

Merritt Reservoir

2018 Fall Survey Summary

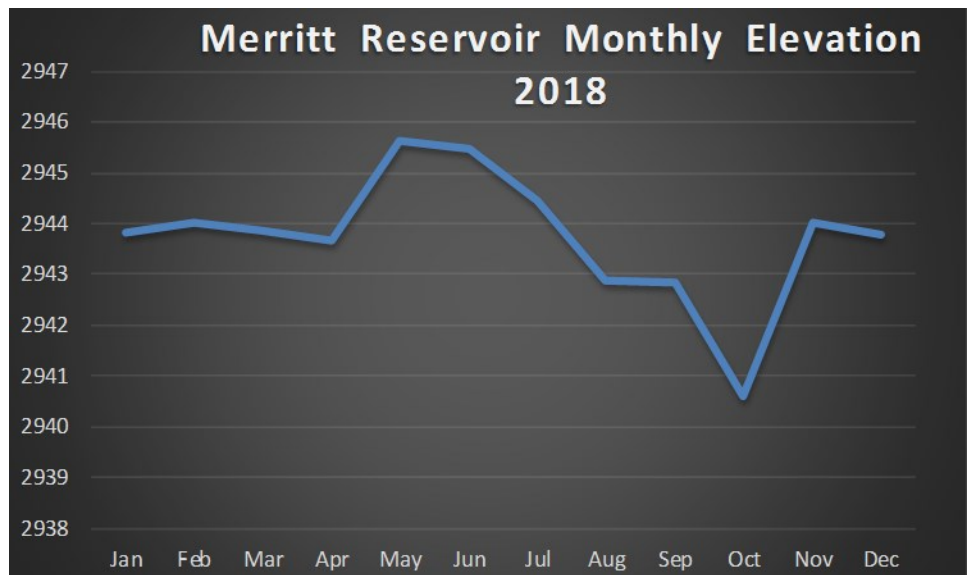
Zac Brashears Fisheries Biologist



Merritt Reservoir is located in the Nebraska sandhills approximately 26 miles southwest of Valentine, NE. The area is comprised of 2,905 acres of water with 6,000 acres of land adjacent to the reservoir. The reservoir was built in 1964 by the Bureau of Reclamation for irrigation purposes. When built, the Snake River was dammed near its confluence with Boardman Creek, flooding both valleys along with the Powder Horn arm of the reservoir. Flows from both the Boardman Creek and Snake River contribute to filling the reservoir to full pool each year. A graph showing fluctuations in lake levels over the last year can be seen below. The water and land adjacent to the reservoir is managed by the Nebraska Game and Parks Commission for fishing, hunting, and recreational activities. Fishing is available year round and several different fish species are present in Merritt Reservoir which include: alewife, walleye, white bass, muskellunge, northern pike, yellow perch, bluegill, pumpkinseed, black crappie, largemouth bass, smallmouth bass, freshwater drum, black bullhead, white sucker, and common carp.

Facilities at Merritt Reservoir include nine campgrounds (four with electrical hookups and one with ADA accessible shower), one dump station, vault toilets, picnic shelters, two fish cleaning stations, five boat ramps with lighted parking lots, and an area concessionaire which

provides permits, groceries, fee camping with RV hookups, boat rentals, fuel, cabins and guide services.

