

Merritt Reservoir

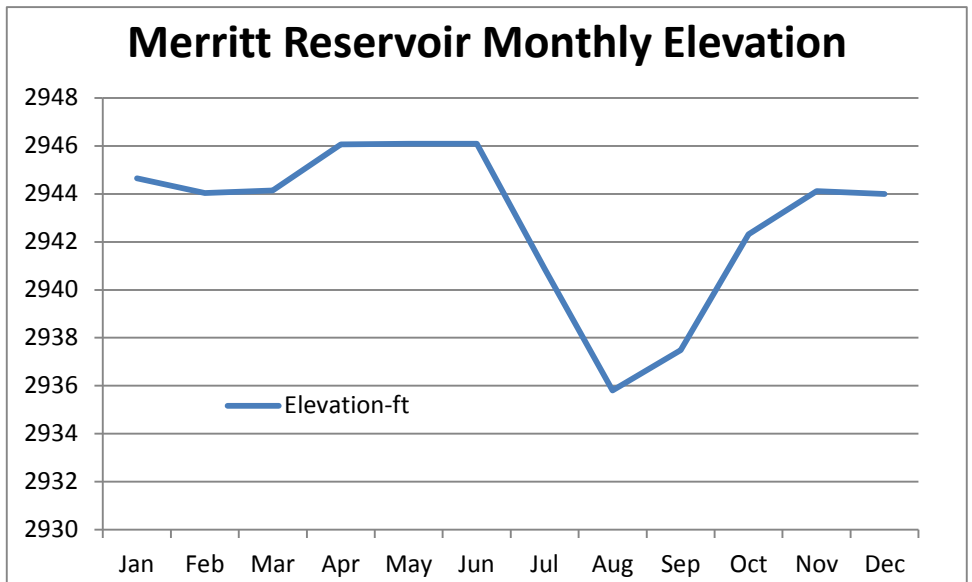
2015 Fall Survey Summary

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.



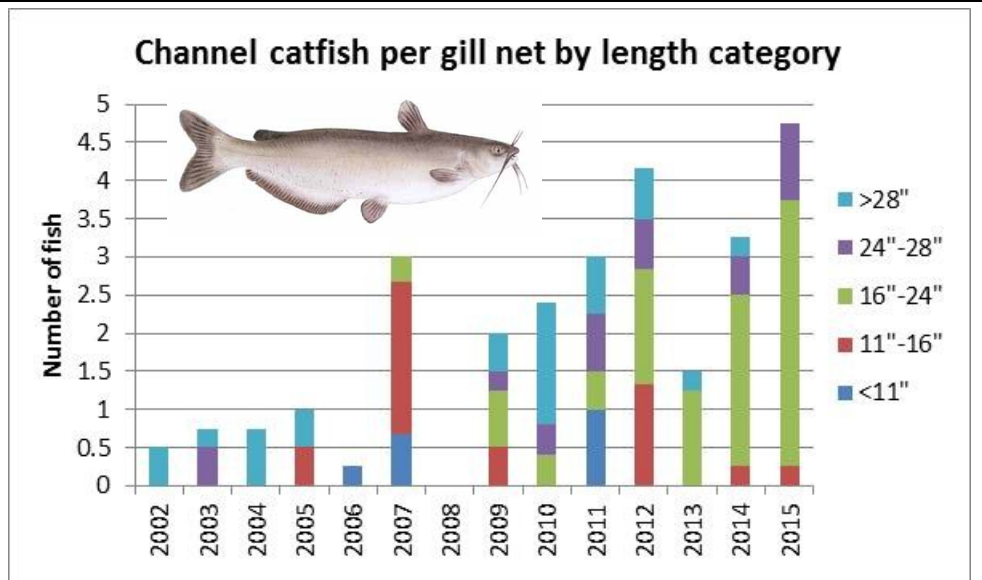
Facilities at Merritt Reservoir include nine campgrounds (four with electrical hookups and one with ADA accessible shower), one dump station, vault toilets, picnic shelters, two fish cleaning stations, five boat ramps with lighted parking lots, and an area concessionaire which provides permits, groceries, 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 2015. 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 continues to increase with a net catch of 4.75 fish per net in 2015. This net catch is over double the average catch since 2002 of 1.93 fish per net. Fish over 16 inches in length represented 94% of the population and fish greater than 24 inches in length was the highest recorded since 2002. Although no catfish were sampled over 28 inches, angler reports document fish over 28 inches in the creel each year. In 2015, channel catfish sampled averaged 21.5 inches with the largest measuring 27.9 inches.



