Davis Creek Reservoir
Fishery Survey Summary

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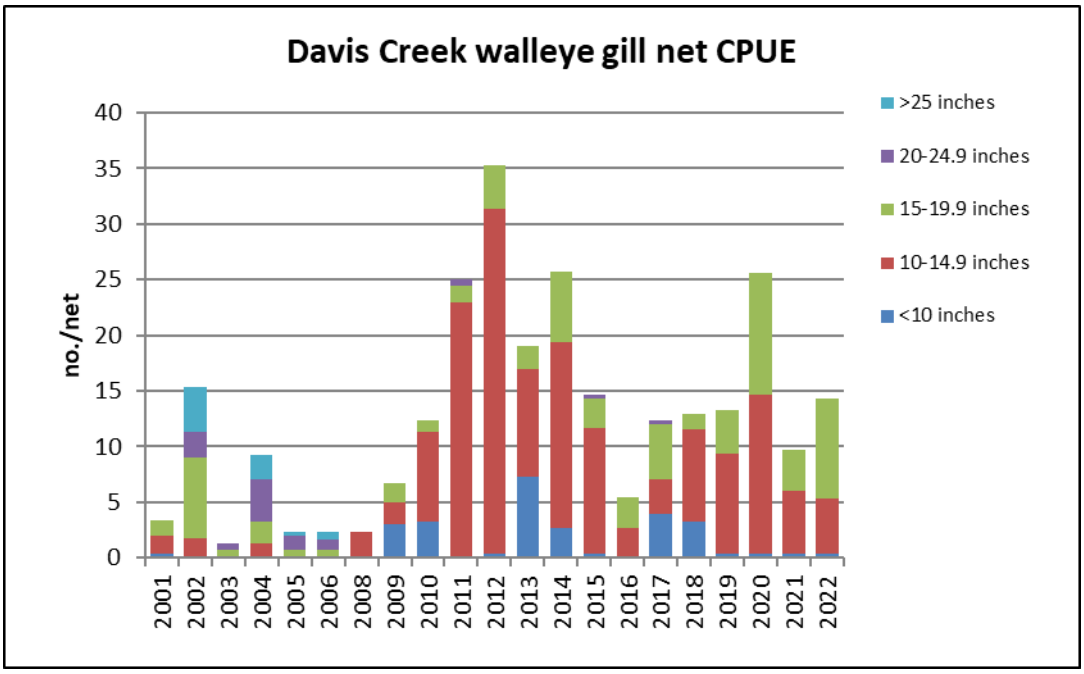
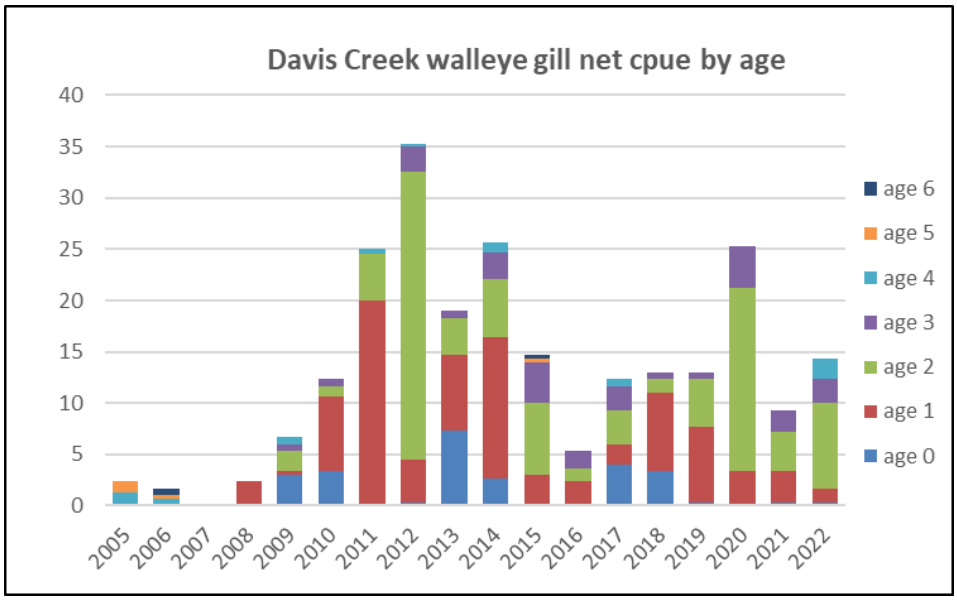
The following text and graphs are the result of netting surveys completed in April (electrofish shad), May (frame nets), and September (nighttime young-of-the-year collections and gill nets) at Davis Creek Reservoir in 2022. For comparative purposes this report shows results from previous sample years. Fish populations are sampled annually at Davis Creek using gill nets, frame nets and electrofishing. Gill nets are used to sample fish species found primarily in open water, such as walleye and white bass, while frame nets are used to sample shoreline oriented species, such as crappie. Electrofishing is conducted for young-of-the-year fish and gizzard shad. Gill nets are used in the Fall and frame nets were switched from a Fall sample to a Spring sample beginning in 2014 due to high variability in catch in the Fall. The following graphs show the mean number of fish caught per net and the relative abundance of fish within several length categories. The text provides a brief explanation of the information shown in the graphs. A fish stocking summary is presented on page 7 of this report. Daytime electrofishing surveys for shad in April provides data on population levels prior to shad spawning season. Gizzard shad are a very important prey fish in Davis Creek and winterkill of shad can be an issue. If adult numbers are low, shad will be transferred from Calamus Reservoir.