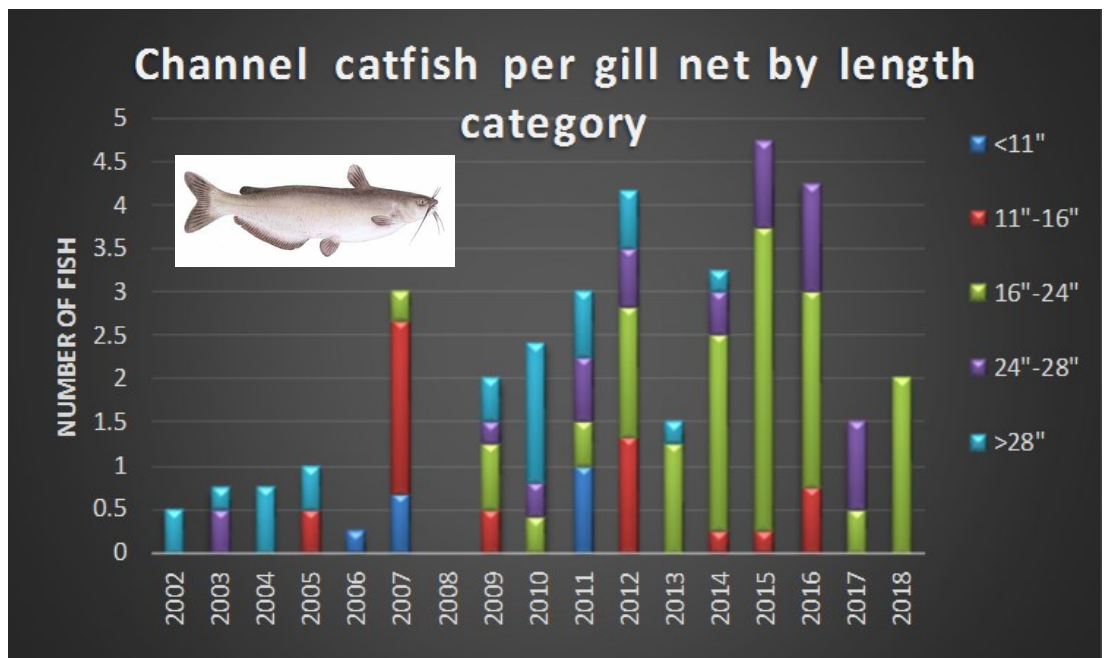


The following texts and graphs are the results of netting surveys completed at Merritt Reservoir in 2017. Biologists use gill nets to sample species that are primarily found in open water such as walleye, white bass, and channel catfish and trap nets to sample shore oriented species such as bluegill, black crappie, yellow perch and northern pike. Electrofishing surveys are used to sample largemouth and smallmouth bass at Merritt Reservoir. The nets and electrofishing stations are sampled each year at approximately the same locations and dates as previous years to allow for trend comparisons.



Channel Catfish

Channel catfish abundance remains low in Merritt. Catch rates increased slightly from the 2017 survey with 2 fish per net sampled but much lower when compared to the 2014-2016 surveys. This catch rate in 2018 was exactly the average catch rate since 2002. All the catfish sampled were in the same size category of 16-24". The largest catfish sampled in the 2018 surveys measured 638 mm or 25.1 inches.



Even though bigger catfish weren't sampled personal communication with anglers tell that bigger fish do reside in Merritt. Historical master angler data shows that multiple fish exceeding 30 inches or 12 pounds are turned in each year and even fish pushing the 30 pound mark. The state record came from Merritt in 1986 and weighed 41.5 pounds. Anglers who fish Merritt usually target these fish in deeper water or along edges drifting blood bait and cut bait. Fishing for catfish in the early spring spawning periods around flooded timber with bobbers and cutbait can be a very exciting challenge.

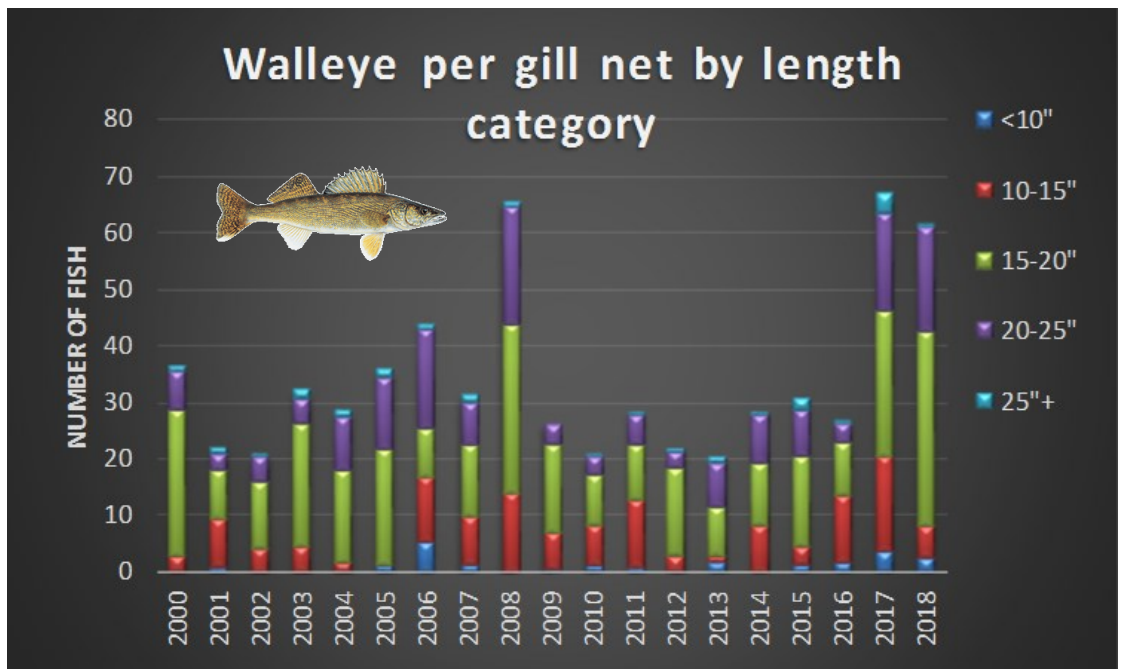
Stocking requests are for 10,000 ten inch catfish to be stocked into Merritt in 2018. Efforts are being made to provide anglers with opportunities at trophy channel catfish.

