

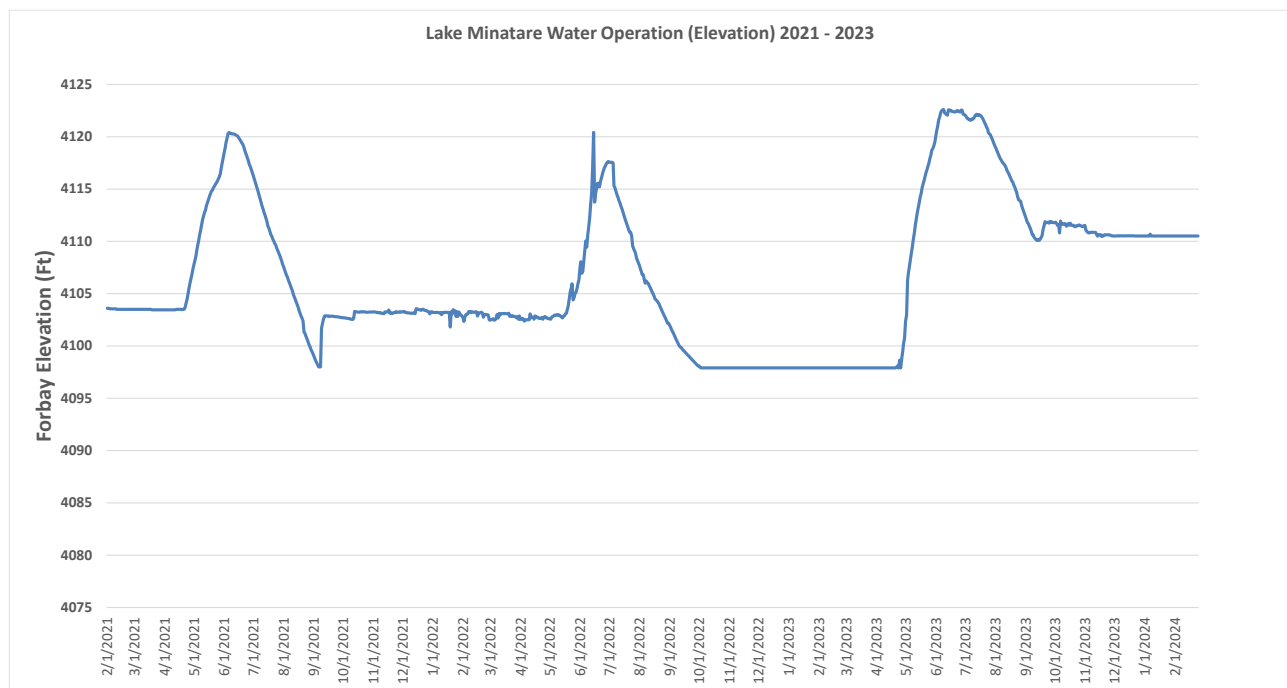
Lake Minatare

2023 Survey Summary

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Lake Minatare State Recreation Area is located 6 miles east and 8 miles north of Scottsbluff, NE in the North Platte River Valley. The reservoir was built in 1915 by the U.S. Bureau of Reclamation primarily for irrigation purposes. The fishery and land adjacent to the reservoir is managed by the Nebraska Game and Parks Commission for recreational activities. Fishing is available at Lake Minatare for a variety of fish species which include walleye, white bass, northern pike, channel catfish, smallmouth bass, largemouth bass, crappie, and yellow perch. The lake was once part of the North Platte National Wildlife Refuge and because of its history as a refuge for migrating waterfowl, it is closed to public use from October 15 through January 14.



Lake Minatare has a total storage capacity of 58,795 acre-feet of water or 2,147 surface acres when at full pool. Full pool elevation is at 4,125 feet above sea level with a dead pool elevation at 4,075 feet. The water levels as of January 1st 2024 are approximately 53% of capacity at 31,121 acre-feet of water. Although much of Nebraska remains influenced by drought conditions, the panhandle saw some relief in 2023. The reservoir peaked at elevation 4122.58 ft on June 14th and irrigation demands left the reservoir at better levels compared to the past few years. Lake Minatare is unique as it's water levels spend the majority of the year at low levels with a flash fill and draw down during irrigation season. Maintaining higher over winter levels increases the productivity of the system and provides more habitat for the fishery.



