

# Merritt Reservoir

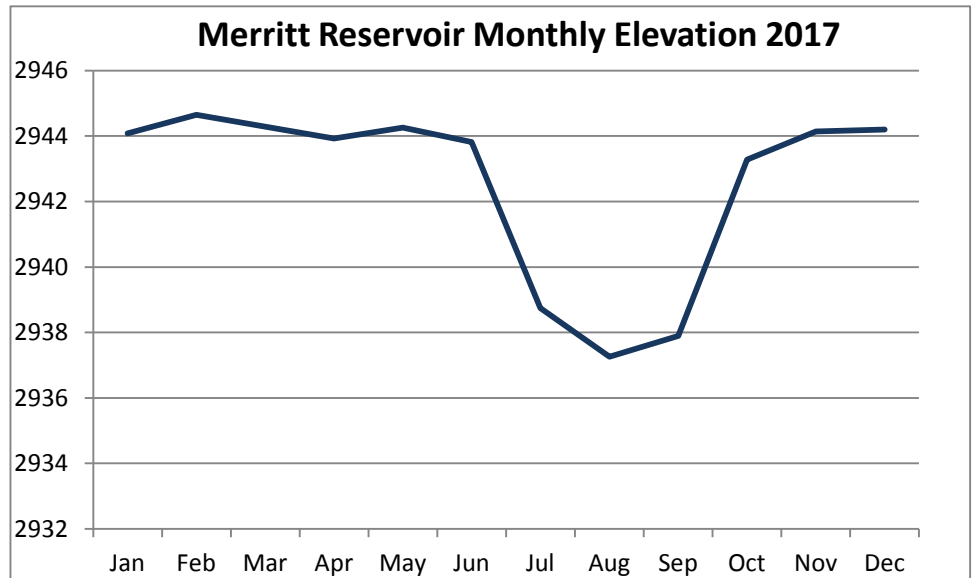
## 2017 Fall Survey Summary

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.



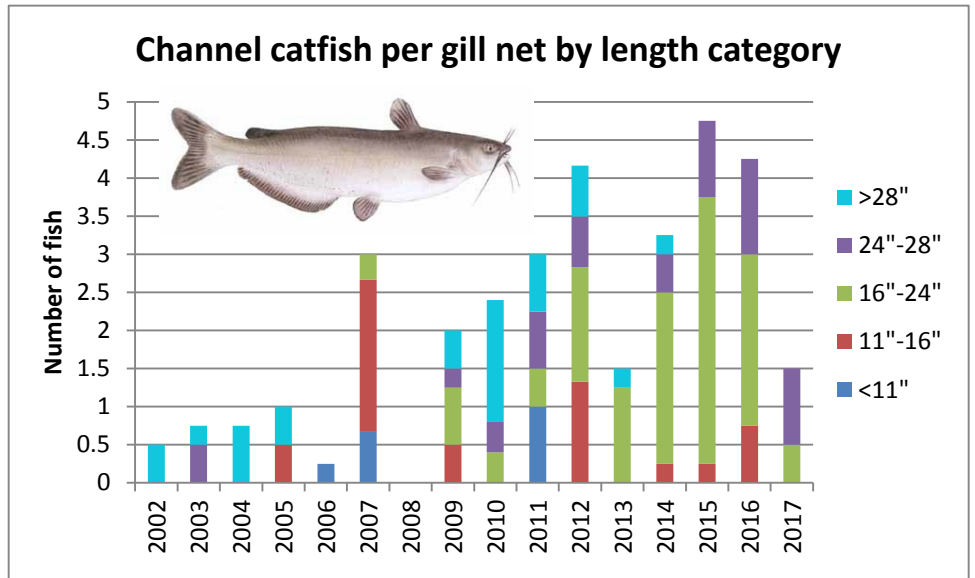
## Channel Catfish

Channel catfish abundance decreased again in 2017 only sampling 1.5 fish per net. Catfish sampled averaged 602 mm (23.7 inches) and the largest catfish measured 694 mm (27.3 inches). Sampling in 2017 showed that 66 percent of the population is over 24 inches in length.