Channel Catfish Regulations: Daily bag limit of 5 fish with a possession limit of 20 fish in standing water (reservoirs, lakes, ponds, and pits).



Walleye

The walleye gill net catch decreased slightly from the 2017 survey but is still very high when compared to historical data. The 2018 catch rate of 61.5 walleye per net is almost double that of the average since 2000 of 34 walleye per net. The walleye population has looked excellent over the past two years with every size category sampled. In



2018, 87% of the walleye that were sampled were over the statewide minimum of 15 inches and 30% were over 20" in length. The average length of walleye collected was 458 mm or 18 inches. The largest walleye sampled in 2018 measured 25 inches but bigger fish do reside in Merritt as seen during the April walleye spawning operations.

Anglers at Merritt are allowed a daily bag limit of four walleye which may include one from 15 to 18 inches (it is allowable to have all fish over 18 inches) but only one fish over 22 inches is allowed in the daily bag.

Walleye stockings at Merritt Reservoir occur during the month of June with approximately 214,875 fingerling (2 inches) stocked to maintain the population. This stocking rate began in 2014 and is an increased stocking rate from 50 fish per acre to 75 fish per acre. This stocking rate will be continued over the next several years and documented with fall gill netting to determine species abundance and health of the fishery.

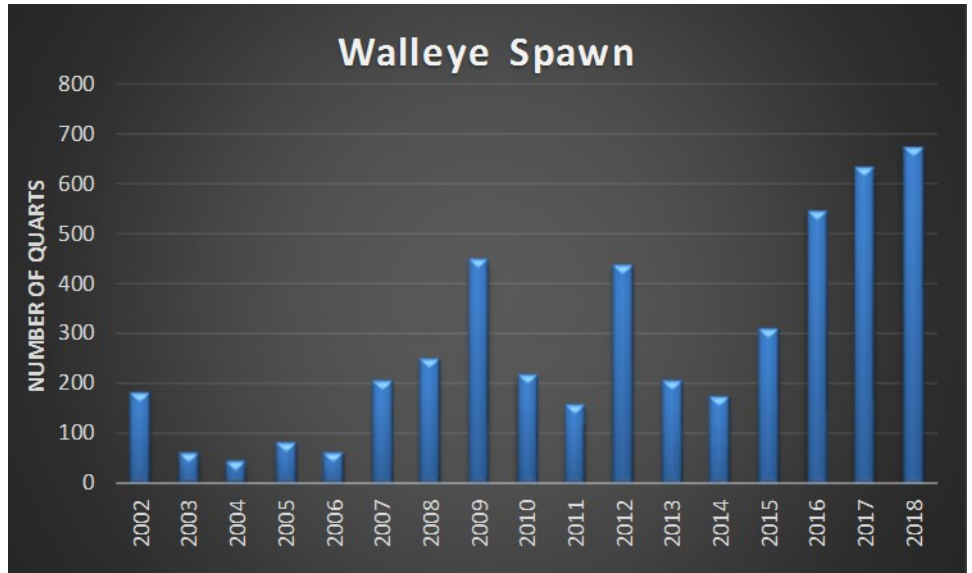
Anglers should see increased opportunities at fish greater than 15 inches at Merritt in 2018. These fish are generally targeted using slip bobbers and live bait along weed beds throughout the lake or lindy rigging live bait along flats and drop offs.



