Davis Creek Reservoir

Fisheries Update - Spring 2025

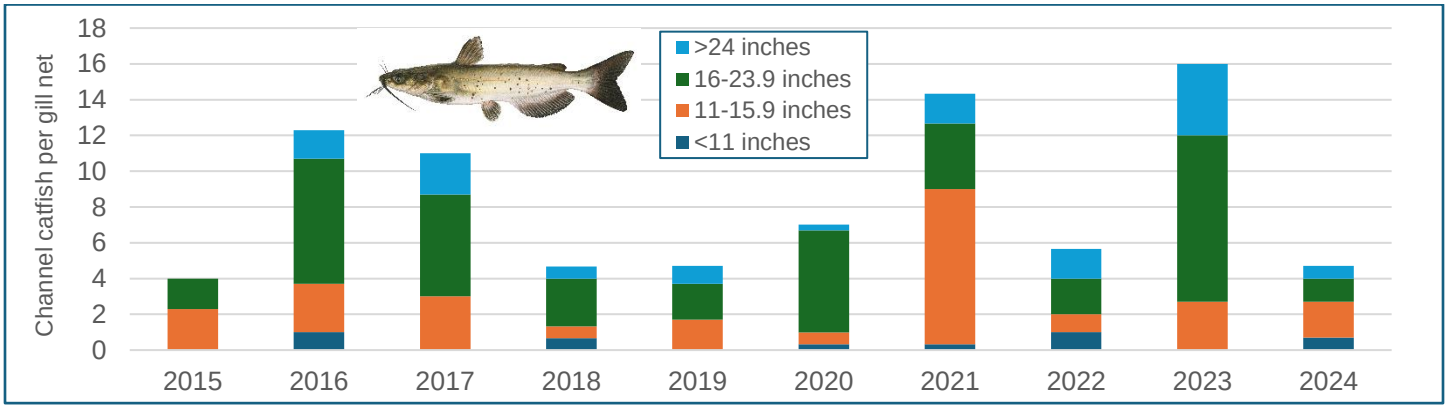
Brad Eifert, South-Central District Manager

Davis Creek is a 1,140-acre irrigation reservoir located in Valley County. Completed in 1991, Davis Creek was the last large irrigation reservoir project constructed in Nebraska. Water from the North Loup River and Calamus Reservoir is diverted into Davis Creek via the Mirdan Canal resulting in approximately 30,000 acre-feet of irrigation storage water. Davis Creek has numerous coves that result in nearly 24 miles of undeveloped shoreline. Maximum depth of the reservoir is approximately 88 feet. The reservoir project is owned by the Bureau of Reclamation (BOR) and the Twin Loups Irrigation District is responsible for operation and maintenance of the reservoir and irrigation delivery infrastructure. The Lower Loup Natural Resources District (LLNRD) oversees recreational amenities on the 157-acre recreation area that has two boat ramps with courtesy docks, a fish cleaning station, fishing dock, modern restroom facilities, and full electrical camping sites. The Nebraska Game and Parks Commission (NGPC) has fisheries management responsibilities and also manages 2,100 acres of land surrounding the reservoir as a wildlife management area. Additional information regarding recreational facilities and camping at Davis Creek can be found on LLNRD's website. Information regarding wildlife and fishing resources can be found on NGPC's website.

Nebraska Game and Parks Commission uses standard sampling methods to monitor the status of fish populations in Nebraska waters. At Davis Creek, gill nets are used to sample open-water fish species such as walleye and hybrid striped bass, while trap nets are used for shoreline-oriented fish such as crappie. Annual netting surveys are completed at approximately the same dates and locations to reduce variability and allow for trend comparisons of species abundance and size distribution.

The following pages contain graphs and text that summarize fish surveys completed at Davis Creek. Graphs show the total number of fish caught per net and the relative abundance of fish within several length categories. The text provides brief explanations of the information contained in the graphs. In most cases, results are included from the last 10 years.