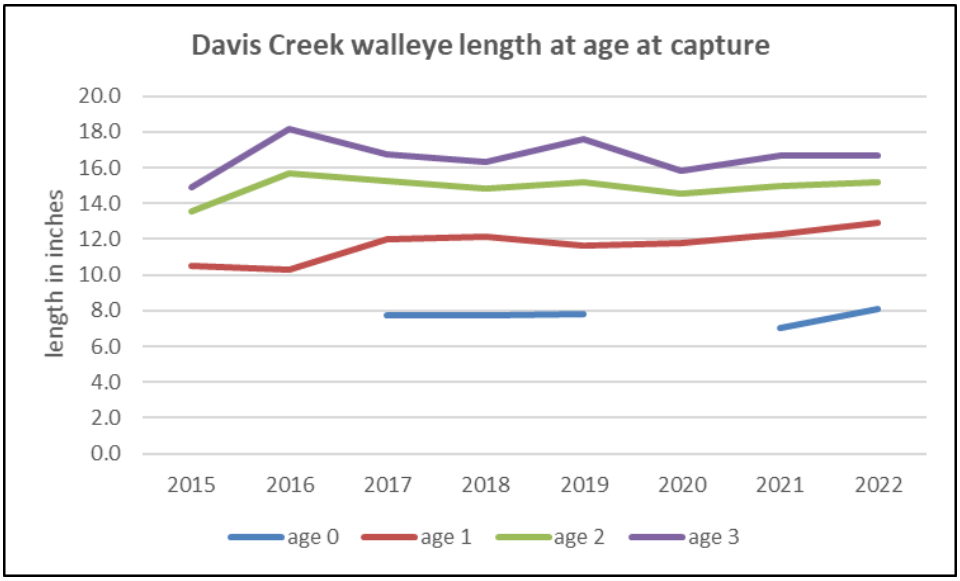
Walleye



Walleye net catch was up from the 2021 catch and just under our target objective level of 15-20 per net. The 2022 sample is more in line with the trend in net catch prior to the shad winterkill in 2015-16. Legal sized fish (>15 inches) made up about 60% of the sample in 2022 and it is similar to the number per net of legal fish seen in 2020. Most walleye collected at Davis Creek are 3 years old and younger. Extreme fishing pressure and extreme harvest does not allow fish to live long enough to attain larger size or greater age. However, angling success and therefore fishing pressure and harvest was down in 2022 due to the lake filling early in the fishing season. The reduction in harvest for one year did allow better walleye survival to another year as illustrated in the graph below where some 4 year old fish are present. As with most years, no fish over 20 inches were collected in the survey. Walleye recruitment and growth appears to be

adequate and sustainable. Anglers should find better success on walleye in 2023 than seen in 2022, again depending on lake water levels. Efforts for walleye management will center around maintaining recruitment and insuring adequate prey numbers. The management philosophy at Davis Creek is to have a lake where we hope to maintain high walleye recruitment rates and cycle fish through to the angler for harvest on a sustained annual basis. Walleye in Davis Creek are reaching 15 inches in about 2 1/2 growing seasons. In 2023 fisheries staff will index adult shad numbers in the Spring to ensure spawning fish are present and a sufficient prey base will be produced. Stocking plans in 2023 include 1.1 million walleye fry and 57,250 walleye fingerling.