Walleye Spawn

Fisheries Division will again be conducting walleye spawn operations at Merritt along with other reservoirs in 2018. These operations usually occur during late March or early April and last until hatchery production needs are met. Nets are set parallel to the dam or shore line in order to collect females as they venture in to spawn. These nets are marked with a buoy on each end. Anglers are reminded not to cast between the buoys or lures will be lost.

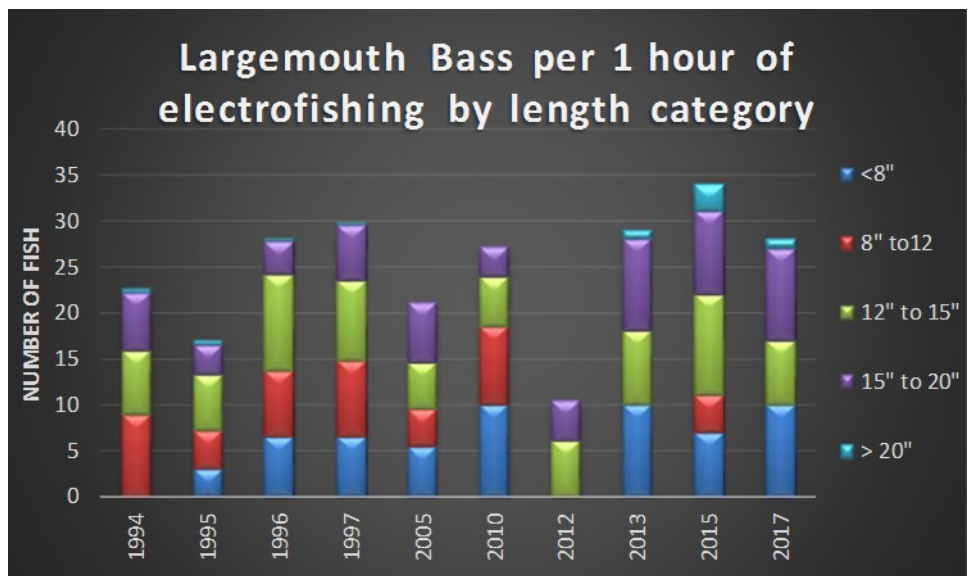
During the 2018 spawning operation, Nebraska game and parks personnel collected 673 quarts of walleye eggs from Merritt Reservoir.



Largemouth Bass

In 2013, NGPC personnel began to sample black bass populations on alternate years therefore no sampling was conducted in 2018. Abundance of largemouth bass in 2017 declined slightly to 28 fish per hour. These fish did show an excellent size structure with several fish from 15-20 inches as well as fish over 20 inches in length. This catch rate is average when comparing it to historical data since 1994 (27.4 fish per hour). Approximately 40 percent of the largemouth population is over the statewide minimum of 15 inches. The largest bass sampled was 528 mm (20.8 inches). Smallmouth bass provide additional angling opportunities at Merritt although sampling of this species can be relatively difficult.

Black Bass Regulations: Minimum length limit of 15 inches with only one fish longer than 21 inches in the daily bag. Daily bag limit of 5 fish with a possession limit of 10 fish.



Muskellunge and Northern Pike

Merritt Reservoir continues to draw more anglers each year in search of trophy muskellunge. Angler testimonials as well as photographs report some of these fish pushing the 50 inch mark. The state record came from Merritt in 1992 and weighed 41.5 pounds. Northern pike are also present in Merritt Reservoir adding additional fishing opportunities especially during the spring months or during ice fishing.