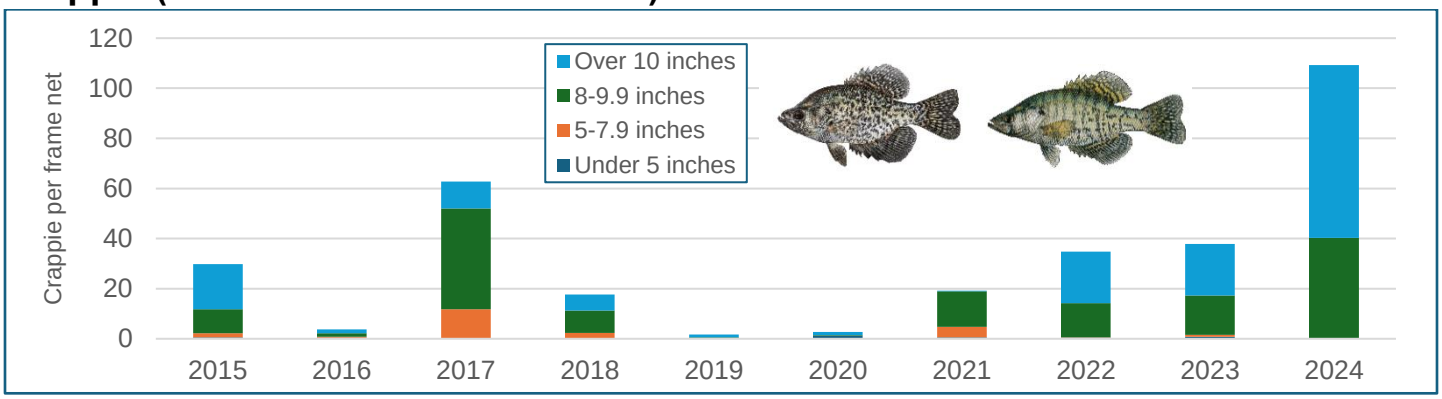
Channel Catfish



Channel catfish catch has ranged from 4 to 16 fish per net during the past ten years and the average catch is 8.4 fish per net. Although the 2024 catch was lower than average, fish of all size groups were sampled. Catfish ranged in size from 10 to 28 inches and had an average length of 16.6 inches. Davis Creek provides anglers a good opportunity to catch large catfish, as fish over 24 inches are commonly sampled. Supplemental stocking of catfish occurs on alternate years (even years) to improve abundance and help maintain a quality fishery.

Regulations allow the harvest of five channel catfish per day at Davis Creek with only one fish greater than 30 inches in the daily bag limit.

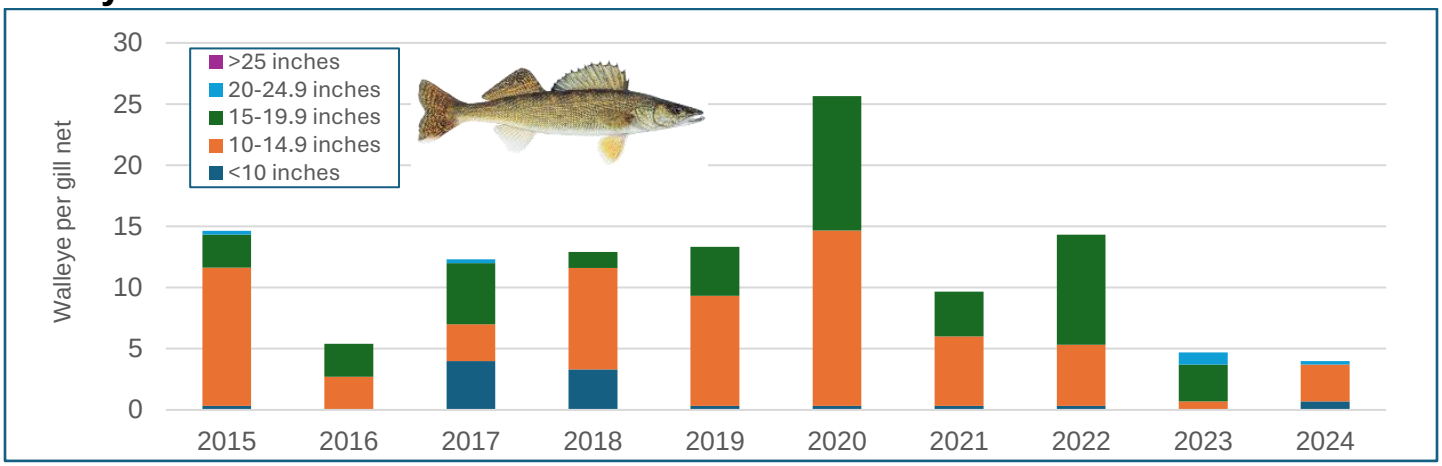
Crappie (Black and White Combined)



Crappie abundance has been on an upward trend since 2021 and the catch in 2024 was the highest documented in the history of sampling at Davis Creek. There were 109.25 crappie per net sampled during the spring 2024 survey, well surpassing the ten-year average of 32 fish per net. Davis Creek contains both black and white crappie, but whites comprised about 80% of the sample. Lengths of crappie caught during the survey ranged from 8 to 12.5 inches and the average crappie length was 10.0 inches. In total, 63% of the crappie sample was greater than 10 inches and 5% were larger than 12 inches. Spring sampling for crappie is biased toward adult spawning fish, therefore the catch does not document juvenile fish accurately. Successful crappie recruitment at Davis has been sporadic throughout the years due to variable water levels, but a strong 2021 year-class is providing most of the large fish in the current population. Stocking has been used in recent years to help improve abundance and will be considered again in the future if sampling results indicate a need. No crappie fingerlings are scheduled for stocking in 2025.

Crappie angling was excellent in 2024 and success should continue to be very good in 2025 as both abundance and average size appear higher than average. Crappie are regulated under Statewide regulations at Davis Creek with a 15 fish daily bag limit.