Fish Sampling

Several fish sampling techniques are used to monitor populations. Gillnets are set in the fall to evaluate off shore and pelagic species such as walleye, channel catfish, white bass, hybrid striped bass and shad or alewife. Night-time electrofishing is used to monitor bass populations in the spring and evaluate young-of-the-year (YOY) walleye populations in the fall as YOY walleye are not represented in the fall gillnet surveys. Frame nets are typically used to monitor near shore species such as yellow perch, bluegill, crappie, and northern pike when they are shallow during their spawn. Surveys are conducted the same time of year in the same locations to compare population trends. In Lake Minatare a fall gillnet survey was conducted on October 17, 2023 to evaluate the walleye, white bass, wiper, and catfish populations. A fall electrofishing survey was conducted on September 6, 2023 to evaluate the YOY walleye recruitment. The following narrative and graphs are the results of those surveys.



Gizzard Shad

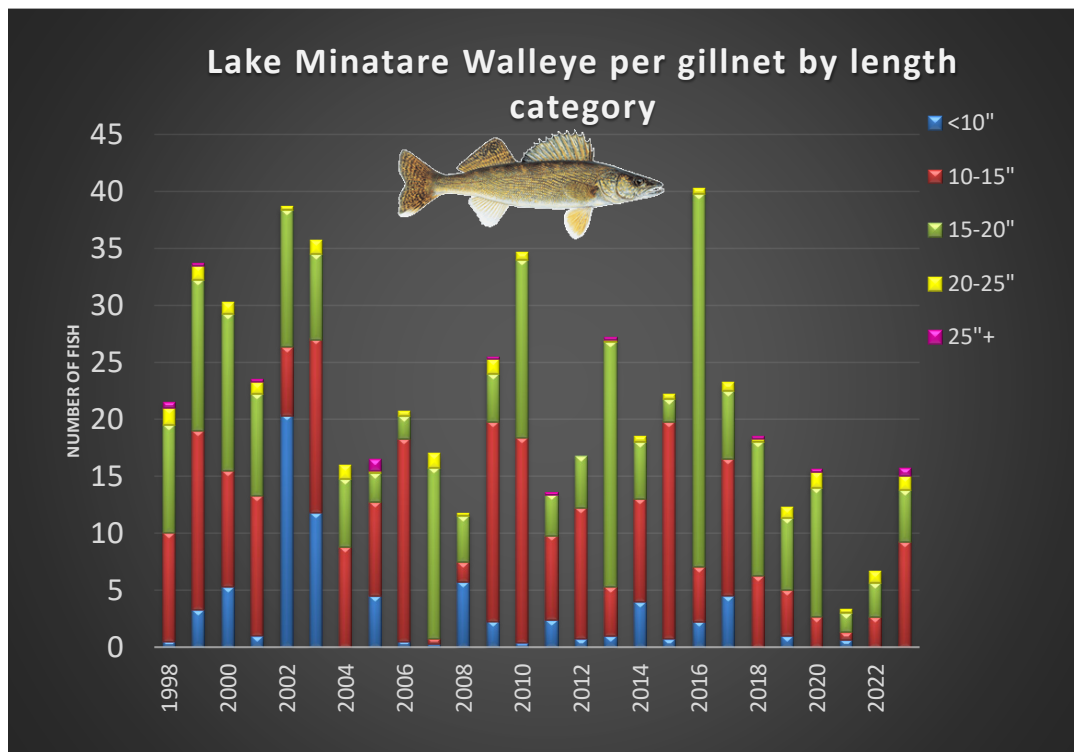
Gizzard Shad are a primary prey species in many Nebraska irrigation reservoirs and are the main food for the predator fish in Lake Minatare. This prey species sometimes has a tough time surviving the winter season as Lake Minatare is on the northern edge of their geographic range. If dead shad are observed by anglers, it is encouraged to contact the fisheries office and report the dead fish. If a die-off occurs, adult Shad are stocked prior to them spawning to assure there is an adequate forage base for fish such as walleye, white bass, and catfish. Gizzard shad gillnet catch is typically low in Minatare as most of the shad are small enough to swim through the gillnet mesh. Fall electrofishing survey suggests a good abundance of gizzard shad with multiple sizes of shad present in adequate numbers in Lake Minatare. Healthy body condition indices on predator species such as walleye, white bass, and channel catfish, also indicate an excellent forage base population currently in Lake Minatare.