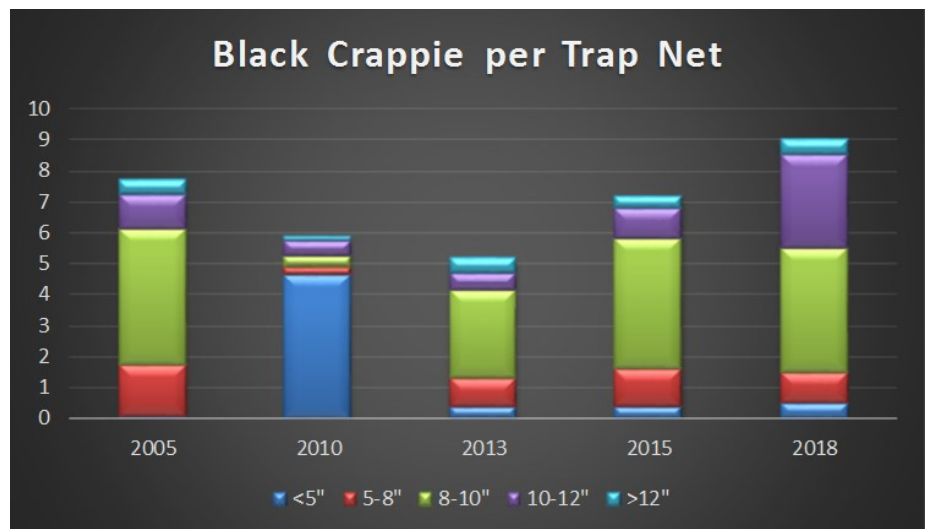
During the 2018 walleye spawning operations, 94 muskellunge were sampled in a 5 night period. Out of those fish sampled fish between 30-38 inches made up 72% of the population. Muskellunge between 38-42 inches made up 23% of the population and 5% of the muskellunge sampled were between 42-50 inches. The largest muskellunge sampled was a 44 1/2 inch fish weighing approximately 28 pounds.

Muskellunge are usually targeted during the early spring periods along shallow areas or weedbeds throwing bigger lures to attract these predacious fish.



Black Crappie

Panfish populations are surveyed every 2-3 years at Merritt Reservoir. During the 2018 surveys Black crappie had the highest catch rate since 2005 catching 9 black crappie per trap net. Of the crappie sampled 78% of those fish were between 8-12 inches in length. A few individual fish exceeded the 12" mark including a crappie that was 363 mm in length or 14.3 inches.



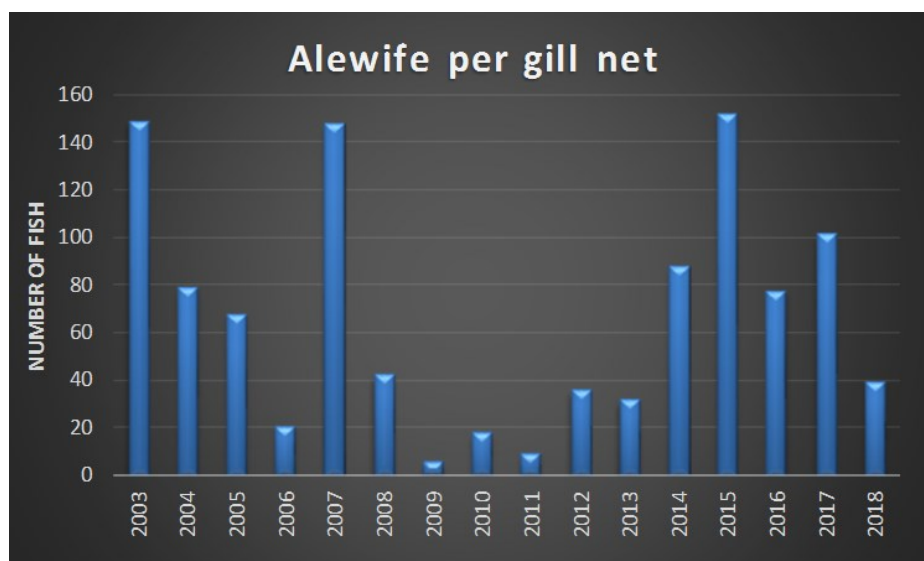
Crappie are usually targeted during the early spring spawning periods around shallow timber or smartweed beds found throughout the lake using bobbers and minnows or small jigs. Crappie can also be found along submerged timber during the late summer, fall, and winter months.

Yellow perch, bluegill, and pumpkinseed provide added opportunities for anglers at Merritt. These fish are usually targeted during the late summer months when walleye are tough to find or through the winter ice.

Panfish Regulations: Combined daily bag limit of 15 fish with a possession limit of 30 fish.

Alewife

Alewife are the primary prey species in Merritt for the top predators such as walleye, northern pike, muskellunge and largemouth bass. The catch rate for alewife dropped to less than half of the 2017 catch with 39 alewife sampled per net in 2018. Observations in the field lead us to believe this is not a true indicator of the alewife population. Many of the alewife are smaller which may have affected our catch rates and timing of our surveys may have played an influence on these catch rates. Angler communications also indicated huge populations of baitfish on their graphs this fall.



