

Merritt Reservoir

2016 Fall Survey Summary

Zac Brashears Fisheries Biologist

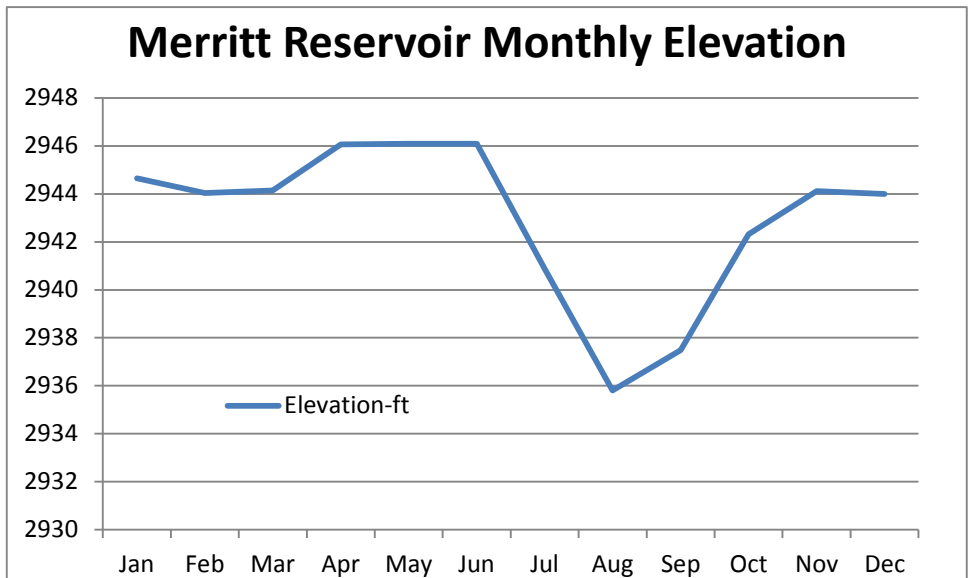


Merritt Reservoir is located in the Nebraska sandhills approximately 26 miles southwest of Valentine, NE. The area is comprised of 2,905 acres of water with 6,000 acres of land adjacent to the reservoir. The reservoir was built in 1964 by the Bureau of Reclamation for irrigation purposes. When built, 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

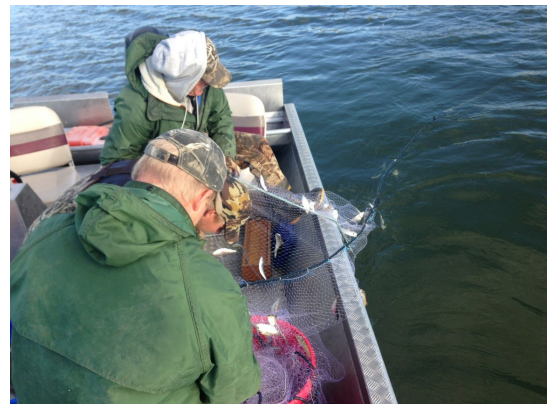
Commission for fishing, hunting, and recreational activities. Fishing is available year round and several different fish species are present in Merritt Reservoir which include: alewife, walleye, white bass, muskellunge, northern pike, yellow perch, bluegill, pumpkinseed, black crappie, largemouth bass, 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 2016. 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 declined slightly from the 2015 survey with a catch rate of 4.25 fish per net.

Approximately 82% of the catfish population surveyed were over 16 inches in length and the largest fish sampled measured 27.6 inches. Channel catfish over 24 inches was the highest documented since 2002.

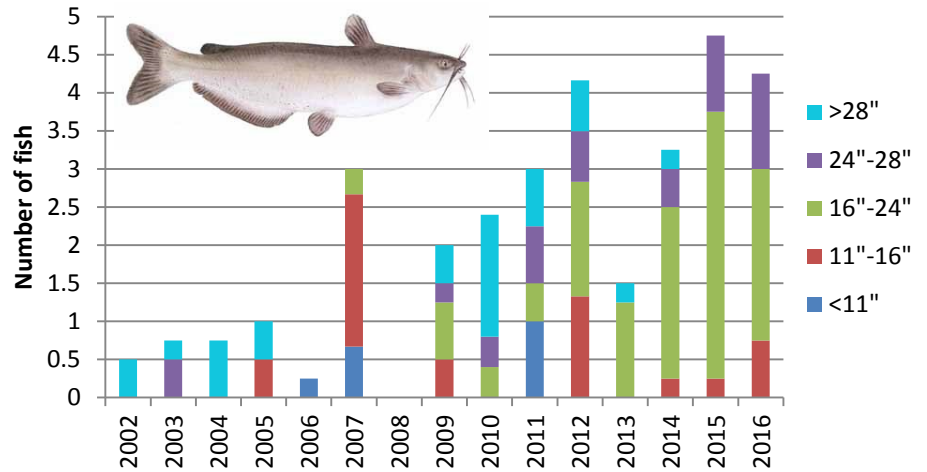
Although fish over the 28 inch mark have not been sampled over the past 2 years big catfish do reside in Merritt as indicated by angler reports in the creel each year.

