Lake Minatare
2022 Survey Summary

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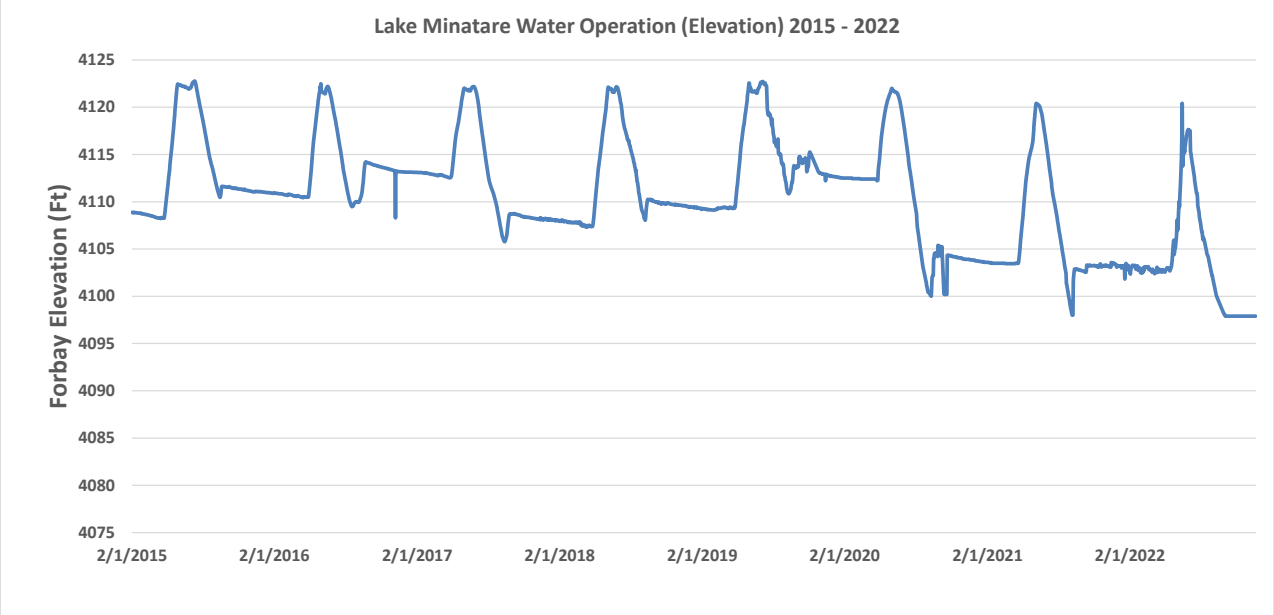
Lake Minatare State Recreation Area is located 6 miles east and 8 miles north of Scottsbluff, NE in the North Platte River Valley. The reservoir was built in 1915 by the U.S. Bureau of Reclamation primarily for irrigation purposes. The fishery and land adjacent to the reservoir is managed by the Nebraska 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 December 21st 2022 are approximately 23% of capacity at 13,491 acre-feet of water. Drought conditions started in 2020 and continued through 2022. Due to drought, the amount of water allocated to the region resulted in less fill to the reservoir prior to irrigation season and irrigation demands were also high resulting in lower reservoir levels going into the winter months. Typically, Lake Minatare will get a late fall transfer of water from Big Lake Alice, but that did not occur in 2022. Minatare operates with a flash fill and quick drain during irrigation season. This means that the reservoir's carrying capacity is dependent on the reservoir's over winter levels.

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 18, 2022 to evaluate the walleye, white bass, wiper, and catfish populations. A fall electrofishing survey was conducted on September 26, 2022 to evaluate the YOY walleye recruitment. The following narrative and graphs are the results of those surveys.