Angler Access Project-Merritt Reservoir

A new boat ramp and breakwater was constructed in 2017 at the main area on Merritt Reservoir. The new boat ramp will provide access for a longer duration during the summer months.

Part of the project, which was not completed, is a breakwater to the south-west of the boat ramp (near Willow Cove Campground). Construction of this breakwater will occur in the late summer or early fall if water levels are low enough.

This project is paid for by the Nebraska Aquatic Habitat-Angler Access Program, Capital Development Maintenance funds and U.S. Coast Guard boating safety funding.



Invasive Species

Over the past several years invasive species have become a rising concern in Nebraska. In 2015, a new regulation was established to help prevent the spread of invasive species via boats and trailers. The new regulation states: 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) were first documented in Nebraska in 2006 at Offutt Airforce Base Lake and have since been discovered at Zorinsky Lake (2010) (mussels eliminated via a winter drawdown that froze them out and haven't been sampled since), Lewis and Clark Lake (2015), Lake Yankton (2017), Glen Cunningham Lake (2018) and below Gavins Point Dam in the Missouri River. Zebra mussels and quagga mussels are small fingernail-sized mussels and adults are usually $\frac{1}{4}$ to $\frac{1}{2}$ 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. No evidence of these mussels has been discovered in any other lakes sampled.

Aquatic vegetation such as curly-leaf pondweed and Eurasian water milfoil are also invasive species present in Nebraska. Both of these plants 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 therefore removing any visible plant material from boats and trailers is a must and remember to **CLEAN, DRAIN, and DRY!**

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

DRAIN- Drain all water before leaving, including wells, bilge, ballast, and any parts or equipment that can hold water.

DRY- Allow all equipment to dry completely before launching into another body of water.

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



For more information on fisheries management or activities on the Valentine National Wildlife Refuge contact:

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

Al Hanson (NGPC Manager) or Joe Rydell NGPC Biologist, (308) 763-2940 al.hanson@nebraska.gov, joe.rydell@nebraska.gov

Juancarlos Giese (USFWS refuge manager), (402) 376-1889 Juancarlos_giese@fws.gov

Attention motorboat owners operating in Nebraska :



Boaters whose motorized watercraft are registered in any state other than Nebraska will be required to display a \$15 Aquatic Invasive Species Stamp each year they boat in Nebraska.

This stamp will help fund Aquatic Invasive Species education and inspection programs.

- Note that boat inspections to launch in Nebraska are NOT mandatory at this time.
- This applies to all *motorized* watercraft. Non-motorized craft are exempt.
- Personal watercraft (Jet Ski, Waverunner, Sea Doo, etc.) are required to have this stamp.
- Boats registered in Nebraska pay the fee via their registrations and are exempt from displaying the sticker.

This stamp is available online at www.outdoornebraska.org and at some agency offices.

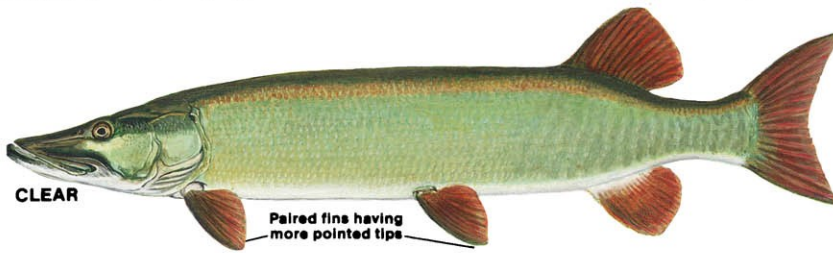


From the “Buy A Permit” page, look for this link:

Learn more about invasive species at www.neinvasives.com.

MUSKELLUNGE - NORTHERN PIKE

Know How To Tell The Difference!



CLEAR

Paired fins having more pointed tips

NOTE: Faint indication of marking pattern is sometimes present on posterior 1/3 of body in "clear" variation of muskellunge.