Channel catfish abundance continues on an increasing trend although abundance still remains low when compared to other Nebraska reservoirs. Merritt does produce some trophy catfish each year and holds the state record which was caught in 1986 and weighed 41.5 pounds. Anglers should see similar success in 2016 on fish from 16-27 inches in length.

Requests have been made for 10,000 ten inch catfish to be stocked into Merritt in 2017. Efforts are being made to provide anglers with opportunities for trophy catfish.

Channel Catfish Regulations: Daily bag limit of 5 fish with a possession limit of 20 fish.

Channel catfish per gill net by length category



Fisheries Biologist Joe Rydell with a channel catfish caught from Merritt Reservoir

Walleye

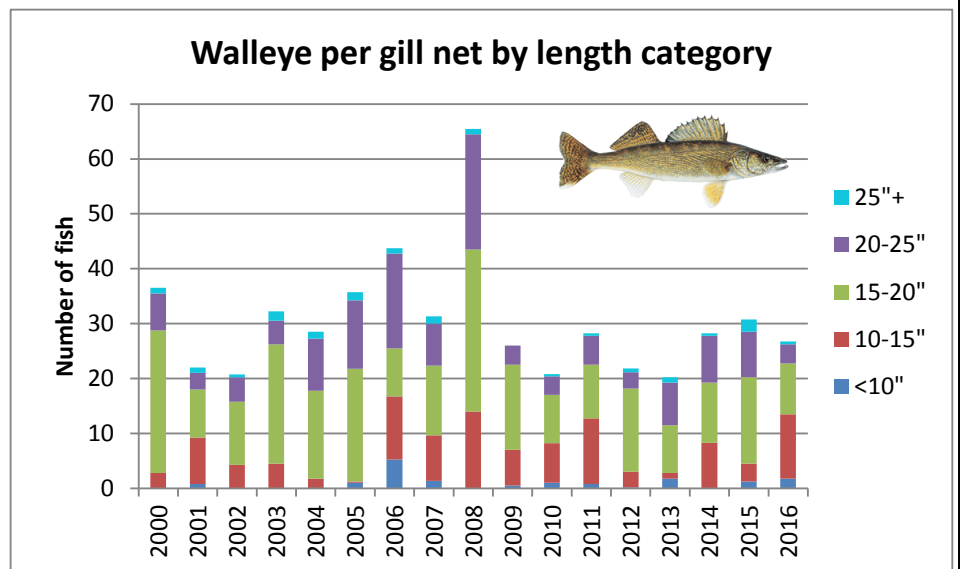
The walleye gill net catch decreased slightly from the 2015 survey with a catch rate of 26.75 fish per net. This catch is slightly below the average since 2000 of 30.5 walleye per net. The walleye population looks good with every size category sampled and strong year classes of 10-15 and 15-20 inch fish in the population. Of the walleye that were sampled, 49% of them were over the statewide minimum of 15 inches and 15% of the fish sampled were greater than 20 inches in length.

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 sampled during the 2016 survey averaged 15.2 inches with the largest measuring 27.8 inches and weighing 10.3 pounds.

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.

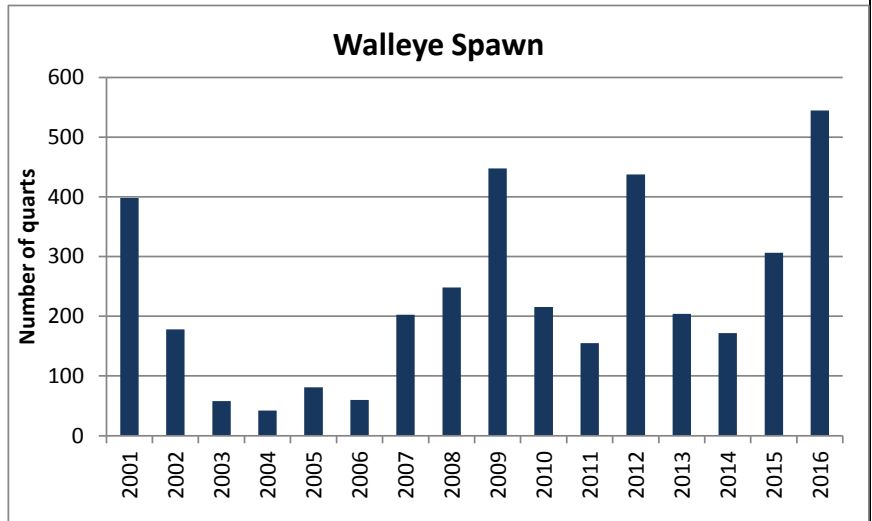
Anglers should see similar to improved success on walleye with strong year classes of 15-20 and 20-25 inch fish.