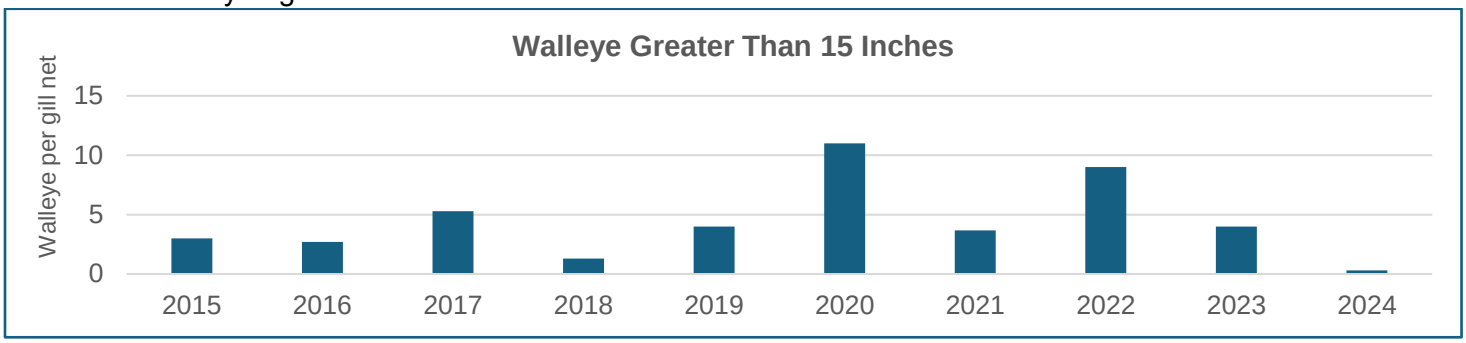
Walleye



Excluding the 2022 catch, walleye abundance has been on a declining trend since 2020. The ten-year average catch is 11.7 walleye per net and catch in 2024 dropped to a ten-year low of 4 walleye per net. The decline can be contributed to poor walleye recruitment in the 2021 to 2023 time period. High angling mortality also impacts abundance, especially for fish larger than 15 inches. Lengths of walleye sampled in 2024 ranged from 7 to 21 inches, but most of the catch consisted of age-1 walleye that were 11 to 13.5 inches. Most of this 2023 year-class should reach harvestable size during the summer of 2025. Recruitment in 2024 looks promising as several age-0 walleye were sampled in gill nets and fair numbers were observed while sampling in September with electroshocking gear.

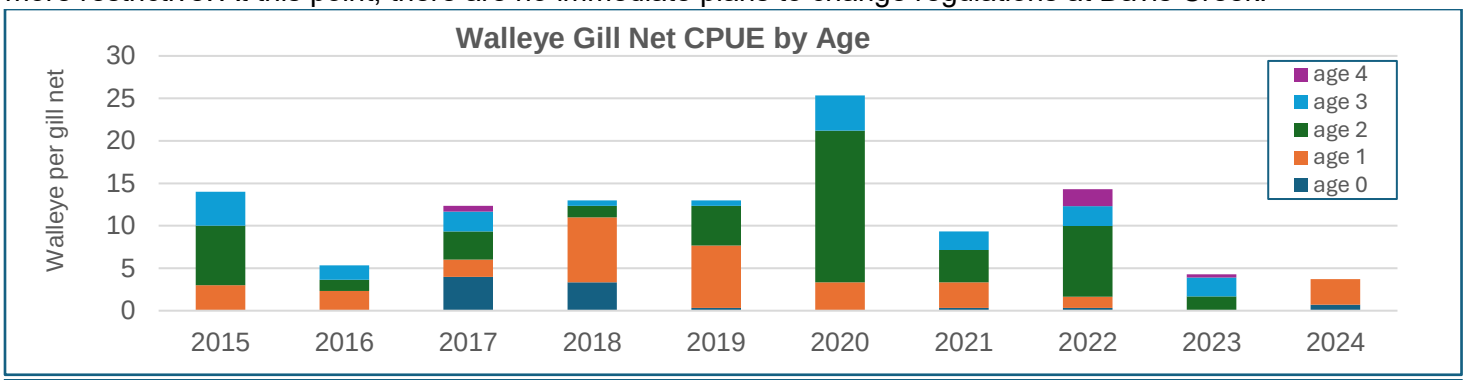
Walleye (continued)