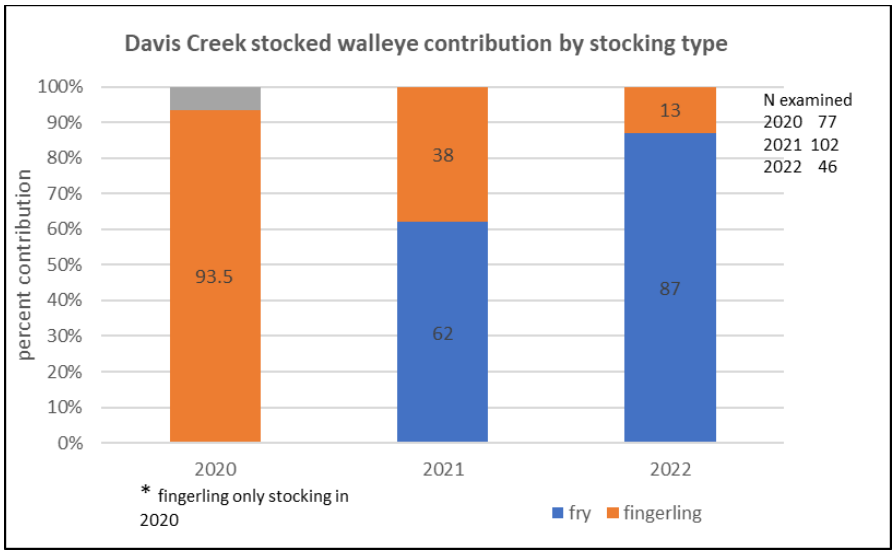


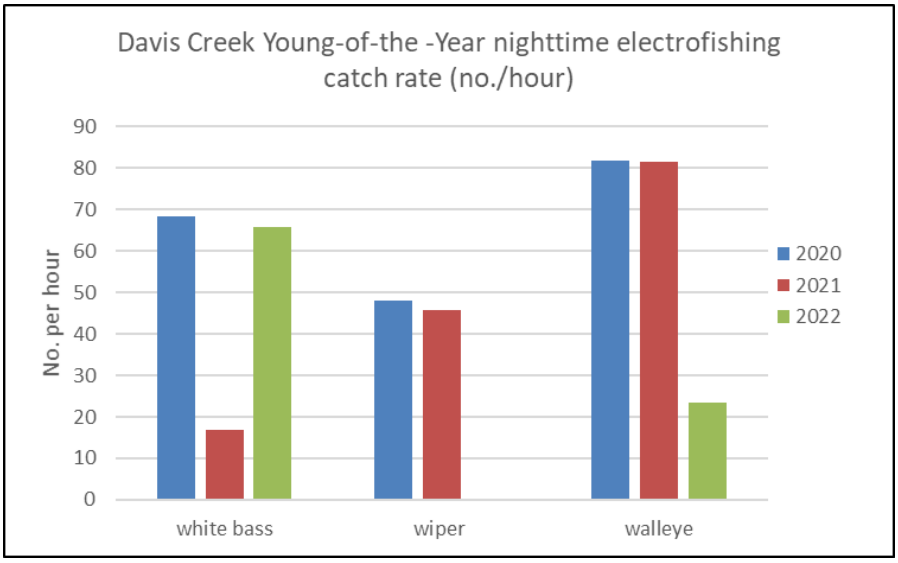


Walleye Recruitment Evaluation in 2022.

Nighttime electrofishing was conducted in 2022 to gather information on relative density of walleye young-of-the-year (YOY) and to determine contribution of stocked fish by stocking strategy (fry or fingerling). The fingerling stocked walleye contained a chemical mark located in the otolith or “ear stone” of the fish. By

examining the otoliths under a specialized scope, we were able to identify marked fish and determine which stocking strategy contributed fish. In 2022 fry stocked fish contributed 87% of those collected and analyzed while fingerling stocked fish made up 13%. As indicated in the graph below, fry stocked walleye have accounted for the majority of fish collected in September. In 2020, only fingerling fish were stocked and marked which allowed us to determine if any natural recruitment was occurring. It appears natural recruitment of walleye is very low or non-existent. Walleye YOY were collected at a rate of 23.5 per hour and most were 5-6 inches long at the time of sampling in mid-September. The 2022 walleye catch rate was less than the last two years and this might be due to a later sampling date. This evaluation of fry vs fingerling stocked fish will continue for another 3 years.