Right: Fisheries Biologist Joe Rydell with a walleye caught during the spring spawning operation weighing 11 pounds.



Walleye Spawn

Fisheries Division will again be conducting walleye spawn operations at Merritt, Sherman, and McConaughy Reservoirs in 2017. 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 2016 spawning operation, fisheries personnel collected 544.75 quarts of walleye eggs from Merritt Reservoir.

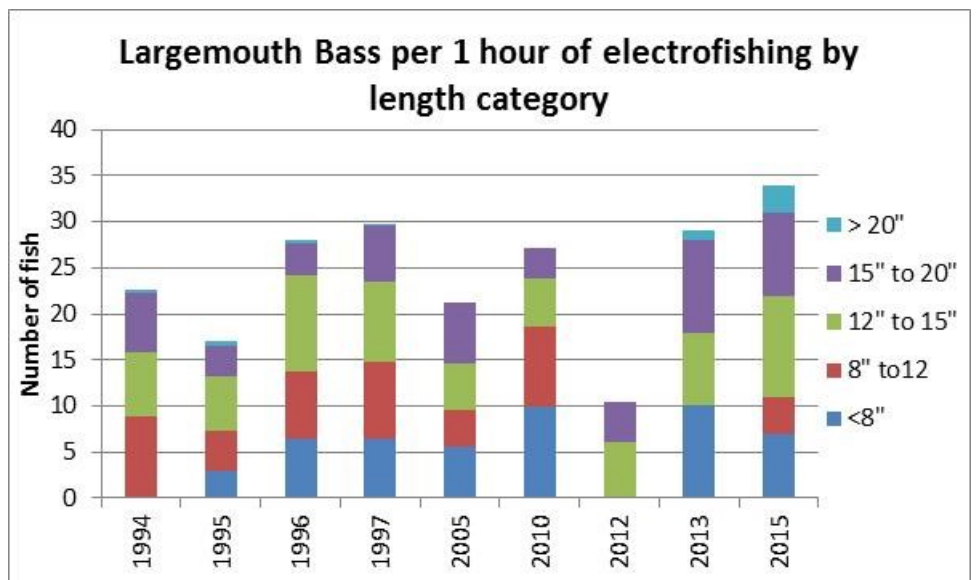
Right: Jaci Edis with a female walleye collected during the spawning operation at Merritt Reservoir.



Largemouth Bass

Beginning in 2013, largemouth bass and smallmouth bass populations will be surveyed on alternate years therefore no sampling data was collected in 2016. Surveys in 2015 sampled 34 largemouth bass per hour of electrofishing. This catch rate is the highest recorded since 1994 and reveals a population with excellent size structure. All size categories were sampled and 35% of the fish sampled were over the statewide minimum of 15 inches. Trophy fish over 20 inches was also the highest recorded since 1994. The largest fish sampled was 20.9 inches and weighed 6.1 pounds. Smallmouth bass provide additional angling opportunities at Merritt although sampling of this species can be relatively difficult. One smallmouth bass was sampled in 2015 and measured 15.4 inches.

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. The state record came from Merritt in 1992 and weighed 41.5 pounds. Abundance of northern pike has also increased over the past several years adding additional fishing opportunities especially in the spring.

Each spring nets are set to collect northern pike and muskellunge brood fish which will help produce pure strain muskellunge and hybrid tiger muskellunge (northern pike x muskellunge) for hatchery production needs. During the 2016 collections the largest muskellunge sampled measured 44 inches and weighed approximately 25 pounds. The largest pike sampled was during the spring walleye spawn operation and measured 42 inches and weighed approximately 16 pounds.

Regulations for northern pike allow a daily bag limit of 3 fish with a possession limit of 10 fish. Only 1 fish is allowed in the daily bag limit for muskellunge with a minimum of 40 inches in length.

Anglers generally target these fish during the early spring periods as shallow water temperatures start to rise. Strong year classes of fish in the 28-38 inch range should provide anglers chances at hooking into one of these powerful fish.

Right: Game and Parks personnel Tyler Osborn and Ted Bartels hold a muskellunge collected during 2015.