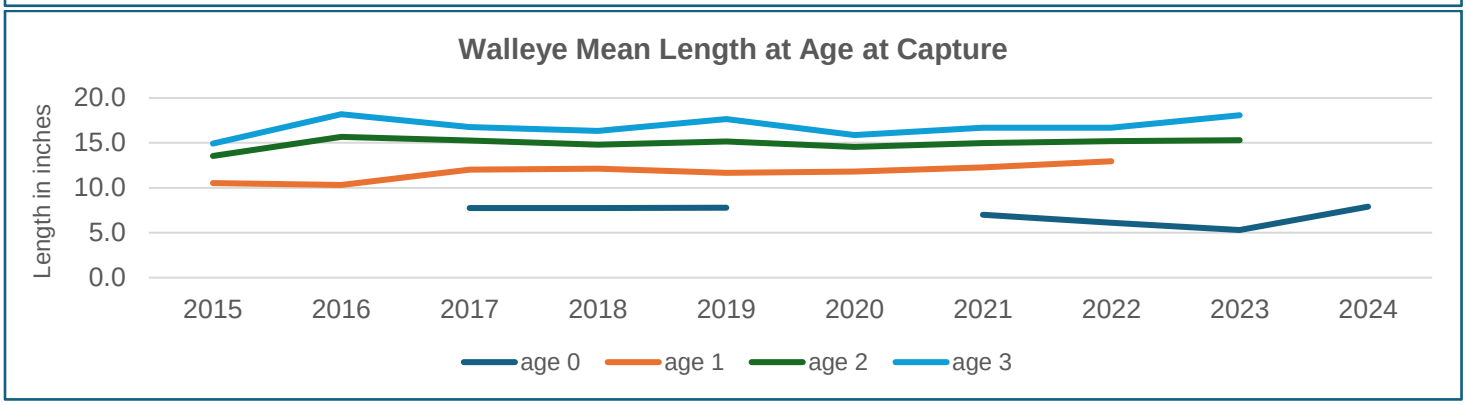
Walleye greater than 15 inches (legal harvest size) was the lowest sampled in the past ten years. The 2024 catch was 0.3 walleye per net, which is well below the ten-year average catch of 4.4 walleye per net. This low catch is a combination of two years of poor recruitment and high angler mortality. As was seen in 2024, angling success will likely be impacted in 2025 due to lower abundance of harvestable sized fish. Walleye regulations for Davis Creek allows the harvest of four fish greater than 15 inches with no more than one greater than 22 inches in the daily bag limit.



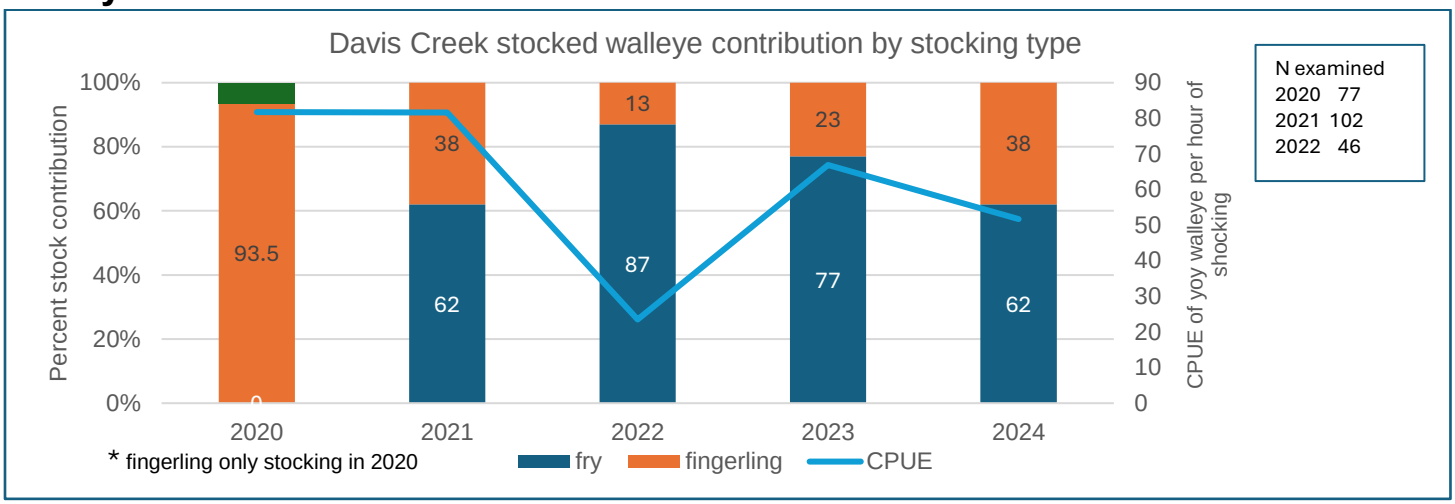
The walleye management strategy at Davis is to maintain high recruitment rates and cycle fish back to the angler for harvest on a sustained annual basis. Assuming recruitment remains consistent, there are plenty of small walleye available each year to replace the ones that are harvested. Gizzard shad abundance also plays an important role and when small shad are plentiful, walleye grow quickly, reaching 15 inches in 2.5 growing seasons. Unfortunately, we do always see consistent walleye recruitment and occasionally shad populations crash. When this happens, we end up with a situation like we are currently experiencing; smaller walleye year-classes and declining catch rates for anglers.

Davis Creek also sees high angler harvest on walleye which can greatly impact the abundance of fish larger than 15 inches. Historically, Davis Creek has not seen many walleye older than age-3 in the population as harvest rates are high enough to annually remove most of the legal fish from the population. If anglers desire larger walleye in Davis Creek, harvest rates will likely need to be reduced by making length limits and/or daily bag limits more restrictive. At this point, there are no immediate plans to change regulations at Davis Creek.