Channel catfish abundance still remains relatively low compared to other waterbodies in Nebraska but Merritt produces some trophy catfish each year. The state record was caught at Merritt in 1986 and weighed 41.5 pounds. Anglers should see improved success in 2016 especially on fish from 16-24 inches in length.

Beginning in 2013 stocking rates for channel catfish were increased from 5 to 7.5 fish per acre or 21,750 fish. This stocking rate will be continued and monitored annually to document catfish numbers and size structure at Merritt to provide a quality channel catfishing opportunity

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



Fisheries Biologist Joe Rydell with a channel catfish weighing 30 pounds caught from Merritt Reservoir

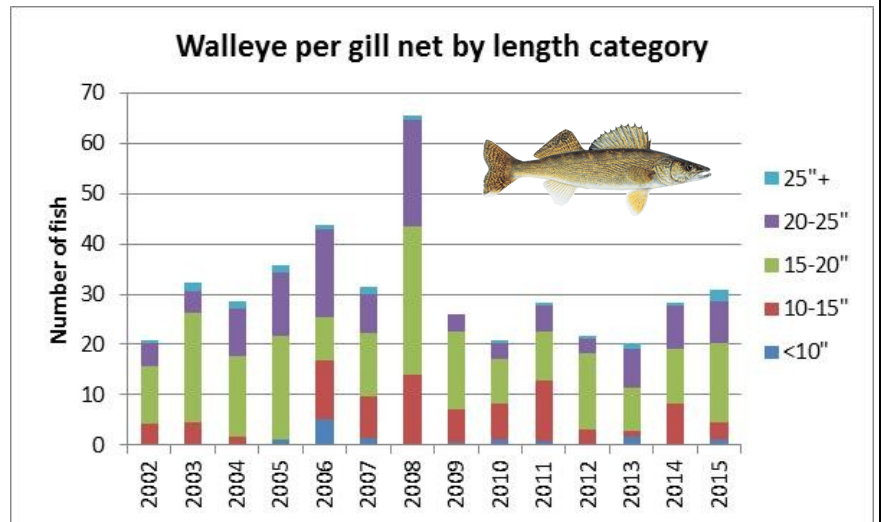
Walleye

The walleye gill net catch increased again in 2015 with a catch rate of 30.75 fish per net. This catch rate is also slightly above the 15 year average since 2002 of 30.4 walleye per net. The walleye population looks great with every size category sampled. Of the walleye sampled 85% were over the statewide minimum of 15 inches and 52% of the population was over 18 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 in 2015 averaged 18.3 inches with the largest individual measuring 26.5 inches and weighed 8.1 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 in 2016 should see improved success with strong year classes of 15-20 and 20-25 inch fish.



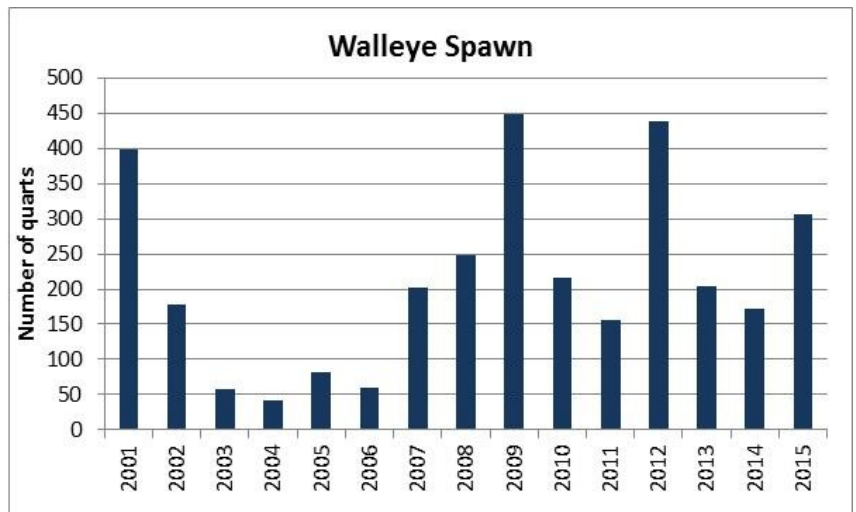
Top Right: Fisheries Biologist Andy Glidden with a walleye caught during the spawning operation weighing approximately 11 pounds. Right: Fisheries Biologist Brett Roberg with a 8.1 pound walleye.