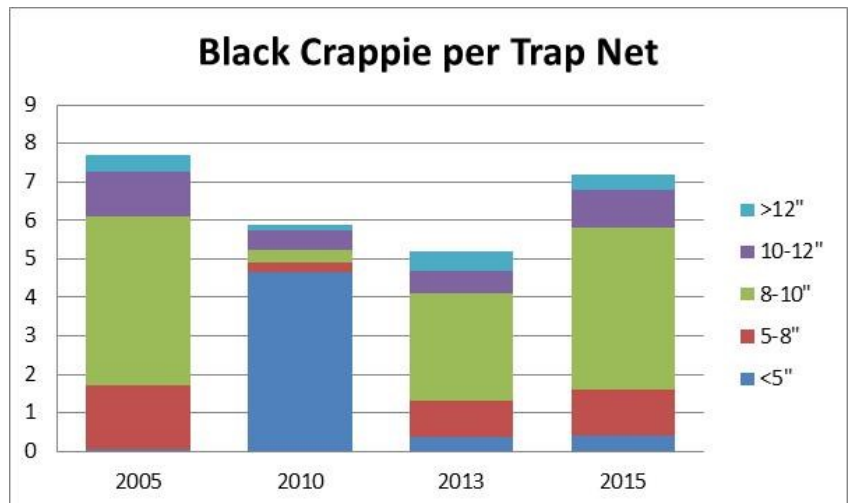
Black Crappie

Panfish populations such as black crappie are sampled every 2-3 years. In 2015, 7.2 black crappie were sampled per trap net. The black crappie population showed an excellent size structure with the largest measuring 13.7 inches.

Anglers at Merritt usually target these fish during the early spring spawning periods around shallow timber or smartweed beds found throughout the lake. These fish can also be found in the fall or winter months along submerged timber.

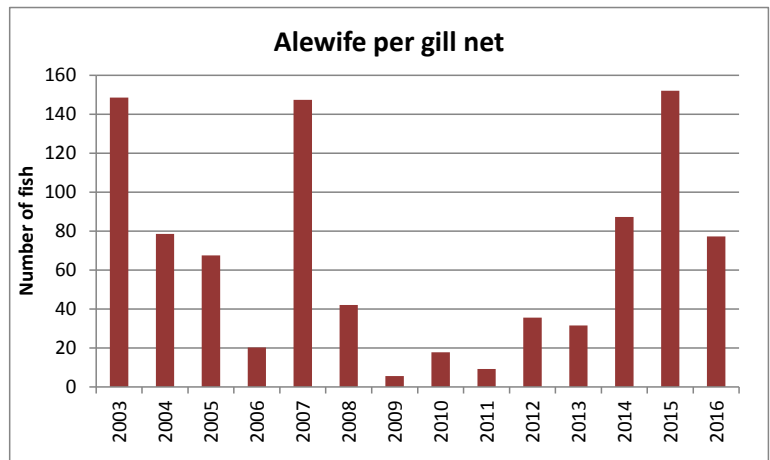
Yellow perch, bluegill, and pumpkinseed provide added opportunities for anglers at Merritt. These fish are usually targeted through the winter ice.

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



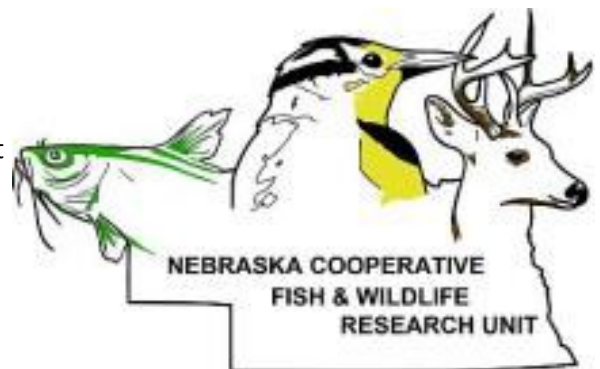
Alewife

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 78 fish per net in 2016 although age 1 alewife may have been too small to sample with our standard gill nets. Anglers who fished Merritt in 2015 and 2016 may have seen a tougher bite for fish such as walleye. These walleye are predators and very opportunistic, if something presents itself such as large prey numbers they are going to take advantage of it making the fishing a bit more difficult.