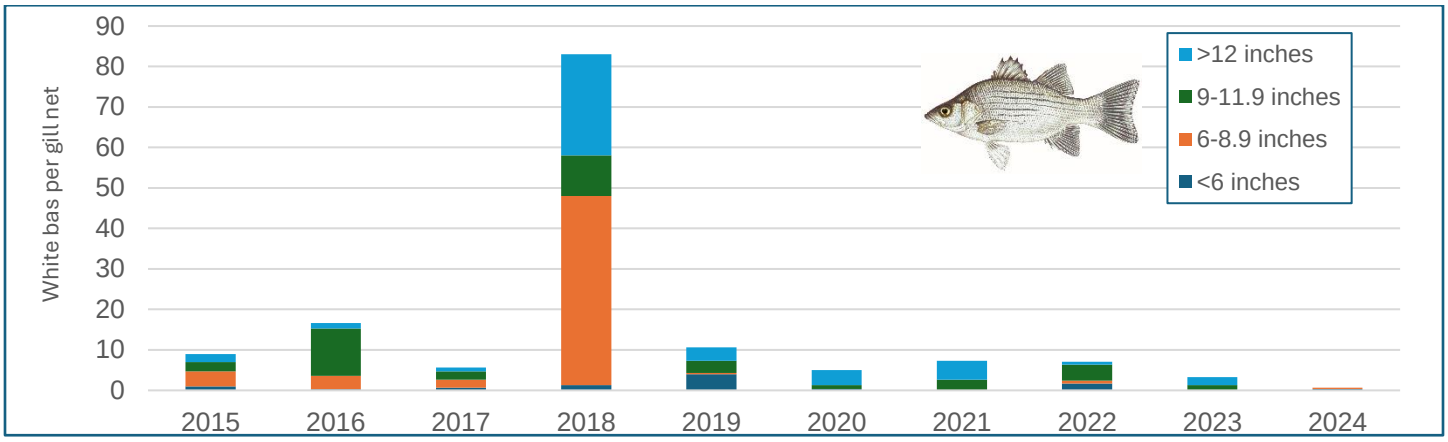


Walleye Stock Contribution and Recruitment Evaluation



Since 2021, both fry and fingerling walleye have been stocked into Davis Creek. To determine contribution of each stocking strategy, an evaluation has been ongoing that analyzes the otoliths from young-of-the-year walleye collected in the fall to determine their stocking origin. Oxytetracycline is used to uniquely mark fry and fingerlings in the hatchery to distinguish the two stocking types. Age-0 walleye are then sampled each fall utilizing night electroshocking to determine relative abundance and to collect fish for otolith examination. In the four years of the study, fry stocking has contributed 62 to 87 percent of the annual walleye year-class. Natural reproduction is low or non-existent at Davis Creek and is therefore not a significant contributing factor to walleye abundance. Evaluations will continue for the next several years to determine which stocking strategies work best for improving walleye recruitment at Davis Creek.

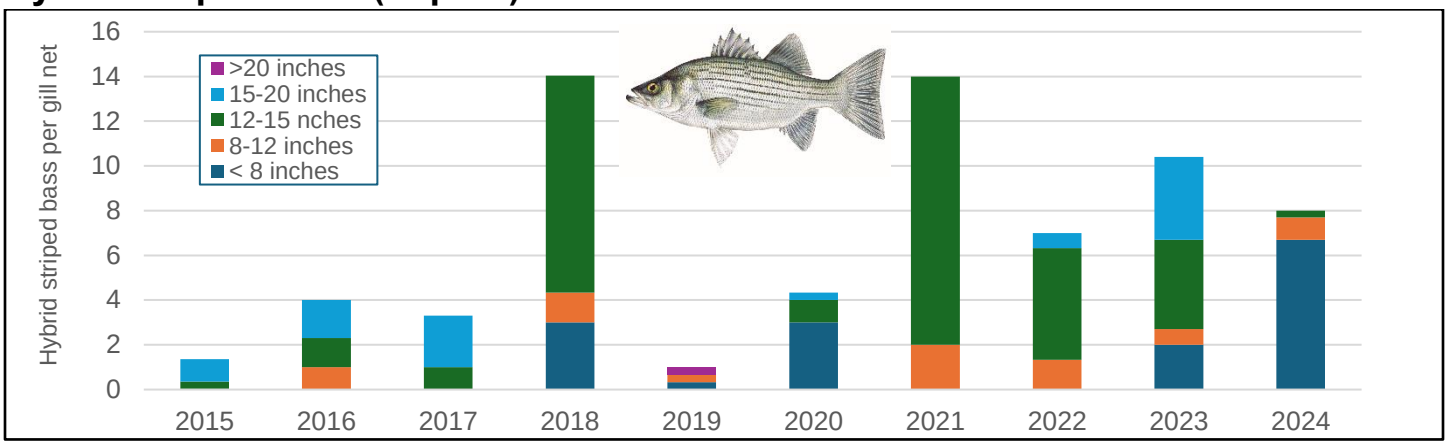
White Bass



Besides a large catch in 2018, white bass catch has normally been less than 10 fish per net over the past ten years. Catch the past two years has been lower than average and declined to less than one fish per net in 2024. The white bass collected in the latest netting survey were all young-of-the-year fish. Electroshocking in the fall also revealed good abundance of age-0 white bass. The presence of these young fish will hopefully contribute to better white bass angling in future years. Due to their schooling nature, white bass can be sometimes hit or miss in gill nets, so the possibility does exist that sampling efforts may have missed the adult population in 2024.