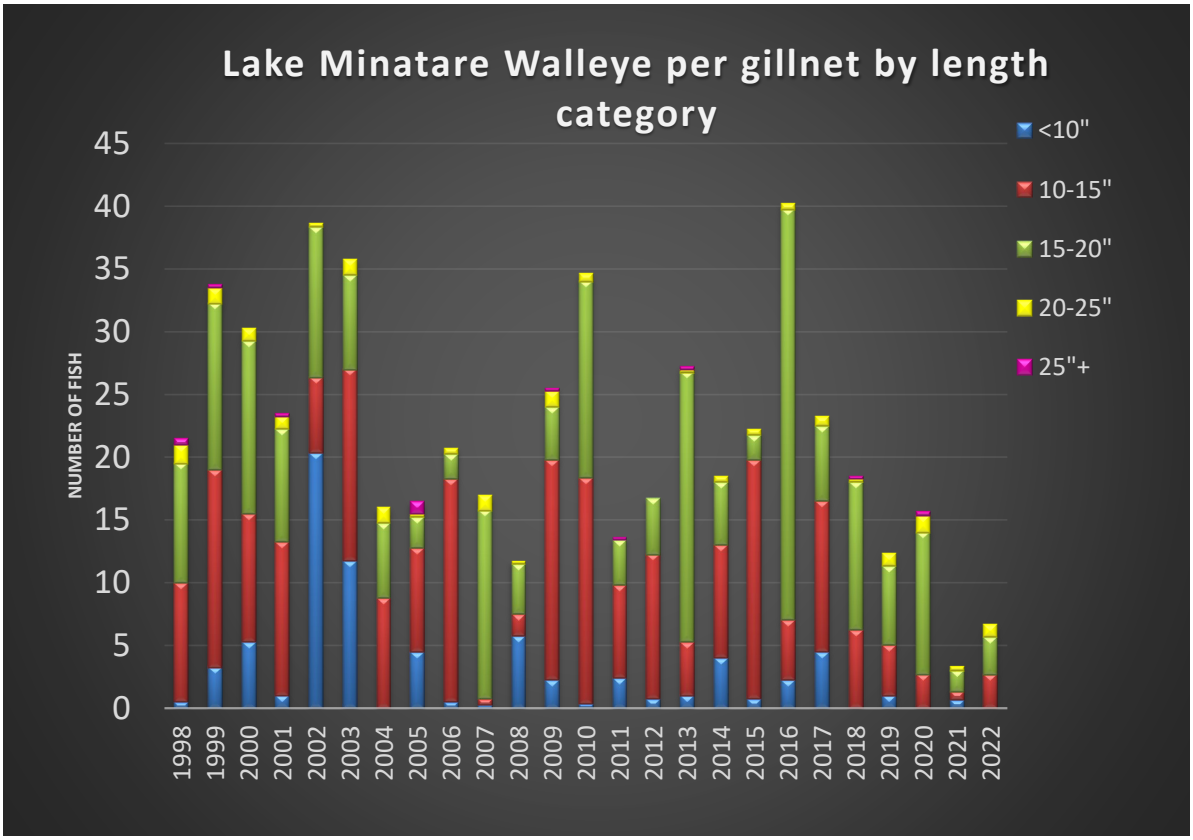
Gizzard Shad

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 high 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 in Lake Minatare.

Walleye

Walleye catch at Lake Minatare in 2022 suggested a slight increase in abundance from the low catch in 2021 at 6.7 walleye per gillnet. Age and growth analysis suggests that 50% of the catch were age-1 and fish up to age 7 were present in the population. Some fish older than 7 years are likely still in the lake but did not show up in the survey. This suggests that the fingerilng stocking in 2021 produced some recruitment to the population. The average size walleye collected in the gillnet survey was 17.1 inches with the largest fish at 24.6 inches. The fall electrofishing survey captured 36 walleye per hour. This is lower than 2021 but may not be an accurate assessment as there were electrical issues with the survey equipment at the time of the survey that reduced sampling time. Lake Minatare typically gets stocked with walleye at 50 per acre of fingerling size fish (1 to 2 inches long) on an annual basis. Due to a surplus of walleye fry (recently hatched walleye), and additional 935,212 fry were stocked prior to the 110,000 fingerling stocking in 2022.