Even with a low abundance of channel catfish Merritt does produce some trophies each year as indicated in angler creels and reports. The state record was caught at Merritt in 1986 and weighed 41.5 pounds.

Anglers usually target these bigger fish during the summer to early fall. Best luck seems to be working ledges and deeper water by drifting and anchoring with blood bait and shrimp.

Channel catfish are stocked in Merritt on alternated years ranging from 10-11 inches. Merritt will continue to be monitored on catch rates and stocking rates to document catfish abundance and size structure. Fisheries management goals are to provide anglers with opportunities at quality to trophy sized channel catfish.

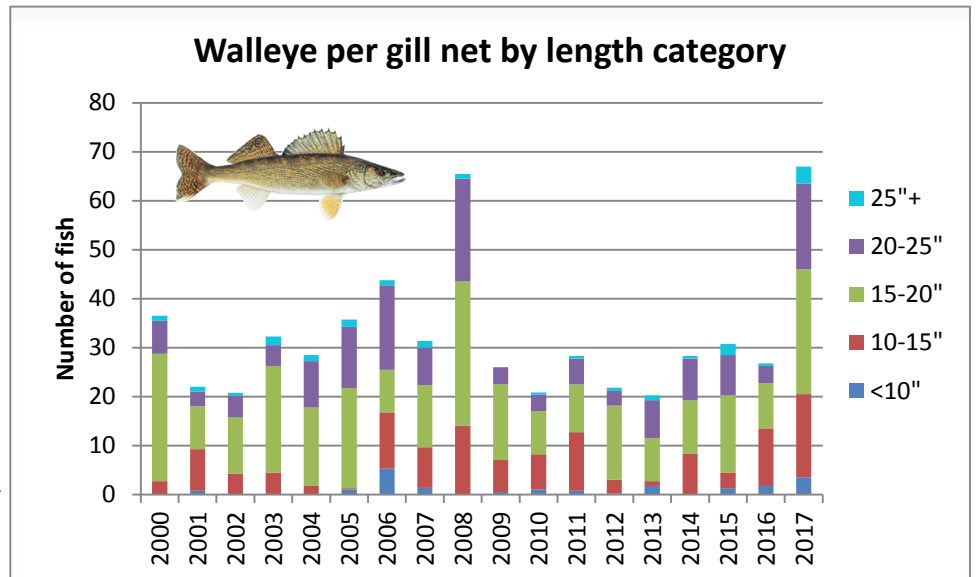


**Channel Catfish Regulations:**  
Daily bag limit of 5 fish with a possession limit of 20 fish.



## Walleye

The walleye gill net catch increased drastically in 2017 with a catch rate of 66 fish per net. This catch rate is double the average catch rate since 2000 of 32.5 fish per net. These fish showed an excellent size structure with all length categories sampled. Approximately 70 percent of the fish sampled were over the statewide minimum of 15 inches. Net catches of fish over 25 inches was 3.5 fish per net and the highest recorded historically. Walleye size averaged 447 mm (17.5 inches) and the largest walleye collected measured 696 mm (27.4 inches).



Anglers should see increased catch rates for walleye in 2018 with large year classes of 15-20 and 20-25 inch fish present in the population. 2009 was a phenomenal year for walleye fishing at Merritt and with similar catch rates this year it is looking like it could happen again.