MUSKELLUNGE
(*Esox masquinongy*)

3 COMMON PATTERN VARIATIONS

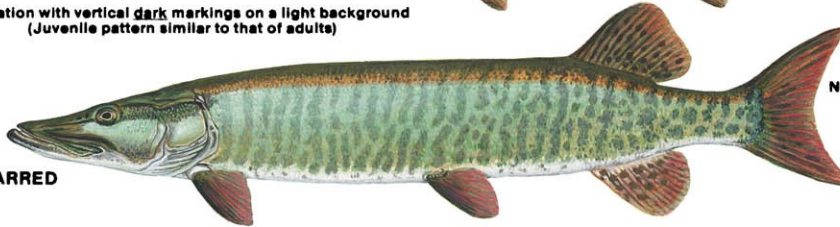
SPOTTED



Caudal fin with pointed tips

Coloration with vertical dark markings on a light background (Juvenile pattern similar to that of adults)

BARRED

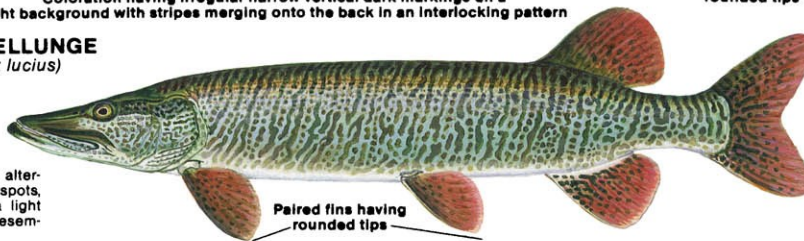


NOTE: Background colors of fish can vary slightly depending on environmental characteristics of the water body and its geographic location. One marking pattern may dominate in an area, but all 3 can be present.

Coloration having irregular narrow vertical dark markings on a light background with stripes merging onto the back in an interlocking pattern

Caudal fin with rounded tips

HYBRID "TIGER" MUSKELLUNGE
(*Esox masquinongy* X *Esox lucius*)



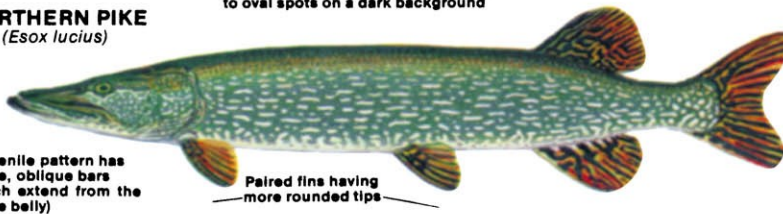
Paired fins having rounded tips

NOTE: Sides sometimes exhibit an alternating pattern of stripes and spots, or narrow paired-bars on a light background. Pattern never resembles that of northern pike.

Coloration with pattern of horizontal rows of light round to oval spots on a dark background

Caudal fin with more rounded tips

NORTHERN PIKE
(*Esox lucius*)



Paired fins having more rounded tips

(Juvenile pattern has white, oblique bars which extend from the white belly)

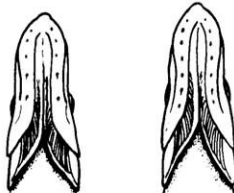
NOTE: Some areas may contain "Silver Pike" which is a mutant color variation of northern pike that lack the characteristic spots and have dark to light greyish/blue sides. Fin coloration normal for northern pike is exhibited in the "silver" variety.

Color illustrations by:

MRS BECK ©86

IN MOST AREAS THESE FISH HAVE MINIMUM SIZE RESTRICTIONS, MAXIMUM POSSESSION LIMITS, AND SPECIAL OPEN SEASONS... CONSULT LOCAL FISHING REGULATIONS FOR SPECIFIC DETAILS.

Location of submandibular pores on under side of lower jaw...



NORTHERN PIKE
5 or fewer pores

MUSKELLUNGE
6 to 9 pores

NOTE: Hybrids have 5 to 8 pores on each side of lower jaw. ©

For further information please contact the Nebraska Game and Parks Commission or...

Muskies Inc.
www.muskiesinc.org



Line diagrams courtesy of Dr. James C. Underhill, University of Minnesota



NEBRASKA GAME AND PARKS COMMISSION



MUSKELLUNGE

Upper half of cheek and operculum with scales



NORTHERN PIKE

Entire cheek and upper half of operculum with scales

NOTE: Hybrids have 1/2 or more of cheek and upper half of operculum with scales.