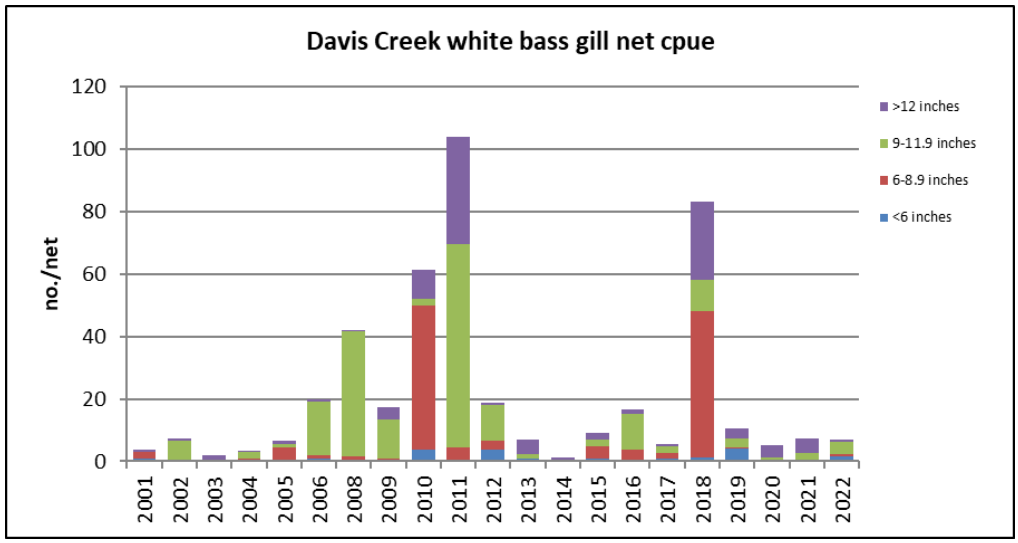


White Bass

White bass numbers in the gill net sample was nearly identical to that seen in 2021 and nearly on the previous five year average of 7.7 per net (not including 2018 data). The 2022 gill net catch was more in line with those seen in 2013 through 2017 and again in 2019. Other than years when it seems every white bass in the lake swims into our nets, white bass gill net catch rates tend to be in the range of 5-10 per net and are pretty consistent.

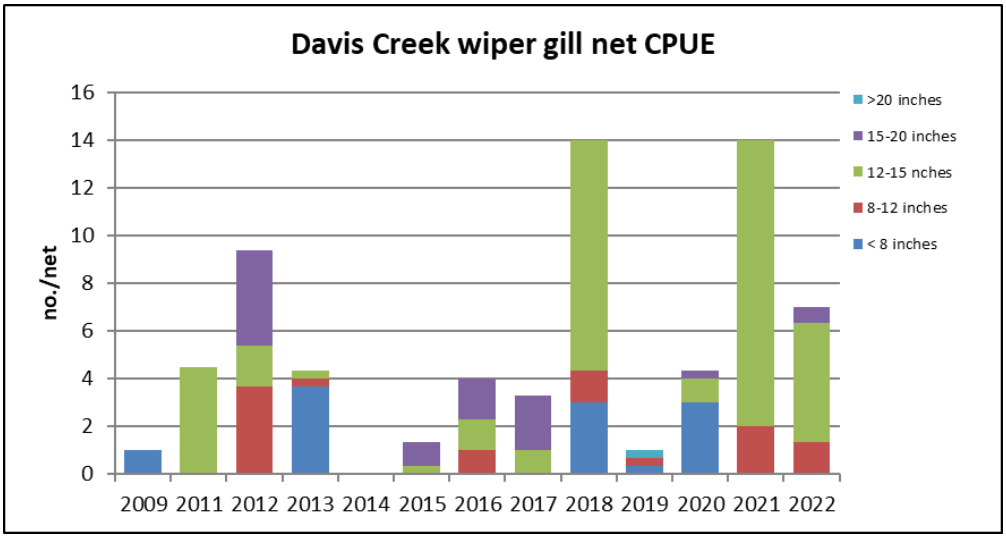
Anecdotal information and angler contact indicates white bass are numerous in Davis Creek but do not always show up in the net survey. Schooling white bass were very evident when young gizzard shad were bunched up in late May and early June. White bass are a schooling fish and can be hit or miss with nets. White bass natural reproduction was quite good two of the last three years (see above graph). Fall nighttime electrofishing catch rate decreased to 17 fish per hour in 2021 compared to 68 per hour in 2020. It should be noted that the relatively high catch rate of small white bass in 2020 and 2022 did not manifest into higher gill net catch. The majority of the YOY white bass collected in late-September of 2022 were 4-5 inches long at the time of capture. Natural reproduction is driving the recruitment of white bass at Davis Creek.

Anglers will find white bass success similar to the past few years with the inlet area in the springtime a good bet. Young-of-the-year white bass data collections will continue for the next three years in conjunction with the walleye stocking evaluation.