Walleye Spawn

Fisheries Division will again be conducting walleye spawn operations at Merritt, Sherman, and McConaughy Reservoirs in 2016. 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 2015 spawning operation, fisheries personnel collected 306 quarts of walleye eggs from Merritt Reservoir.



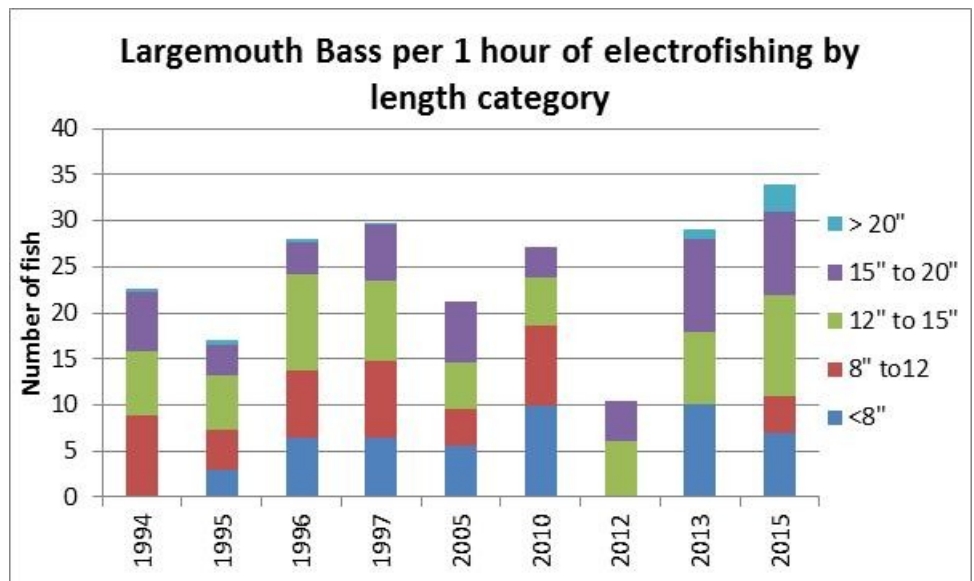
Largemouth Bass

Largemouth bass densities increased in 2015 with 34 fish sampled per hour. This catch rate is the highest recorded since 1994 and shows excellent size structure. Fish of all size categories were sampled and 35% of the fish sampled were over the statewide minimum of 15 inches. Fish greater than 20 inches was also the highest recorded since 1994. The largest fish sampled was 20.9 inches in length and weighed 6.1 pounds.

Smallmouth bass are also present in Merritt and provide additional angling opportunities. Sampling of this species can be relatively difficult as only one 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.

Anglers should see improved catch rates on largemouth bass for fish from 12-20 inches with chances at catching a trophy largemouth over 20 inches.



Muskellunge and Northern Pike

Merritt Reservoir continues to draw more anglers each year in search of muskellunge. The state record muskellunge came from Merritt in 1992 and weighed 41.5 pounds. Pike populations have also increased over the past several years adding additional angling opportunities.

In the spring brood fish collections occur at Merritt Reservoir for northern pike and muskellunge. This is done to meet hatchery production needs for northern pike, muskellunge, and tiger muskellunge (northern pike x muskellunge). In 2015, muskellunge and northern pike sampling showed great numbers and size structure for fish caught. The largest northern pike measured 44 inches and weighed 17 pounds while the largest muskellunge measured 48 inches and weighed close to 40 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.

Strong year classes of fish in the 26-35 inch range exist for both of these species which should increase angler success.



Right: District manager Al Hanson with the largest muskellunge collected in 2015.