Walleye

Walleye catch at Lake Minatare in 2023 was up to 15.75 fish per gillnet. This catch is an improvement from the past 2 years but still below the 20-year average of 19.6 walleye per net. Age and growth analysis suggests that 66% of the catch were age-1 and fish up to age 7 were present in the population. This suggests that the fingerling stocking in 2022 was a strong year-class. Some fish older than 7 years are likely still in the lake but did not show up in the survey. The average size walleye collected in the gillnet survey was 16 inches with the largest fish at 25.3 inches pictured here. The fall electrofishing survey captured 87 walleye per hour. This is the highest YOY walleye catch in Lake Minatare in the last 3 years which hopefully suggests another strong year-class of walleye from the 2023 stocking. Lake Minatare was stocked with walleye at 50 per acre of fingerling size fish (1 to 2 inches long) in 2023. This combination has been the most consistent stocking rate over the years to maintain the walleye population in Lake Minatare and will continue into 2024.



Walleye daily bag limit in Lake Minatare allows for 4 fish over 15 inches of which only one may be 22 inches or longer. The possession limit for walleye, saugeye, and sauger is 8 fish in combination.



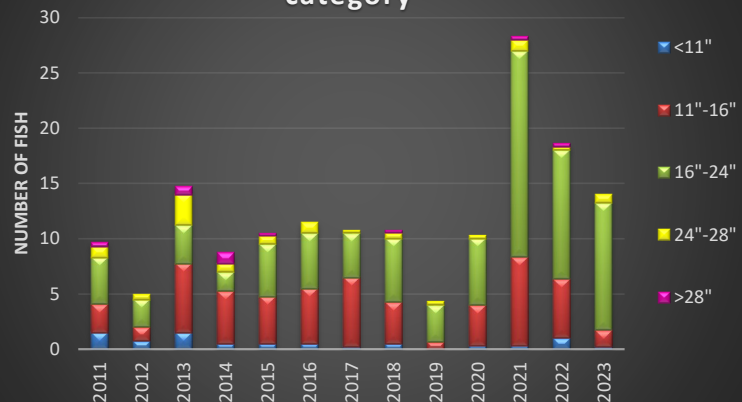
Catfish

The channel catfish gillnet catch in 2023 was 14 fish per net. The population has been on a declining trend since 2021 but still exceeds the management goal of 10 catfish per net. The population has all sizes of catfish with a few over 24 inches. The average length of channel catfish sampled in 2023 was 18.4 inches total length with the largest one collected at 25.2 inches. Channel catfish typically get stocked at 10 inches in length to reduce mortality from predators and increase survival. With the low density of walleye in Minatare, channel catfish survival has been excellent for the past few years. The declining trend may be a result from the rebounding walleye population. In 2022, the size of catfish stocked was reduced to 8 inches to reduce crowding in the hatcheries. Lake Minatare will be stocked with 6,000 8-inch channel catfish in 2024.

In 2007, 3,600 blue catfish were stocked into Lake Minatare. Although not many showed up in surveys after the first year, they are still persisting in the lake. One blue catfish was sampled in 2023 measuring 30.3 inches and weighed just under 14 pounds. It is the anglers responsibility to be able to differentiate the species because channel catfish have a bag limit of 5 fish per day and blue catfish are managed as a trophy

fish statewide with a daily bag limit of 1 fish per day. Lake Minatare will continue to be one of the top destinations in Northwest Nebraska to target and harvest catfish in 2024.

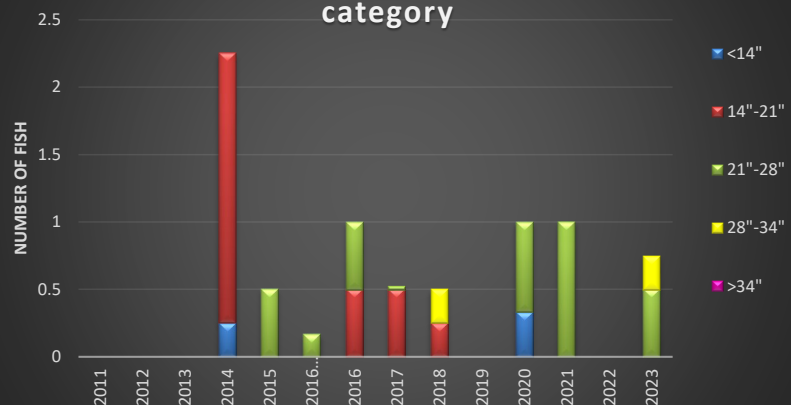
Channel Catfish per gillnet by length category