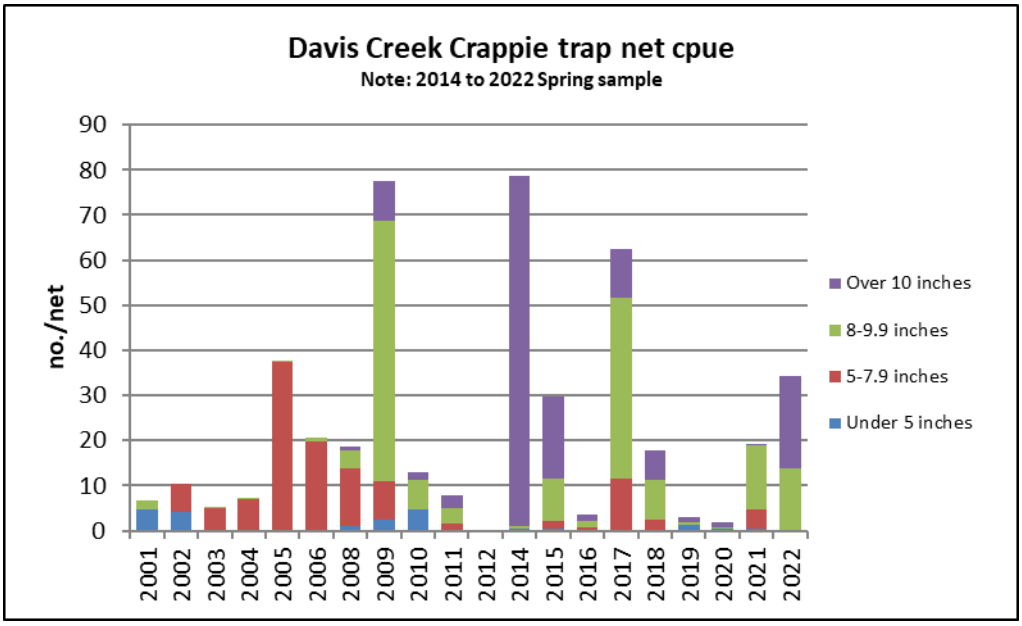
Wipers

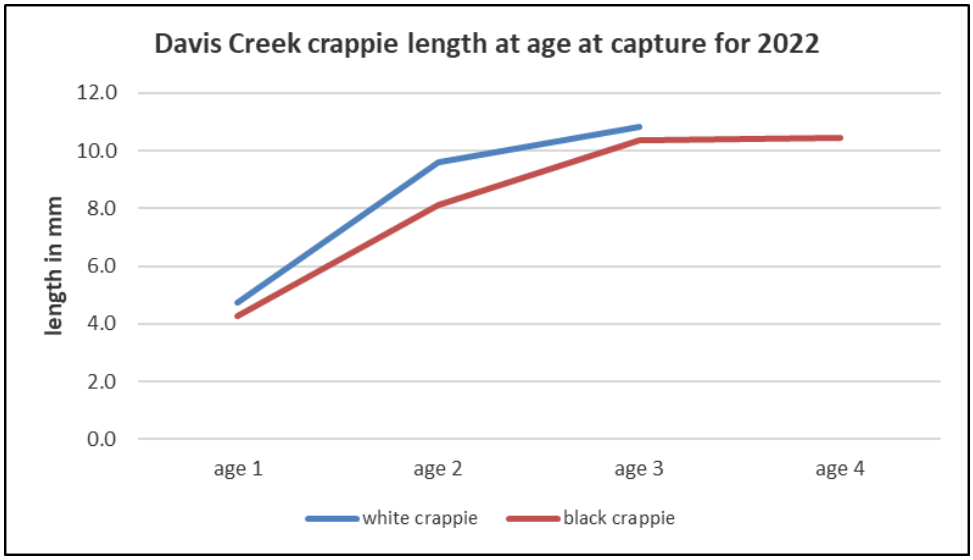
Wiper numbers in Davis Creek continue to be somewhat inconsistent in our survey data, which can be typical when trying to sample this pelagic species. The gill net catch rate in 2022 of about 7 per net is right on the previous 5 year average. The 2022 catch rate was the fourth highest dating back to 2009. Some larger fish are present once again which can make for some exciting angling opportunity. Wipers were not stocked at Davis Creek in 2022 due to poor survival in the hatchery system so the sub-12 inch fish are either slow growing fish from the 2021 stocking, fish that have come down from Calamus or just plain misidentified. Anglers are aware that some quality sized wipers exist in the lake but numbers are relatively low. Young-of-the-year (YOY) wipers have been collected by electrofishing gear at rates of 40-50 fish per hour which indicates our stocking is surviving well. As you can see from the above young-of-the-year graph, no small wipers were collected in the YOY sampling in 2022. We will continue to request wipers for stocking on an annual basis to maintain a fishable population for anglers to enjoy. The wiper request for 2023 is 11,450. **Anglers are reminded that only one white bass/wiper over 16 inches is allowed in the daily bag limit.** Problems are encountered at the inlet area in the Spring when anglers were violating the “one over” part of the daily bag limit for wipers. Please report all violations to the local Conservation Officer whose name and number can be found in the fishing guide.