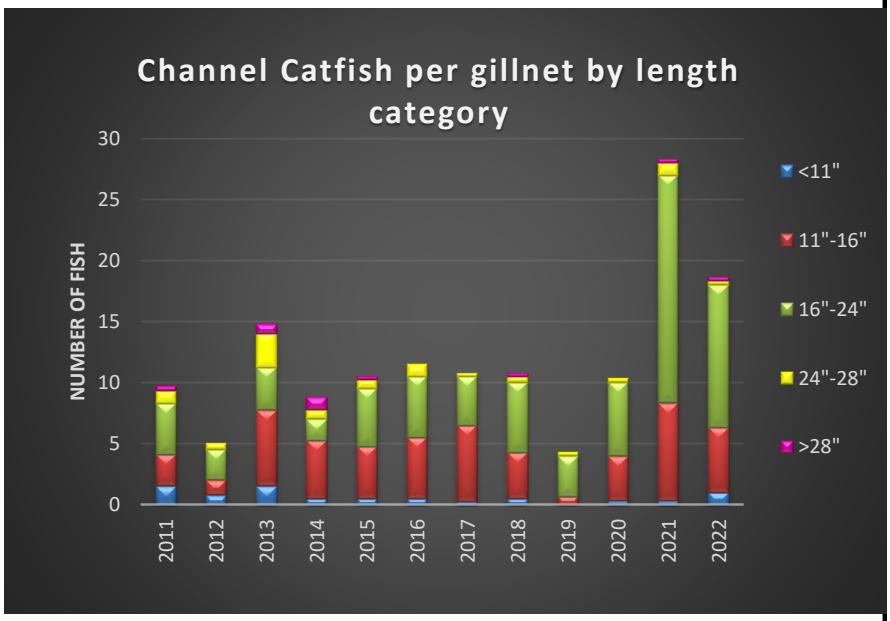
Walleye daily bag limit in Lake Minatare allows for 4 fish over 15 inches of which only one may be 22 inches or longer. The possession limit for walleye, saugeye, and sauger is 8 fish in combination.



Catfish

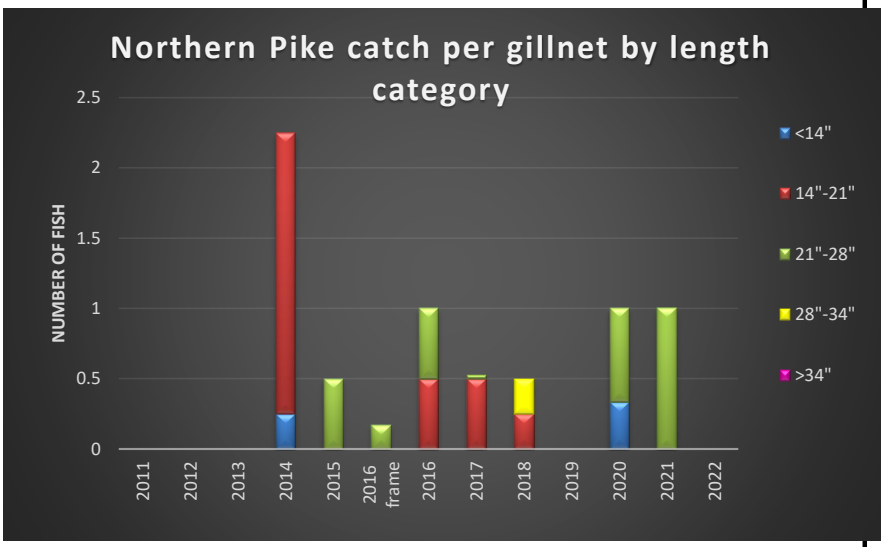
The channel catfish gillnet catch in 2022 was 18.6 fish per net and down slightly from 2021 but still exceeds the management goal of 10 catfish per net. The population has all sizes of catfish with a few over 24 inches. The average length of channel catfish sampled in 2022 was 17.0 inches total length with the largest one collected at 28.2 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. In 2022, the size of catfish stocked was reduced to 8 inches to reduce crowding in the hatcheries. Lake Minatare will be continue to be stocked with channel catfish in 2023.