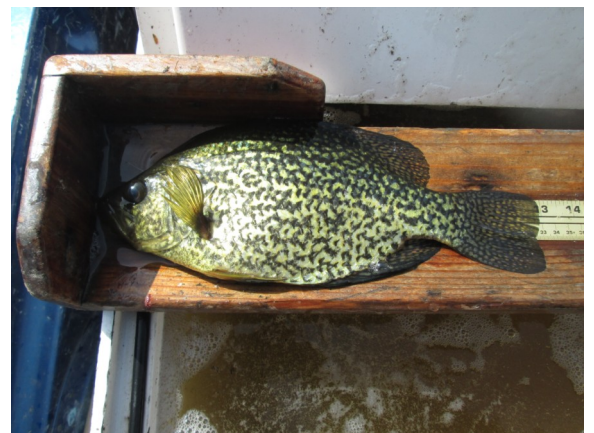
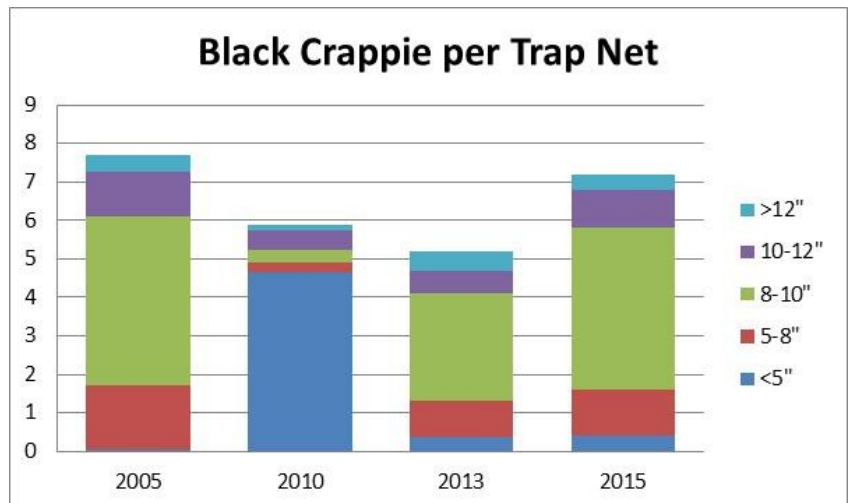
Black Crappie

The black crappie population looks good at Merritt Reservoir with 7.2 fish per net sampled. Every size category was sampled and these fish averaged 9.8 inches in length with the largest measuring 13.7 inches.

Anglers who target crappie at Merritt Reservoir usually can find good numbers of them during the early spring spawning period or throughout the fall and winter ice fishing season where they can be found along submerged timber.

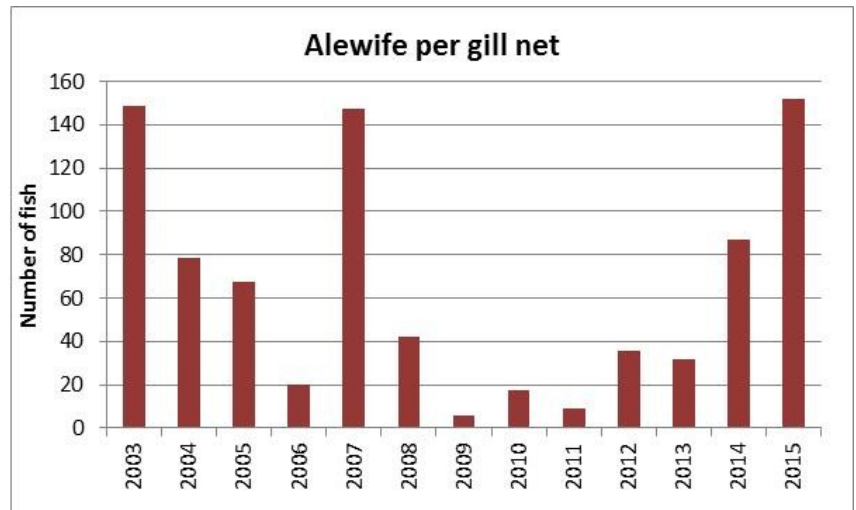
Anglers can also find opportunities for yellow perch, bluegill, and pumpkinseed at Merritt. These fish are usually targeted through out the winter ice fishing season or during the late summer when other species can be tough to find.

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



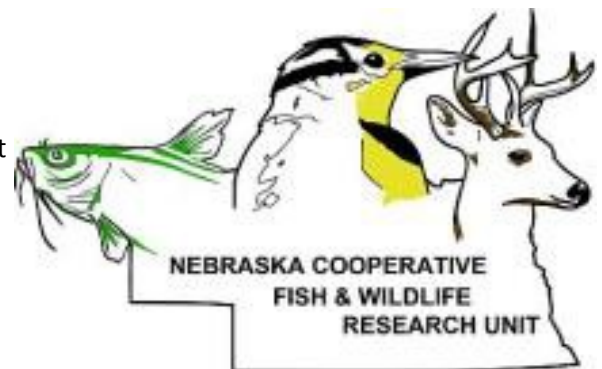
Alewife

Alewife are the primary prey fish in Merritt for the top predators such as walleye, northern pike, muskellunge, and largemouth bass. An increased catch rate in 2015 of 153 per net is the highest recorded since 2003. This catch rate can also be attributed to the somewhat difficult bite anglers observed in 2015. These fish compete immensely for food that small fish rely on and are also a predator on eggs of other fish species.