Crappie

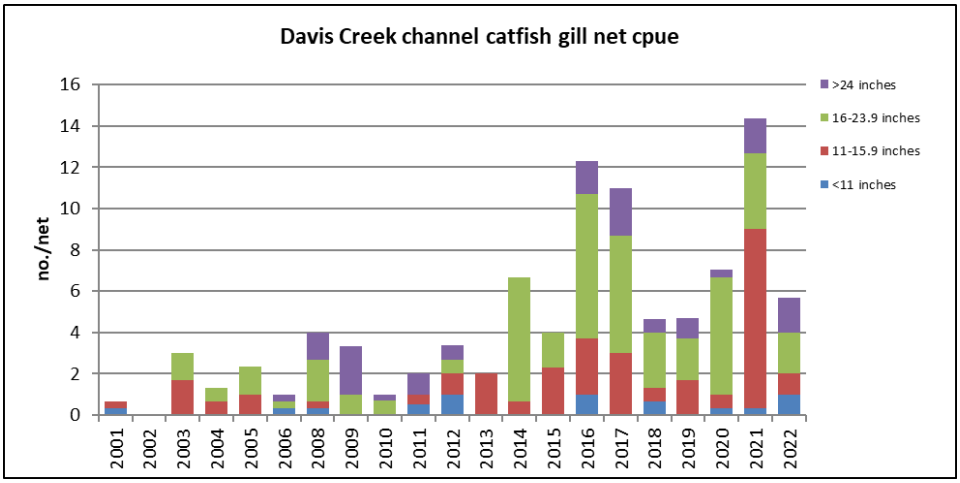
Crappie are sampled with shoreline frame nets in May. Water temp and lake elevation are crucial to getting a good sample. The last two years crappie numbers have been on the upswing and 2022 was one of the better years. Not only did the catch increase to 35 per net, over half the fish sampled were 10 inches or more in length. The increase is due to fish from the 2018 to 2020 year classes which appeared to be quite strong. In addition, fingerling black crappie were stocked in 2021 and 2022. Due to strong crappie numbers no black crappie will be stocked in 2023. We will continue to monitor the crappie populations and determine if future stocking is necessary. Past data shows that Davis Creek crappie growth rates are very good and crappie fishing can be excellent when numbers are higher. Natural reproduction in recent years has been somewhat sporadic and we may need to improve crappie recruitment at times through supplemental stocking. We try to sample crappie the same time of year with closely similar water temperatures but it is difficult to duplicate exact conditions from year to year. Age analysis from the 2022 sample show that for black crappie the 2018 and 2019 year classes were very good and for white crappie the 2019 and 2020 year classes were excellent. Look for good crappie fishing at Davis Creek in 2023.





Channel Catfish

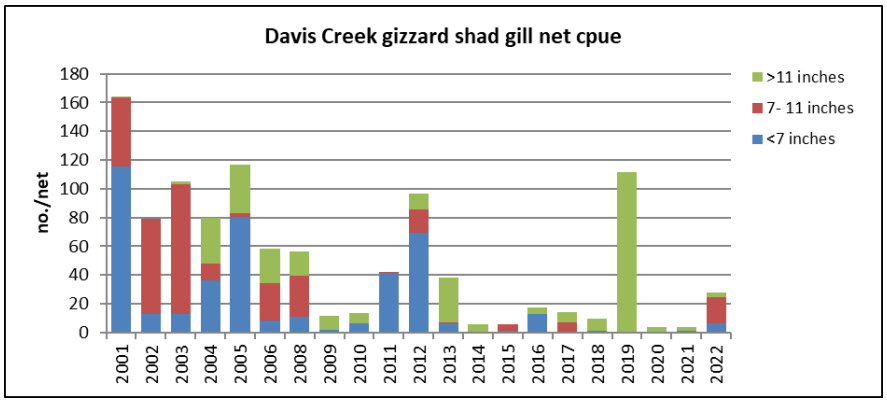
Channel catfish abundance has historically been low at Davis Creek Reservoir but recently population levels have been on the increase. While the gill net catch in 2022 declined from 2021 to near levels seen in 2018 to 2020, population levels remain strong with some large sized fish sampled. It is common to see catfish 30 inches and larger during the Spring electrofishing shad survey near the inlet. Stocking that began in 2012 appears to be paying off in terms of higher catfish numbers seen from 2014 through 2022. Channel catfish are stocked as ten-inch fish in late summer on an every-other-year basis during even numbered years. Body condition for catfish is good, especially for the larger sized fish. Anglers are reminded that the daily bag limit for channel catfish is five fish per day. The next stocking is scheduled for 2024 and 5,500 ten inch fish are requested.