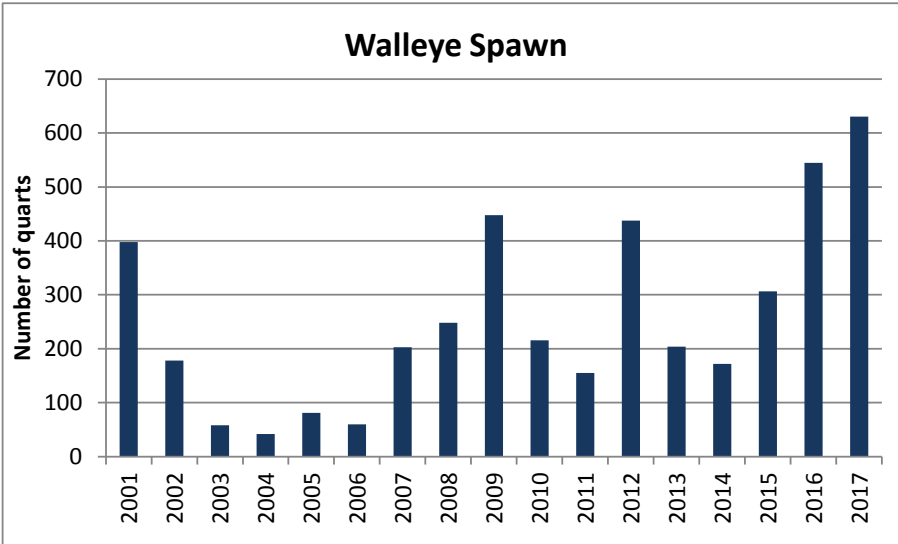
Walleye stockings at Merritt Reservoir occur in June each year with 214,875 fingerling (2 inch) fish. This stocking rate began in 2014 and is an increased stocking rate from 50 fish per acre to 75 fish per acre. This stocking rate will be continued over the next several years and documented with fall gill netting to determine abundances and health. Early indications seem to be successful with greater numbers of walleye sampled under 15 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 Spawn

Fisheries Division will again be conducting walleye spawn operations at Merritt, Sherman, and McConaughy 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 shoreline 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 April of 2017 approximately 630 quarts of walleye eggs were collected from Merritt Reservoir.

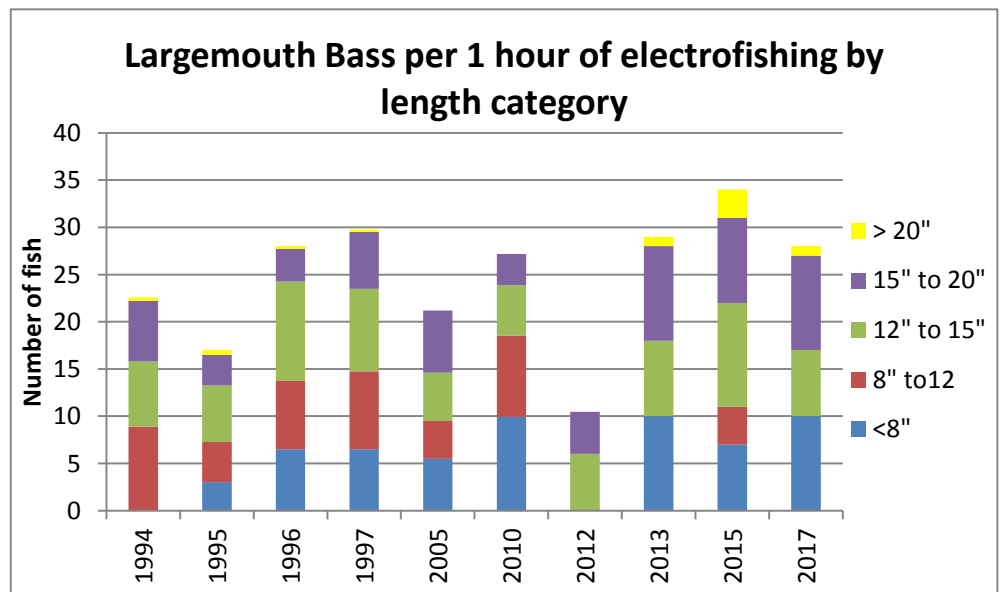


## Largemouth Bass

Beginning in 2013, largemouth bass and smallmouth bass populations at Merritt will be surveyed on alternate years. 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.

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 2017 collections the largest muskellunge sampled measured 45 inches and weighed approximately 32 pounds. The largest pike sampled was during the spring walleye spawn operation and measured 43 inches and weighed approximately 18 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 both of these species during the early spring periods as shallow water temperatures start to rise. Strong year classes of muskellunge in the 28-38 inch range should provide anglers chances at hooking into one of these powerful fish.