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. Although no blue catfish were sampled in 2022, one blue catfish was collected in 2021. It measured 25.4 inches and weighed just over 8 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 2023.



Northern Pike

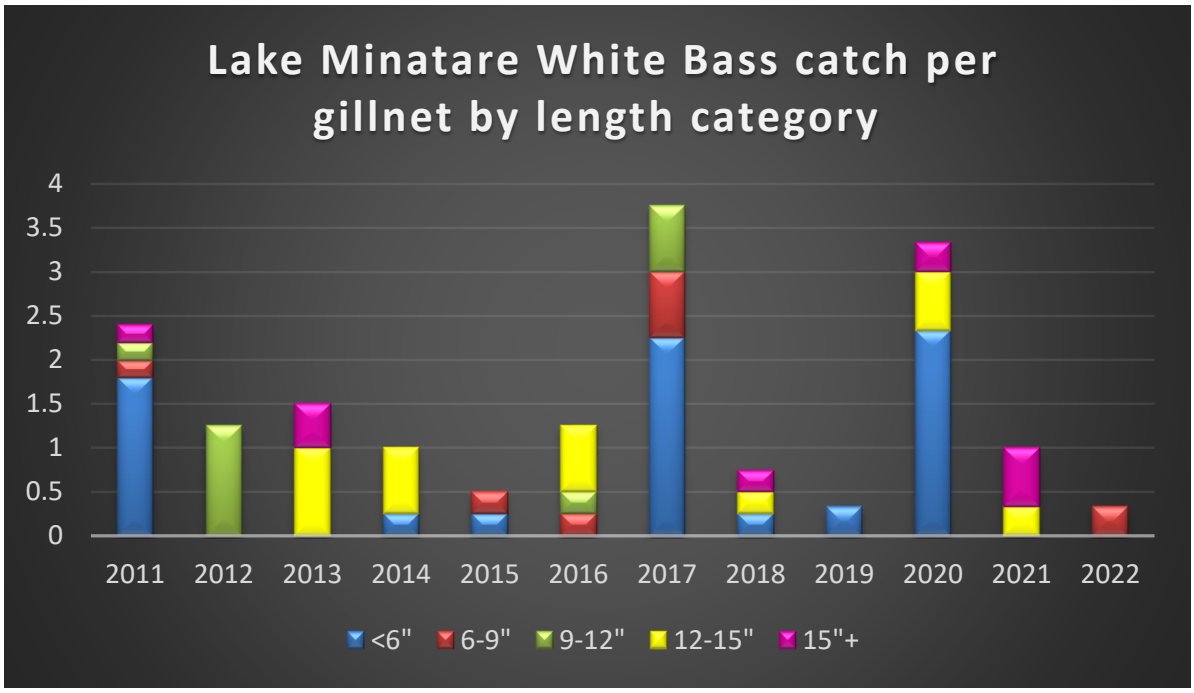
Northern pike abundance remains low in Lake Minatare with no pike collected in the gillnet catch of 2022. Angler reports suggested some good catch rates for pike in May and June 2022 while fishing for walleye. Northern pike can provide some action when fishing for other species is slow. Pike are also shoreline oriented most of the year, which provides bank anglers an opportunity to catch a large aggressive predator fish.



White Bass and Wipers

White bass abundance in Minatare remains low at 0.3 per gillnet in 2022. 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. Only YOY white bass were collected in the 2022 survey.

Hybrid striped bass (wipers) were last stocked in Lake Minatare in 2011. They were discontinued in an attempt to reduce competition with white bass with hopes to see a boost the white bass population. A few large wipers still persist with a 2022 gillnet catch rate of 0.3 wipers per net. The largest Wiper collected in 2022 was 25.2 inches and pictured here. Since the white bass population has not increased in Minatare with the reduced wiper abundance, a low density wiper stocking will be requested in 2023 to bring back additional angling opportunities.



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 ^{o}F. At Lake Minatare Zebra mussels will be sampled monthly in 2023 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!