Northern Pike

Northern pike abundance remains low in Lake Minatare with 0.75 pike per gillnet in 2023. Although abundance is low, pike grow quickly in Lake Minatare proving some trophy potential. The largest pike sampled in 2023 was only 28 inches and weighed 5.5 pounds, but angler reports often suggest larger fish present in the fishery. Northern pike can provide some action when fishing for other species is slow. Pike are also shoreline oriented most of the year, which provides bank anglers an opportunity to catch a large aggressive predator fish. The daily bag limit of pike in Lake Minatare is 10 fish of which no more than one may be 34 inches or longer. The possession limit for Northern Pike is 10 fish.

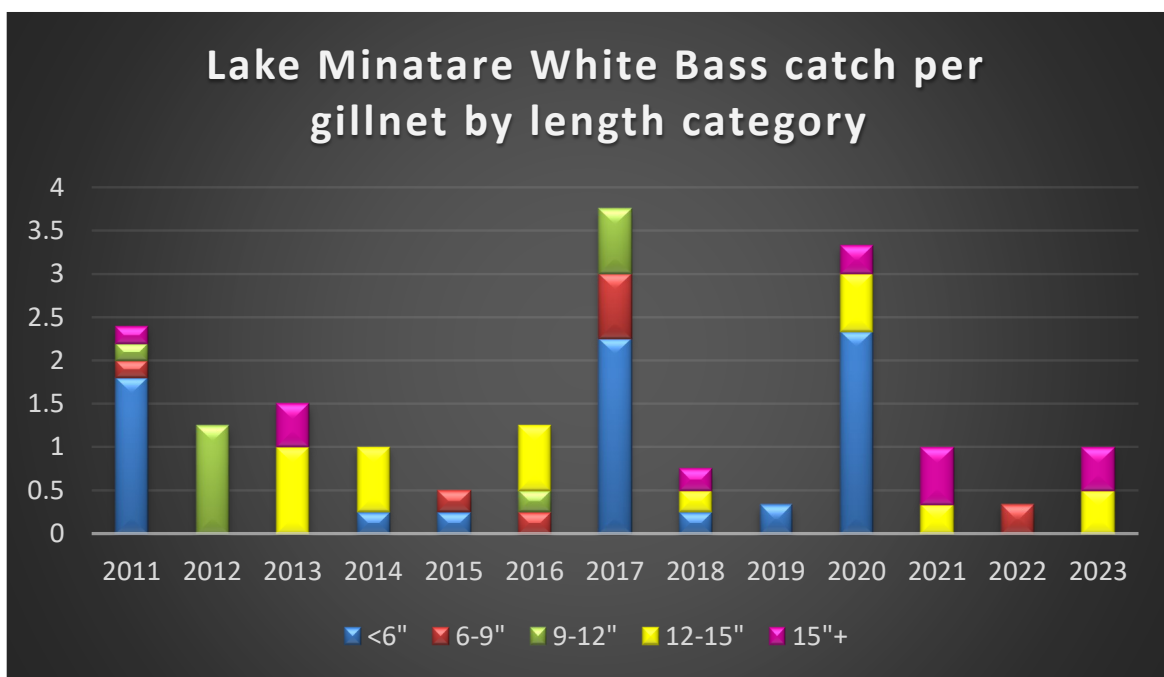
Northern Pike catch per gillnet by length category



