,360	Fingerling	NE	16%
2021	536,972	Fingerling	NE	8%
2021	356,564	Fingerling	ND	1%
2022	2,101,511	Fingerling	NE	24%
2023	1,006,819	Fingerling	NE	23%

Walleye fingerlings were stocked at the upper end of the reservoir between Springfield, SD and Charlie Creek on the South Dakota side in most years. Exceptions were in 2018; when they were stocked at several locations including the Fort Randall Tailwaters, Running Water boat ramp, and the upper end of the reservoir, and 2021; when about 40% were stocked at Verdel and the remainder at Springfield. Stocked fish contributed a substantial proportion to the YOY catch in 2016 and 2019 while other years they comprised less than 25% of the catch. Despite seeing high stock contribution in those two years and good to excellent YOY catch rates during fall sampling in multiple years, increased gill net catch rates of adult walleye in subsequent years had not occurred in most years following 2011. However, analysis by SDGFP staff of older fish collected on Lewis & Clark Lake indicated that 50% of age-2 walleye collected in 2021 were stocked fish and that 22% of age-1 walleye collected in 2023 were stocked fish. Those 2-year old walleye collected in 2021 would have been from the high stock contribution year (96%) of 2019. These percentages do seem somewhat high but keep in mind that they are based on a relatively low number of fish. These data suggest that stocking did seem to, at best, help maintain the low-density walleye fishery that had been present in the reservoir through some of those high-flow years. However, entrainment/escapement appears to be the overall driver on adult walleye abundance in the reservoir with stocking having little influence on increasing said abundance. Additionally, stock contribution was low in 5 of the 7 years that fingerling stocking occurred.

The stocking efforts and mark analysis were a combined effort between the Nebraska Game and Parks and South Dakota Game, Fish, and Parks (SDGFP). After considering the strong natural walleye production over the last three years, the limited contribution by stocked fish to the YOY catch most years, and the stocking's limited influence on adult walleye numbers, it was decided by both agencies to forego walleye stocking in the reservoir in 2024 and likely beyond. Should stocking occur in the future, stocked fish will be marked so that their contribution can once again be assessed.

## Current Research-Movement Study

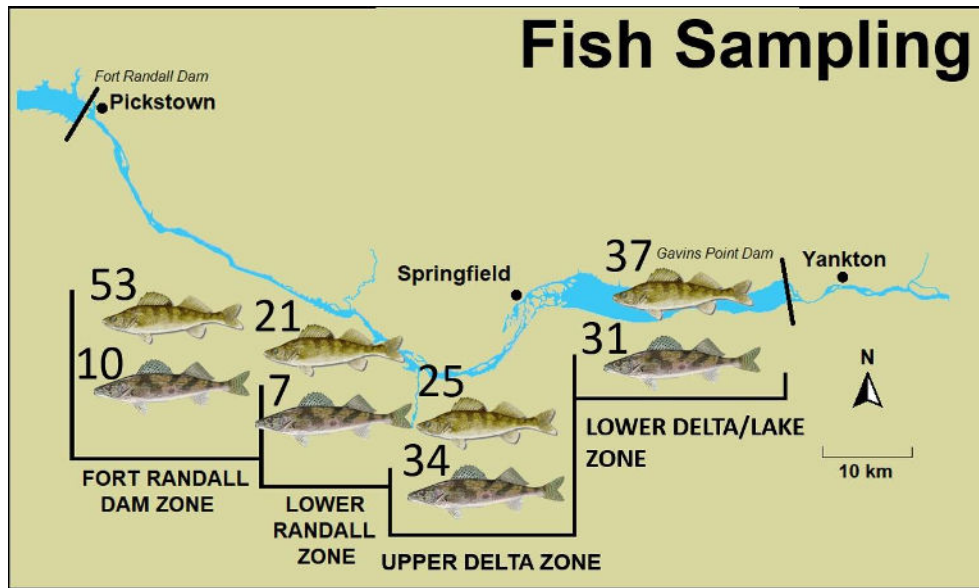


Diagram indicating the zones applied during the study and the number of walleye and sauger implanted with transmitters in each zone throughout the study. Image courtesy of Will Radigan, UNL.

South Dakota Game, Fish, and Parks (SDGFP) was the lead on a tagging project monitoring movement of walleye and sauger in the Missouri River system downstream of Ft. Randall Dam, primarily between Ft. Randall Dam and Gavins Point Dam. This research project was initiated in 2021 and concluded in 2024. The study was conducted by University of Nebraska at Lincoln researchers Will Radigan (PhD graduate student) and Mark Pegg (UNL professor), with assistance from both SDGFP and NGPC fisheries staff. Walleye and sauger were collected from four zones in this reach over the last several years and implanted with acoustic transmitters. The transmitters were placed in the body cavity and thus not visible to the angler. However, all fish implanted with transmitters also had a metal tag placed on their upper jaw so that they were identifiable externally. Anglers will likely continue to see some of these tagged fish in upcoming years and it would be appreciated if they would pass their catch information on to fisheries staff in the Norfolk district office (see contact information at the end of this report). The walleye and sauger movement was monitored by a system of receivers, installed at multiple locations in the river reach and in Lewis & Clark Reservoir, that detect the implanted fish as they pass by them. In addition to general movement data, this study provided location preferences and where these fish are ending up, whether it be remaining between the dams, being harvested by anglers, or entraining through Gavins Point Dam, for example. The study indicated that sauger in the delta tend to stay in the delta and that the Niobrara area was an important spawning area for them. As for walleye, it revealed that female walleye tagged at Ft. Randall use more of the reservoir/river system than their male counterparts, male walleye collected and tagged in the delta exhibited the most movement, and that important walleye spawning areas were the Ft. Randall tailwaters and the Santee bluffs. The study also indicated that walleye/sauger mortality is highest in the summer months.