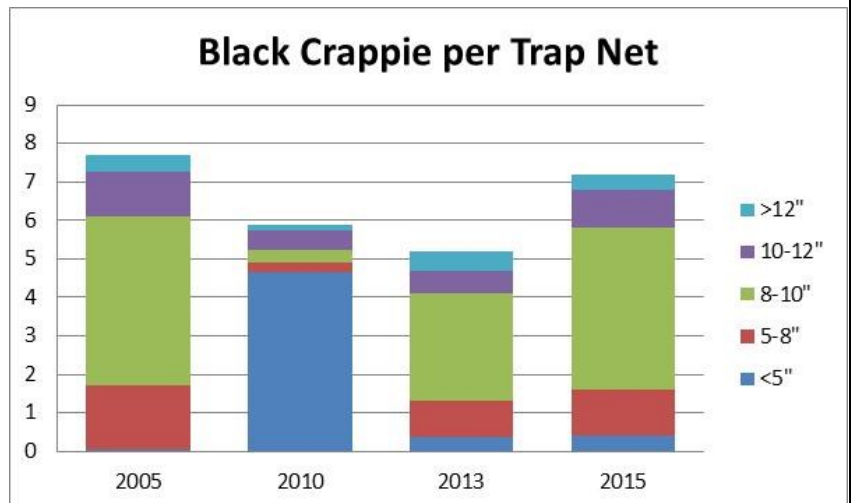
## Black Crappie

Due to time constraints no sampling was done for panfish populations at Merritt in 2017. Efforts will be made in 2018 to trap net these fish populations.

Anglers at Merritt usually target crappie 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.

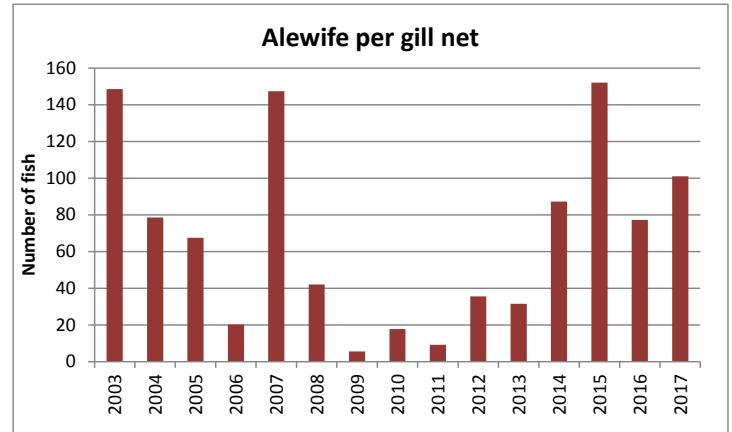
Yellow perch, bluegill, and pumpkinseed provide added opportunities for anglers at Merritt. These fish are usually targeted through the ice or later summer months when species such as walleye can be tough to find.

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



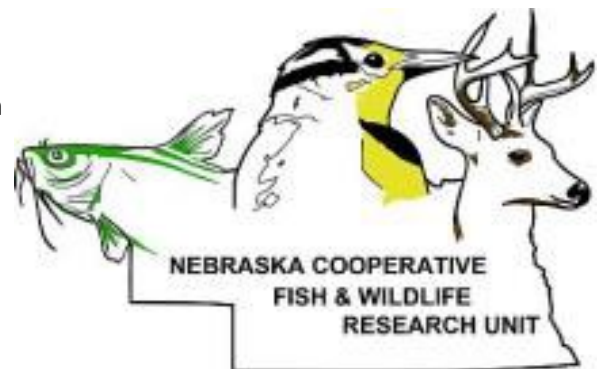
## Alewife

Alewife are the primary prey species in Merritt for the top predators such as walleye, northern pike, muskellunge, and largemouth bass. The catch rate for alewife increased to 101 fish per net in 2017. 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. Early reports from anglers are indicating several dead alewife under the ice at Merritt. This could be partially due to the colder weather we have been receiving as well as the ice cap on Merritt.