Angler Creel Survey

Angler creel surveys will be conducted at Merritt Reservoir in 2017. This study is being done by an agreement with the Nebraska Game and Parks Commission and the Nebraska Cooperative Research Unit through the University of Nebraska at Lincoln. This will be the 8th year of this joint effort and the survey will be conducted from April 1 until October 31, 2017. During the survey anglers are counted and interviewed for twenty randomly selected days per month, fourteen week days and six weekend days. Information gathered allows fisheries managers to look at estimates of angling pressure, size structure of fish caught, catch and harvest per species, and catch rates per hour. This information will assist managers in providing an optimum sport fishery. Cooperation with creel clerks is encouraged even if you have been creeled before; it will only take a few minutes of your time.



Angler Access Project-Merritt Reservoir

A new boat ramp is planned to be repositioned and constructed at Merritt Reservoir in 2017 if reservoir drawdown allows. This new boat ramp will provide boater and angler access for a longer duration during the summer months. A breakwater will also be built along the north side of the ramp and one across the cove (near Willow Cove Campground). These breakwaters will protect the ramp from north and south-west winds and slow sedimentation along the ramp. The breakwater at Willow Cove will also provide some additional bank fishing access.

Visitors are reminded that construction equipment may be entering the Main Landing boat ramp and Willow Cove campground areas for construction. Rock as pictured above has been stockpiled at each of these locations in preparation for the upcoming project.



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 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) 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.



Pictured Left: Photo of Eurasian water milfoil at Goose Lake Wildlife Management Area

For additional information about fisheries management at Merritt Reservoir please contact the following NGPC personnel by phone or email addressees listed below.

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

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

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

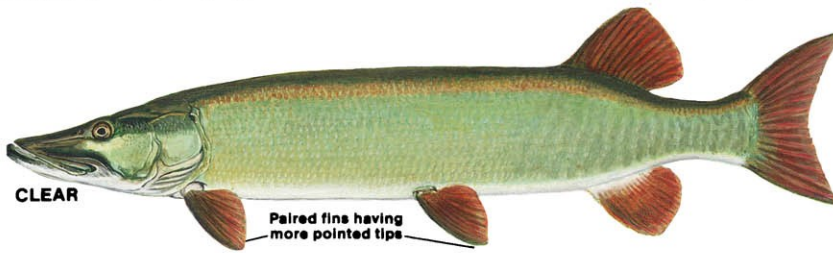
From the “Buy A Permit” page, look for this link:



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*)

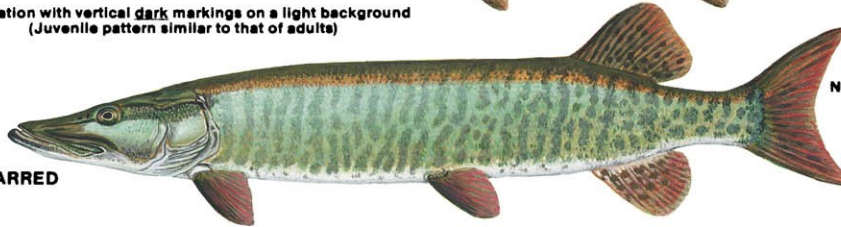


SPOTTED

Caudal fin with pointed tips

3 COMMON PATTERN VARIATIONS

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



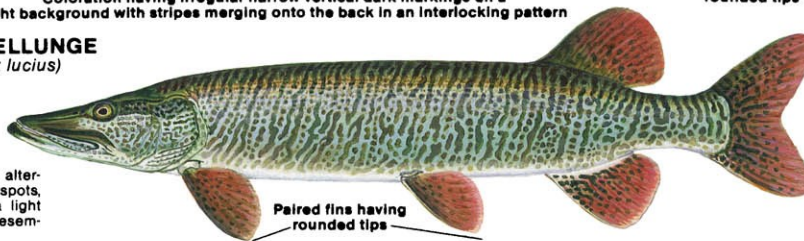
BARRED

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*)



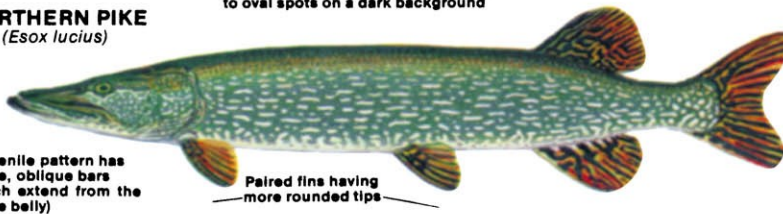
Paired fins having rounded tips

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

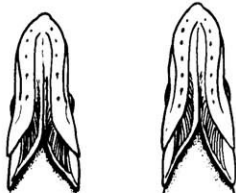
(Juvenile pattern has white, oblique bars which extend from the white belly)

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



Upper half of cheek and operculum with scales

MUSKELLUNGE



Entire cheek and upper half of operculum with scales

NORTHERN PIKE

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