White Bass and Wipers

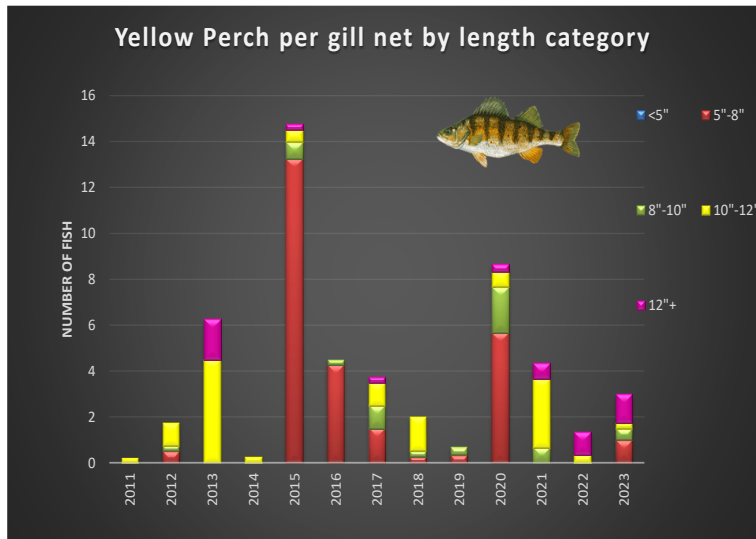
White bass abundance in Minatare remains low at 1 per gillnet in 2023. White bass can be difficult to sample due to their schooling behavior but trend data suggests that white bass do not thrive as well in Minatare compared to other Nebraska reservoirs. Lake Minatare is an off-channel reservoir that receives water during particular times of the year rather than a constant inflow. Although Minatare fills during the time of year when white bass reproduce, they do not get big year-classes like reservoirs with rivers flowing year-round into them. White bass in Minatare do grow exceptionally well regularly producing fish over 15 inches. The biggest white bass collected in the gillnet survey in 2023 was 16.5 inches.

Hybrid striped bass (wipers) stockings were discontinued after 2011 in an attempt to reduce competition with white bass with hopes to see a boost in the white bass population. After 11 years, the white bass population remained unchanged and angler request for wipers led to a low density stocking in 2023. A few large wipers still persist in the fishery, but only YOY wipers were sampled at a rate of 0.5 fish per gillnet in 2023. Wiper stockings will continue on an annual basis at 5 fingerling per surface acre.



Other angling opportunities

Yellow perch are not a top priority species in Lake Minatare but provide some additional angling opportunities and are one of the most sought after species during the ice fishing season. Yellow perch gillnet catch was low in 2023 but some exceptionally large perch were collected. Over 40% of the catch was over 12 inches with the largest perch measuring 13.3 inches.



Lake Minatare also offers some great black bass opportunities. Although no bass surveys were conducted in 2023, angler reports suggest excellent catch rates in 2023 for smallmouth bass. Largemouth bass are also present in Lake Minatare although in lower densities than smallmouth.



Invasive Species

Over the past several years invasive species have become a rising concern in Nebraska. It is illegal to either arrive or leave any water body in Nebraska with water other than from a domestic source (water supply system, well or bottled) except for firefighting purposes.



Zebra mussels (pictured right) and quagga mussels are small fingernail-sized mussels and adults are usually ¼ to ½ inches long with alternating yellow and brownish colored stripes on their shell. These mussels can spread in their immature form known as veligers by being transported in bilge, ballast, or live-well water or as adults attached to boat hulls, engines, aquatic vegetation, or other surfaces. Sampling for these veligers occurs statewide from the months of May through September when water temps exceed 50 °F. At Lake Minatare Zebra mussels will be sampled monthly in 2024 during those months.

Zebra mussels were first documented in Nebraska in 2006 at Offutt Air force Base Lake and are now also located in Lewis and Clark Lake, Lake Yankton, and the Missouri River. Zebra Mussels are spreading quickly in nearby South Dakota with expansion up the Missouri River Reservoirs, eastern South Dakota Glacial Lakes, and Pactola Reservoir in the Black Hills.

Aquatic vegetation such as Curly-leaf Pondweed and Eurasian Watermilfoil are also invasive species present in Nebraska. Both of these plant species form dense mats of vegetation near the water's surface which make recreational fishing, boating, and swimming difficult. Spread of these plants can happen through stem fragmentation. A single segment of plant material can be transferred to another water body and form a new colony. Both or some of these species have been documented in western Nebraska at Box Butte Reservoir, Walgren Lake, Smith Lake WMA, Cottonwood SRA, Merritt, and on Fort Robinson.

It is important to do your part as a boater, hunter, and anglers by practicing **CLEAN, DRAIN, and DRY** every time!

CLEAN - Remove plants, animals, mud and thoroughly wash equipment that came into contact with the water.

DRAIN - Drain all water before leaving, including livewells, bilge, ballast, and any parts or equipment that can hold water. Remember to remove all boat plugs before leaving the boat launch area and don't put them back in until ready to launch again.