Angler Creel Survey

Angler creel surveys will be conducted at Merritt Reservoir in 2016. 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, 2016. 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 will be repositioned and constructed to what reservoir drawdown will allow at the main area and provide boater-angler access at that location for a longer duration during the summer months. A breakwater will be built along the north side of the ramp to protect from north winds and another breakwater is planned across the cove to the south-west of the ramp (near Willow Cove Campground area) to protect when launching from south-west winds and slow down sedimentation. This breakwater will also provide some bank angler fishing access.



This project was scheduled to begin in the fall of 2015 but due to higher than average lake levels it was rescheduled to begin in the fall of 2016. Visitors are reminded that construction equipment will be entering the Main Landing boat launch and Willow Cove campground areas in preparation of the construction.

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 in 2016:



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.

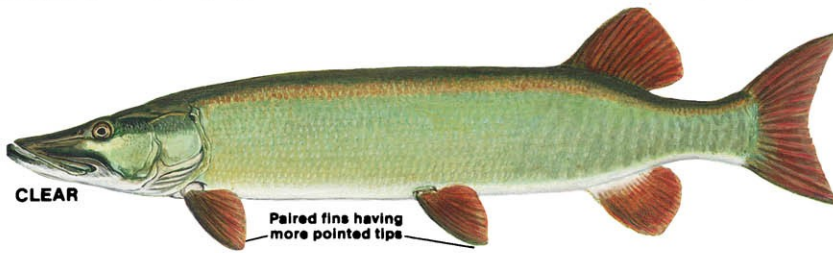
From the “Buy A Permit” page, look for this link:

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

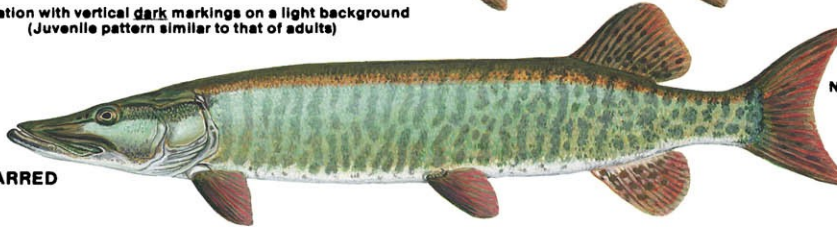
SPOTTED



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

Caudal fin with pointed tips

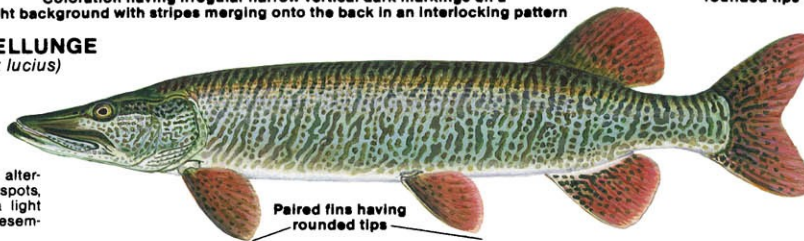
BARRED



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

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



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.

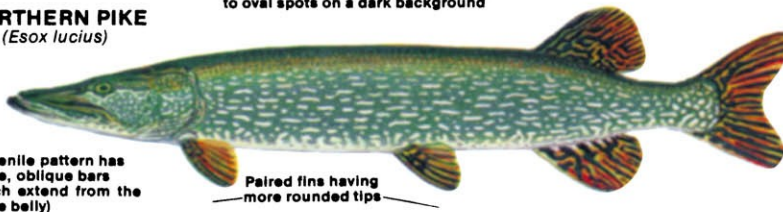
Paired fins having rounded tips

Caudal fin with rounded tips

NORTHERN PIKE (*Esox lucius*)

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

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



Paired fins having more rounded tips

Caudal fin with more rounded tips

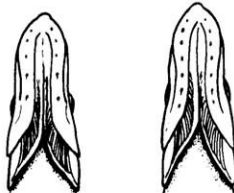
NOTE: Some areas may contain "Silver Pike" which is a mutant color variation of northern pike that lack the characteristic spots and have dark to light greyish/blue sides. Fin coloration normal for northern pike is exhibited in the "silver" variety.

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.