## Angler Creel Survey

Angler creel surveys were not conducted at Merritt in 2017 but will occur again in 2018. 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, 2018. 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 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 of 2018 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) 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](http://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](mailto:zac.brashears@nebraska.gov)

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

Juancarlos Giese (USFWS refuge manager), (402) 376-1889 [Juancarlos\\_giese@fws.gov](mailto: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](http://www.outdoornebraska.org) and at some agency offices.

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

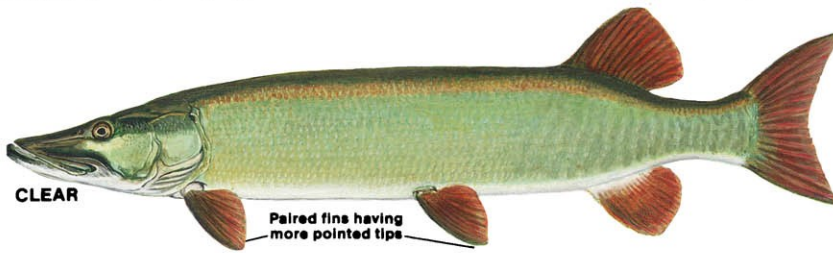


Learn more about invasive species at [www.neinvasives.com](http://www.neinvasives.com).



# 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**

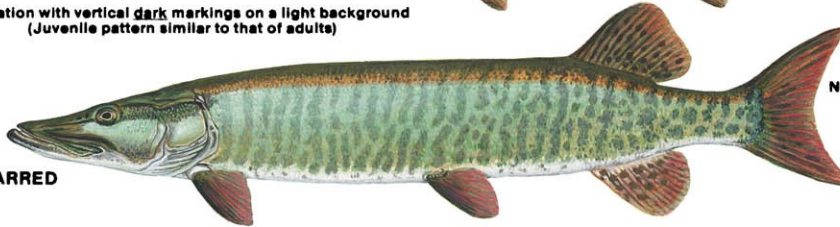
**SPOTTED**



Caudal fin with pointed tips

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

**BARRED**

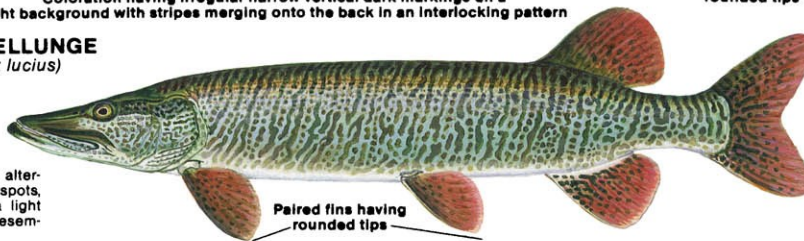


**NOTE:** Background colors of fish can vary slightly depending on environmental characteristics of the water body and its geographic location. One marking pattern may dominate in an area, but all 3 can be present.

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*)



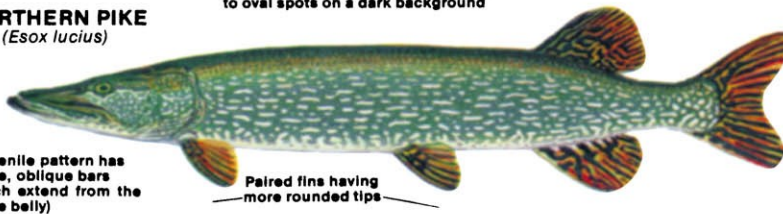
Paired fins having rounded tips

**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

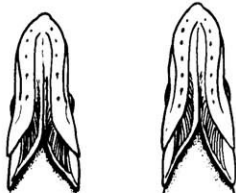
(Juvenile pattern has white, oblique bars which extend from the white belly)

**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](http://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 3/4 or more of cheek and upper half of operculum with scales.