Anglers may see reduced white bass success in 2025, with the inlet area during the spring months as the best location for success. There is a 15 fish daily bag limit on white bass/hybrids and only one fish larger than 18” can be included in the daily bag limit.

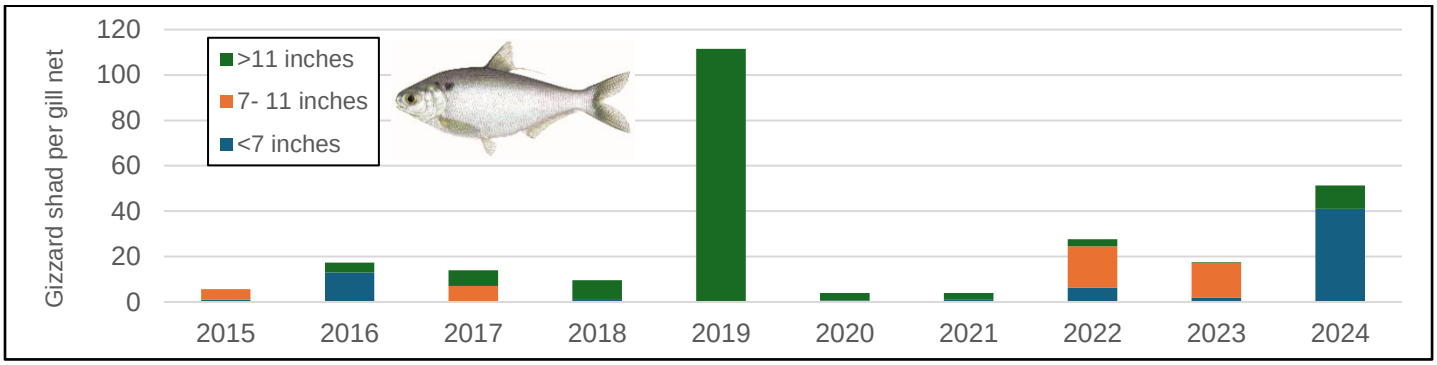
Hybrid Striped Bass (Wipers)



Hybrid striped bass catch has remained consistent the past four years and the catch of 8 fish per net in 2024 indicates that abundance remains good. Hybrid bass lengths in the survey ranged from 6 to 14 inches and the average length was 7.5 inches. Most of the catch consisted of age-0 hybrids and only one other age class (age-1) was represented. As with white bass, hybrids can also be difficult to accurately sample due to the schooling nature of adults. Regardless, it does appear that hybrid average size is less than average. High fishing mortality is likely a factor in the low abundance of larger adults. High abundance of age-0 fish should help to improve angling success in future years.

Current regulations at Davis Creek allow the harvest of 15 hybrids/white bass per day, but only one fish may be larger than 18 inches in the daily bag limit. In recent years, numerous violations are reported at the inlet area for anglers keeping too many hybrids over the maximum length limit. Anglers are encouraged to know the regulations and please report all suspected violations to the local conservation officer.