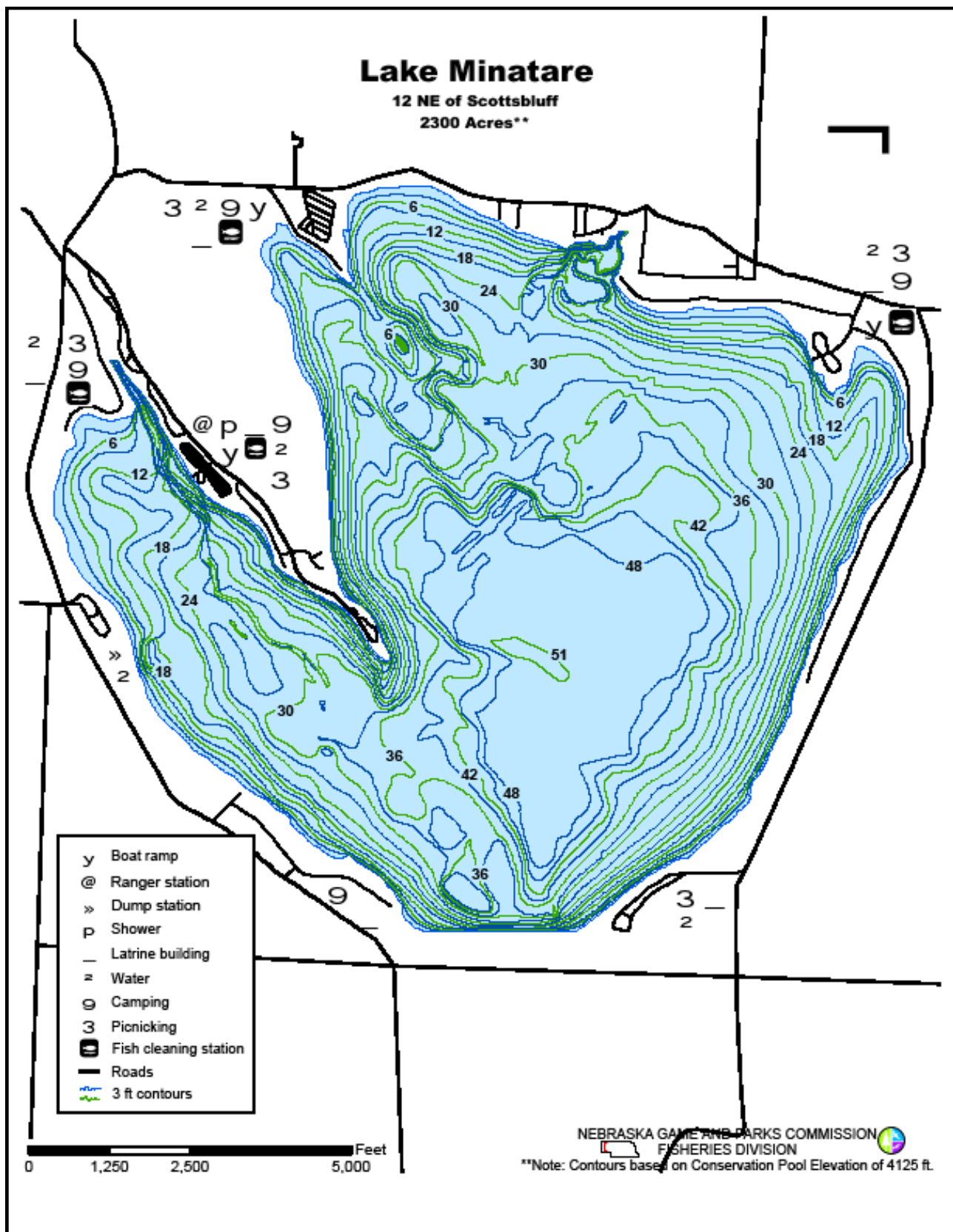
DRY - Allow all equipment to dry completely before launching into another body of water. Don't fish more than one body of water in a day without drying all equipment first.

For more information on invasive species in Nebraska visit neinvasives.com.

Anglers may encounter Nebraska Game and Parks staff conducting boat inspections and interviews to monitor risk of invasive species and help prevent the spread to Lake Minatare in 2024.

Don't forget to lower your outboard motor to drain all the water from your lower unit before leaving a boat launch facility.





For additional information about fisheries management at Lake Minatare please contact the following personnel by phone or email addresses listed below.

District Supervisor: Al Hanson, (308)763-2940 al.hanson@nebraska.gov

Fisheries Biologist: Joe Rydell, (308)763-2940 joe.rydell@nebraska.gov

Fisheries Biologist: Zac Brashears, (402)376-8080 zac.brashears@nebraska.gov