Gizzard Shad

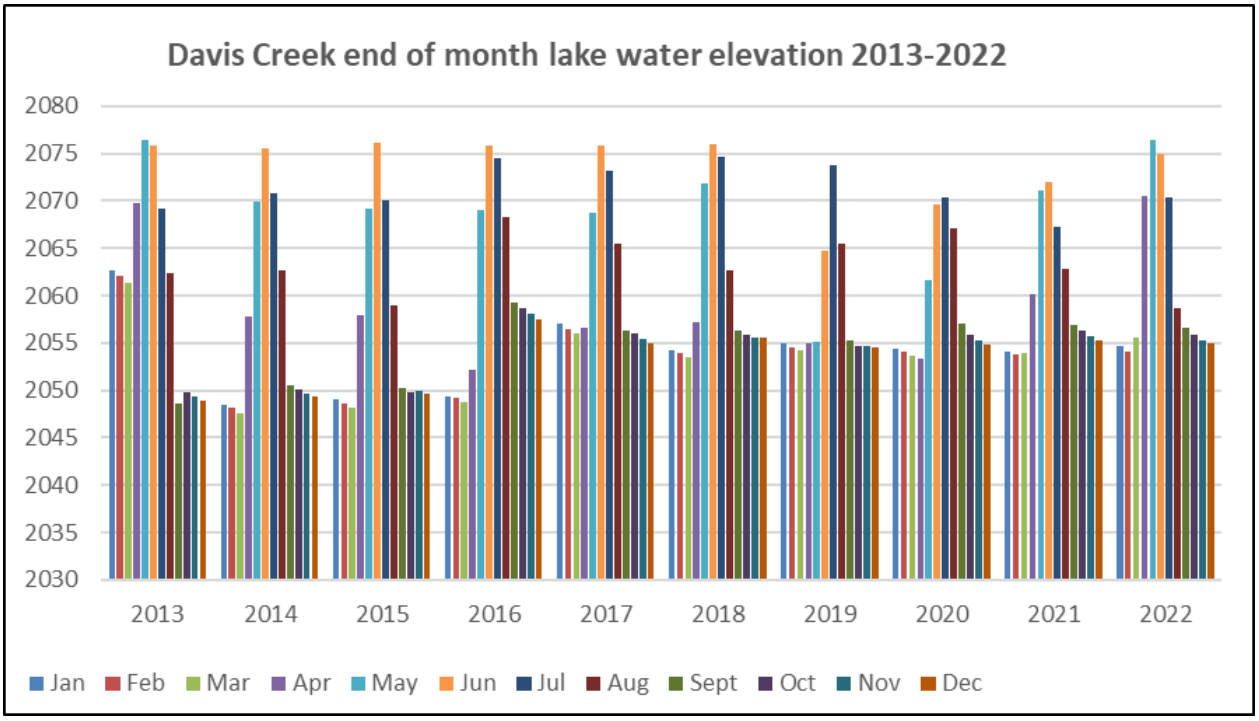
The gizzard shad population is monitored because they serve as the primary food source for walleye, white bass, crappie and wipers at Davis Creek. Shad abundance in the 2022 gillnet sample was higher than the past couple years and is in the desirable range. Anecdotal information indicated good numbers of young-

of-the-year fish were produced in 2022 that should have provided an excellent food supply for the sport fish. Early spring sampling in 2022 indicated adequate numbers of spawning sized adult shad were present. A preferred gizzard shad population is one dominated by young-of-the-year fish with moderate adult numbers. Sport fish survival, growth rates and body condition decrease if abundant young shad are not available. The high numbers of shad seen in the lake prior to 2009 was prior to the annual stocking of predator fish species. Shad are being successfully used as the prey source for sport fish species.