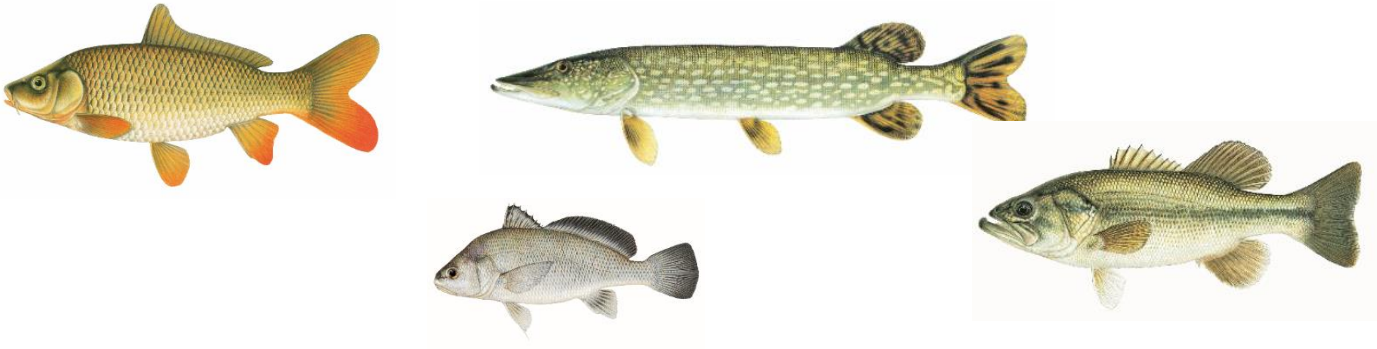
Gizzard Shad



Gizzard shad abundance is closely monitored as they are the primary prey source for sportfish species found in the reservoir. Preferred gizzard shad populations contain low abundance of adults and high abundance of young-of-the-year fish. Successful shad recruitment ensures a suitable food source for newly stocked and hatched predators, as well as adult predators later in the summer and fall. Due to quick growth rates, shad quickly outgrow the gape limitations of most predators by age-1. Fortunately, we see high annual mortality of small shad, especially during the winter months as they are not a cold tolerant species. In severe winters, mortality of adult shad can also be high, which can impact future recruitment the following spring. Fisheries staff annually samples adult shad in April to determine if populations are high enough to create a successful year-class. When adult abundance is deemed too low, adult shad are restocked from nearby Calamus Reservoir to bolster abundance. Shad production was poor in 2023 resulting in reduced recruitment of walleye, white bass, and hybrids. Body condition of adult fish was also found to be lower than normal. Sampling in 2024 indicates excellent reproduction, as young-of-the-year shad numbers were the highest documented in the past ten years. This has translated to better body conditions of large predators and improved survival of age-0 sportfish.

Other Species

Besides the five sportfish species mentioned in this document, several other fish species are common in Davis Creek. Common carp are extremely abundant and provide ample opportunities for anglers who prefer to seek them. Most range from 15 to 20 inches. Freshwater drum are also very abundant, and while they are often considered a nuisance by anglers who fish live bait, they can provide good angling action when other species are not cooperating. Drum seldom seem to get larger than 12 inches at Davis. Northern pike and largemouth bass are also present in low abundance, with pike sampled in the spring of 2024 ranging from 21 to 28 inches. No sampling was completed for largemouth bass at Davis in 2024.