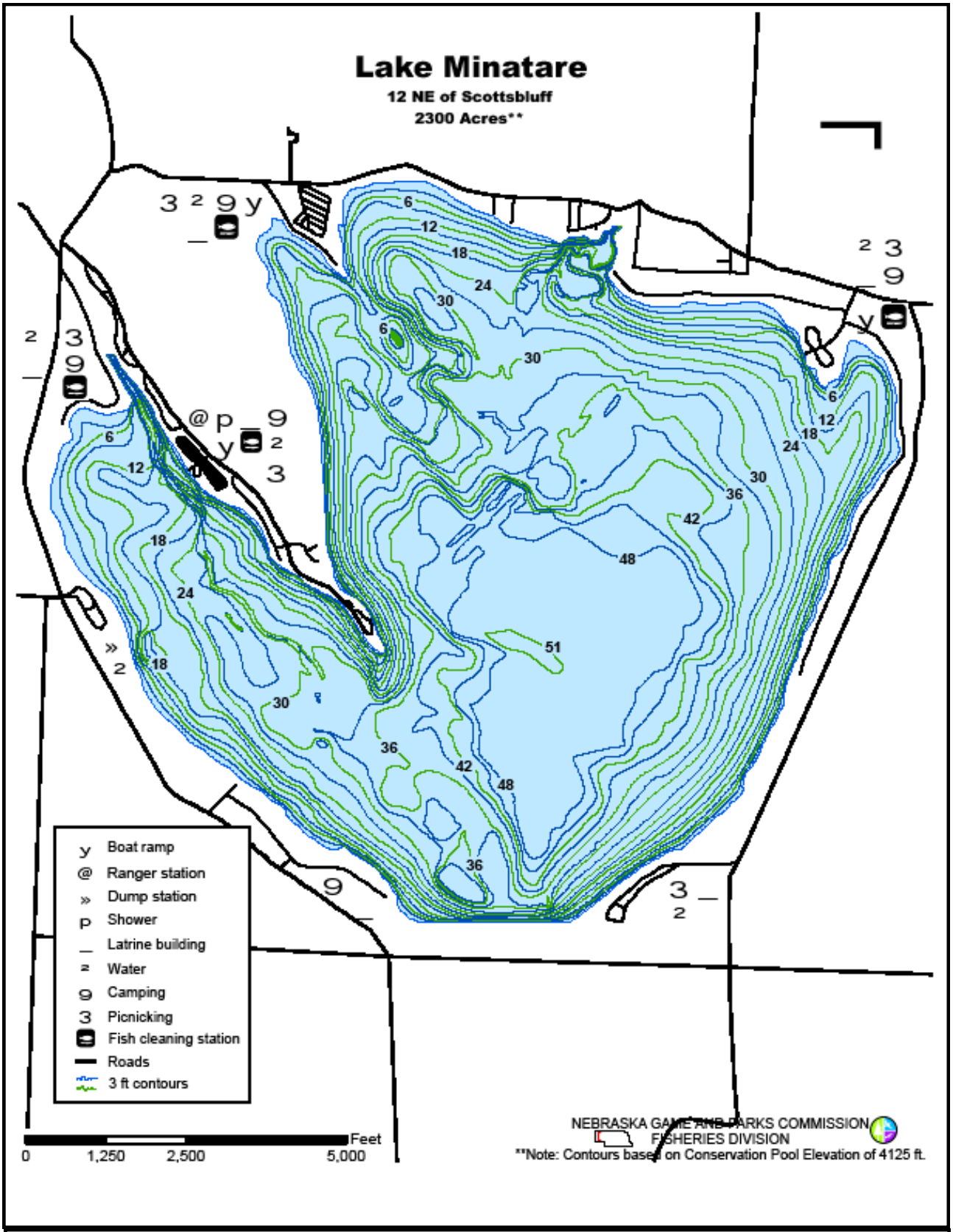
CLEAN - Remove plants, animals, mud and thoroughly wash equipment that came into contact with the water.

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.

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.

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