Reservoir Water Levels

Reservoir water level management in the spring of 2022 was somewhat different than most years. Levels increase rapidly in April with end of month elevation about 10 feet higher than the previous eight years. Likewise water levels in May were 5-7 feet higher than previous years. Overall Spring months water levels were considerably higher that the previous 3 years. It is believed the higher Spring water levels resulted in the fish populations being less concentrated during the peak fishing season and led to reduced angler catch rates for some species, particularly walleye. Winter levels remain several feet over those seen prior to 2015 and the evaluation of higher winter reservoir levels is ongoing by Twin Loups Irrigation District. Higher winter reservoir levels are beneficial to fish populations.



Additional Information about Davis Creek Reservoir

Fish Stocking

Walleye have been stocked annually from 2009-2022 at a rate of 50 fingerling per acre or about 60,000 per year and beginning in 2018 an additional annual stocking of walleye fry was added. Due to Covid-19 shutdowns, only fingerling walleye were stocked in 2020 which allowed the evaluation of any natural recruitment. Wipers have been requested annually since 2010 but were only available for stocking in 2010, 2013 and 2015–2021. Wipers are requested for stocking at about 10 fingerling per acre or about 11,000 fish. Channel catfish supplemental stocking began in 2012 and will be conducted in even years at 5,500 ten-inch fish. Fish stocked in 2022 were 58,520 walleye fingerling, 1.1 million walleye fry, 5,500 ten-inch channel catfish and 209,813 black crappie. Fish requested for 2023 stocking are walleye (fry and fingerling) and wipers.

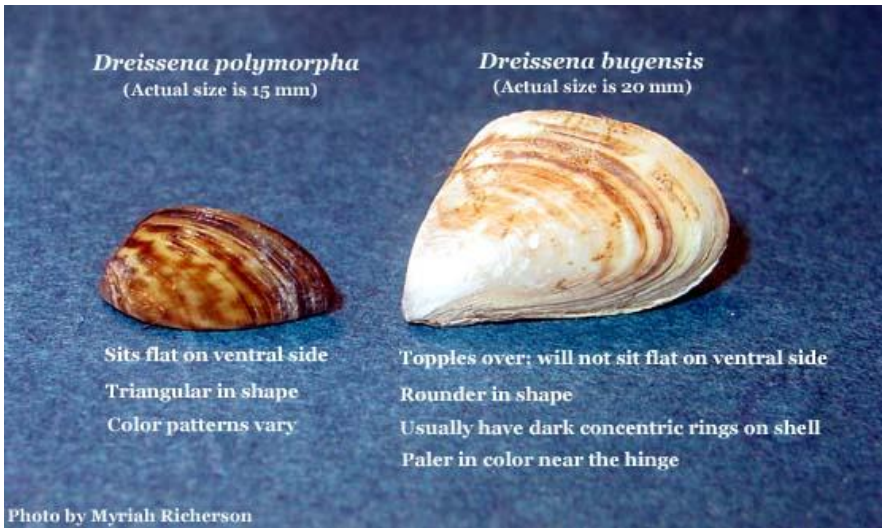
Zebra & Quagga Mussels

Anglers and boaters need to be aware of zebra and quagga mussels while using Nebraska Lakes. While no mussels have been identified at Davis Creek Reservoir, zebra mussels have been found in Lewis and Clark Lake on the Missouri River, have now been found in high numbers in Lakes Sharpe and Francis Case in South Dakota, and are present in several reservoirs in Kansas. Monitoring was completed at several Nebraska reservoirs during 2022, including Davis Creek Reservoir, and no evidence of mussels were found at Davis Creek. An aquatic invasive species inspection technician will periodically be contacting boaters and anglers at Davis Creek in 2023. We appreciate your patience and participation with these inspections and ask for your help to please Clean, Drain, and Dry and stop the spread of invasive species! If you find any organism that you think may be a zebra or quagga mussel please contact the Norfolk Game and Parks office or contact your local conservation officer to report the finding.

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/

****Special Note to Boat Anglers**—>**As of January 1, 2013, new regulations require that any boat that has been on a waterbody must drain all water from all compartments, equipment, or containers before leaving the launch area and that all aquatic vegetation must be removed from the boat and trailer before leaving the launch area. Boats will not be allowed to launch without decontamination if water is found in the boat or livewells. More information on aquatic invasive species, including regulations can be found at the Game and Parks website at http://outdoornebraska.gov/aquaticinvasivespecies/



For additional information about fisheries management at Davis Creek Reservoir, please contact the NGPC Norfolk office at 402-370-3374, or by email at the addresses listed below.

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