An additional segment of this study involved monitoring entrainment rates of larval fish through both Ft. Randall and Gavins Point dams. Walleye and sauger entrainment rates were relatively low throughout the study, likely due to the reduced flows over the duration of the project. Lewis & Clark does receive fish entrained through Ft.

Randall Dam but those fish, unfortunately, don't make up for the entrainment losses that the high flow-through Lewis & Clark system experiences. The Ft. Randall:Gavins Point larval entrainment ratio ranged from 1:1 to 1:8 during the four years of the study, meaning on the high end that for every one walleye/sauger coming into Lewis & Clark through Ft. Randall, eight were lost from Lewis & Clark through Gavins Point Dam. It should be noted however, that fewer fish are typically entrained through Ft. Randall Dam not only because Francis Case Reservoir has a much lower exchange rate but also because its outlet through Ft. Randall Dam is much deeper than that of Gavins Point. The most abundant species in the larval samples by far was freshwater drum. They comprised 74-97% of the total larval drift sample collected below Gavins Point through the four year study. Entrainment at the larval stage was the greatest loss of Sander species (i.e., walleye and/or sauger) by number, but entrainment of adult fish was also observed during the study. Four adult male walleye and two adult female sauger were entrained through Gavins Point Dam during the study duration. These tagged fish were either caught by anglers or detected by receivers downstream of the dam.

### **Zebra Mussels and Invasive Species**

Anglers and recreational boaters should continue to be aware of 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 increased exponentially in subsequent years. Their abundance appeared to decline somewhat in 2019 and 2020 but exploded again in 2021 and have been considerably high since. As discussed in previous versions of this report, they seem to be fully established in the system and their population will oscillate from year to year. Some years will be similar to 2021 when they were extremely abundant and others like 2019 and 2020 when low abundance made them barely noticeable. Despite the visibly reduced adult numbers in 2020, plankton net tows conducted around the lake that year still indicated detectable numbers of veligers, the **microscopic** larval stage of the mussel. Lake water containing veligers can be pumped into livewells and outboard motor cooling systems, used to fill bait buckets, spilled in a boat, etc. and potentially result in 1) zebra mussels being unknowingly transferred to another waterbody or 2) them attaching to and growing in the watercraft and/or boat motor and causing various mechanical issues.

South Dakota Game, Fish, and Parks (SDGFP) discovered zebra mussels in both Lake Sharpe and Francis Case Reservoir in 2019 and Oahe in 2023. Additionally, NGPC observed **high** numbers of adult zebra mussels on samplers at the Verdel and Santee boat ramps in 2021, both being locations where they had never been observed prior. Thus, anglers who fish **any** stretch of the Missouri River need to be extra diligent with the Clean, Drain, and Dry protocol prior to leaving associated areas in order to control the spread of zebra mussels. Invasive mussels have also been documented in several other neighboring states including Iowa, Kansas, and Missouri. Zebra mussels are certainly not the only invasive species in Nebraska, or in Lewis and Clark and the Missouri River, so please be diligent and not only drain all water from your watercraft, buckets, etc. but also remove any vegetation. Zebra mussels have been observed attached to vegetation in Lewis & Clark so boaters leaving the lake must be diligent about following decontamination protocols. The water has cleared substantially in Lewis & Clark recently and dense vegetation, including the invasive Eurasian watermilfoil, has become an issue in certain areas, most notably in the bays with boat launch facilities.

Inadvertent transfer by humans is the major source of new infestation for zebra mussels and other invasives, primarily by boats, boat trailers, and fishing gear. 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. 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 trip to transport your fish home.

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.

**NONRESIDENT AQUATIC INVASIVE SPECIES STAMP**

Motorized watercraft registered outside of Nebraska are required to purchase and display an Aquatic Invasive Species Stamp (image on bottom right) before launching from any Nebraska boat ramp.

- The fee for the decal-like stamp is \$18, which includes a \$3 issuing fee.
- The stamp can be purchased at [OutdoorNebraska.gov](http://OutdoorNebraska.gov), at Commission offices (see list on page 2), or authorized permit agents.
- At the time of purchase, the purchaser will receive a valid temporary permit. The actual stamp will be mailed within 10 business days.
- The stamp is required annually.
- The stamp must be permanently affixed to the starboard and rearward side of the boat, on the outside of the hull above the water line. (See image on bottom left.)



The diagram shows a side view of a motorboat with an arrow pointing to a blue square on the starboard side of the hull, above the water line. To the right is a close-up of the 'NONRESIDENT BOAT' AIS sticker. The sticker is blue with a white octagonal center containing the number '25'. Above the octagon is a small box labeled 'No.' and below it is the 'AIS' logo. At the bottom of the sticker, it says 'NEBRASKA' with a small logo and the text '- SAFE - PLEASE -'.

**\*\*\*Boat inspections and zebra mussel sampling will continue at Lewis and Clark Lake, the Missouri River, and other waterbodies in the state in 2025. 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 invasive species such as Asian carp, Eurasian watermilfoil, rusty crayfish, red swamp crayfish, etc. 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](http://OutdoorNebraska.org).

For more information on the fisheries at Lewis & Clark Reservoir contact:

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