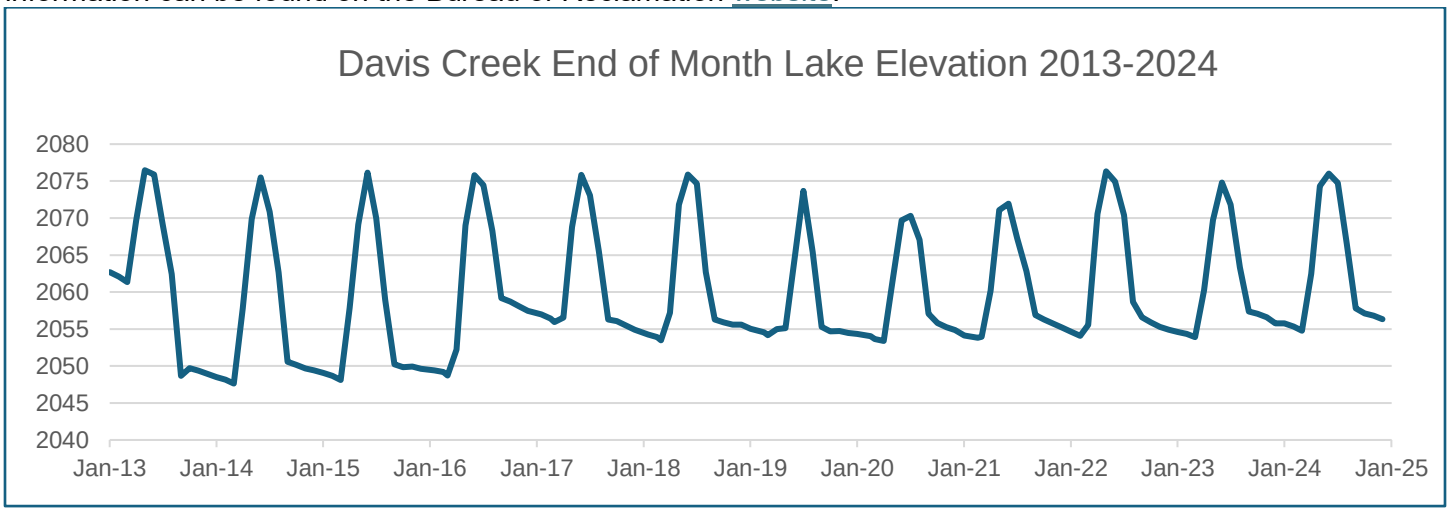
Fish Stocking

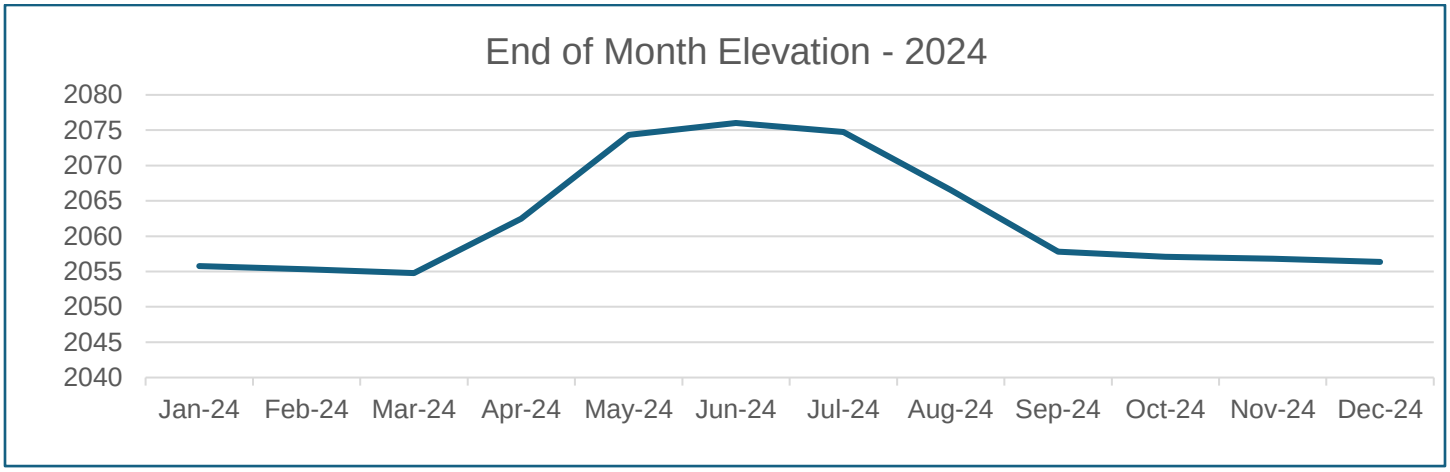
The table below shows fish that have been stocked into Davis Creek during the past five years. Walleye and hybrid striped bass are requested annually. Channel catfish are currently stocked on an alternate year basis with the next stocking scheduled for 2026. Black crappie were stocked in 2021-22 to improve abundance and future stocking will be done as needed. Gizzard shad were stocked in 2023 to bolster adult numbers following a severe winter that resulted in high shad mortality. Walleye fry and fingerlings and hybrid striped bass are the only species scheduled to be stocked in Davis Creek during 2025.

Year	Walleye	Hybrid Striped Bass	Black Crappie	Gizzard Shad	Channel Catfish
2020	Fing = 60,246	25,000 (1.25”)			4,494 (10.5”)
2021	Fry = 1,100,000 Fing = 77,282 (1.5”)	16,000 (1.25”)	252,518 (1”)		
2022	Fry = 1,100,000 Fing = 58,520 (1.5”)		209,813 (1.5”)		5,500 (10.5”)
2023	Fry = 1,100,000 Fing = 63,896 (1.5”)	23,584 (1.25”)		279 (15”)	
2024	Fry = 252,775 Fing = 57,223 (1.5”)	11,450 (1.75”)			3,302 (10.25”)
2025 (requested)	Fry = 1,100,000 Fing = 57,250 (1.5”)	11,450 (1.5”)		Pending survey results	

Water Levels

Davis Creek reservoir levels fluctuate greatly on an annual basis which impacts fish populations and recreational users. In a normal year, Davis Creek begins receiving water in April from the Mirdan canal and the reservoir normally reaches full capacity (elevation 2076) in June. Irrigation deliveries during the summer months will cause the reservoir to drop up to 25 feet. The reservoir is normally held at elevation 2055 during the winter months. Winter elevations were increased five feet in 2016 as monitoring wells in the area indicated that water mounding due to seepage from the reservoir was not having adverse impacts on neighboring landowners. Higher winter elevations increase available habitat and increase survival of overwintering fish populations. Water operations at Davis Creek are controlled by the Twin Loups Irrigation District and the USBOR. Daily reservoir elevation information can be found on the Bureau of Reclamation website.





Aquatic Invasive Species – Zebra Mussels

Anglers and recreational boaters should be aware of the threat of zebra and quagga mussels while using Nebraska waters. Boaters using Nebraska waters need to be aware of current regulations dealing with aquatic invasive species. The following regulations are in effect to help prevent the spread or introduction of unwanted species in Nebraska waters.

- **It is unlawful to arrive at or leave any waterbody in Nebraska with water other than from a domestic source (such as a water supply system, well, or bottled), except for fire-fighting purposes. This applies especially to boats, their compartments, equipment or containers that may hold water.**
- **Any watercraft that has been on a Nebraska waterbody must drain the lake water from their compartments, equipment or containers before leaving the launch area. It is illegal to dump baitfish into a Nebraska waterbody.**
- **Livewells need to be drained prior to leaving a launch area: plan ahead and bring a cooler for harvested fish.**
- **All aquatic vegetation from that waterbody attached to the watercraft and/or trailer must be removed before leaving the launch area**.

A good source of information about invasive species can be found on the Nebraska Game and Parks Commission website: Aquatic Invasive Species Information

Davis Creek Reservoir remains a priority location for AIS work and efforts will continue during 2025 to inspect boats, educate boaters, and to conduct sampling for veliger's, adult mussels, and other types of aquatic invasive species.

For additional information about fisheries management at Davis Creek Reservoir, please contact the Nebraska Game and Parks Commission office in Kearney at 308-865-5310, or by email at the addresses listed below.

District Manager: Brad Eifert, brad.eifert@nebraska.gov
Biologist: Colton Curtis, colton.curtis@nebraska.gov