

Northwest District Sandhills Lakes

2016 Survey Summary

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Introduction

The sandhills region of Nebraska is a unique geographical region comprised of stabilized sand dunes, exposed groundwater lakes in the valleys, and perched mineralized lakes on poorly drained soils. A few lakes are watered by artesian wells and springs while the majority of lakes depend on the water table and fluctuate with its seasonal levels. Most lakes in the sandhills region are either too shallow or too alkaline to support a long-term fishery. Sandhills lakes are typically shallow, vegetated, highly productive systems with fisheries that typically consist of yellow perch, bluegill, black crappie, largemouth bass, northern pike, black bullhead, and green sunfish. The following summary is for sandhills lakes with public access that were surveyed in 2016. Fisheries data from the Valentine NWR is available in its own summary at <http://outdoornebraska.gov/fishsamplingreports/>. An interactive map of lake locations and species composition can be found at <http://maps.outdoornebraska.gov/fishing/>.

Sampling Methods

Sandhills lakes typically get surveyed at least once every 3 years for each priority species. Largemouth bass are surveyed at night by electrofishing while shoreline oriented species (bluegill, crappie, yellow perch, and northern pike) are sampled using frame nets. A couple sandhill lakes have walleye that get sampled by gillnets in the fall. Species collected during a survey are counted, measured, weighed, and some scales removed for aging before releasing them back. Biologists use this information to



monitor the health and size structures of each fish population. The following graphs and commentary are from surveys conducted in 2016 with suggestions on which sandhill lakes should produce quality fishing for each species. Most fish surveys conducted in 2016 targeted northern pike, bluegill, and yellow perch. Anglers are reminded they should not rely solely on what the surveys indicate as patterns of weather and timing of the surveys could have effects on catch rates for certain species. For example yellow perch and northern pike are sampled in late March or early April when they are moving into the shallows to spawn, this can happen relatively quickly even within a few days making sampling of this species in several waterbodies relatively difficult.

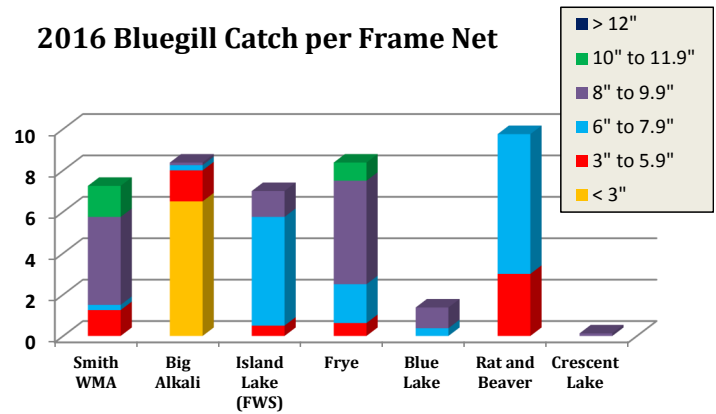
Bluegill:

2016 should be another great year for big bluegill in the Sandhills. Most of the sandhill lakes surveyed produced bluegills over 8 inches with Smith Lake WMA and Frye Lake having the biggest with fish over 10 inches. All lakes sampled had bluegill catch rates under 10 fish per net. Smith Lake WMA and Frye will be the best lakes for bluegill with good size structures with mostly big (> 8 inch) bluegill. Big

Alkali and Rat and Beaver Lakes both had decent numbers of bluegill, but they were mostly small. Rat and Beaver Lakes were renovated in 2014 but the bluegill are growing fast. Anglers should find fish over 8 inches by the end of 2017. Island Lake bluegill are looking great this year with an average size of 7.5 inches.

Anglers fishing from the bank seeking bluegill should consider Island Lake or Walgren Lake as both of these lakes have fishing piers. Shore fishing on most sandhill lakes is challenging due to abundant vegetation and is best approached with waders or a float tube.

2016 Bluegill Catch per Frame Net

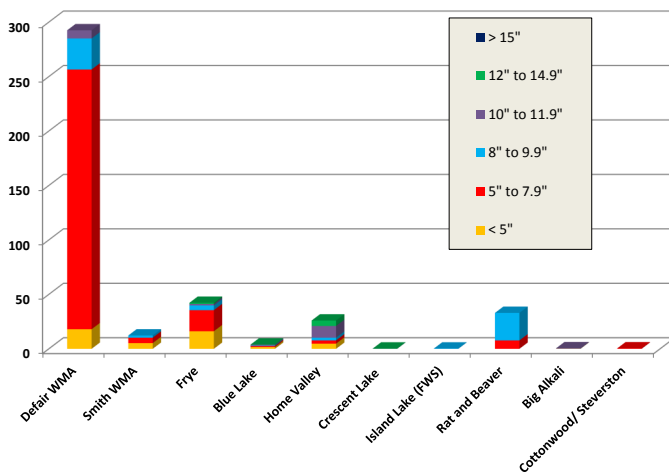


Yellow Perch

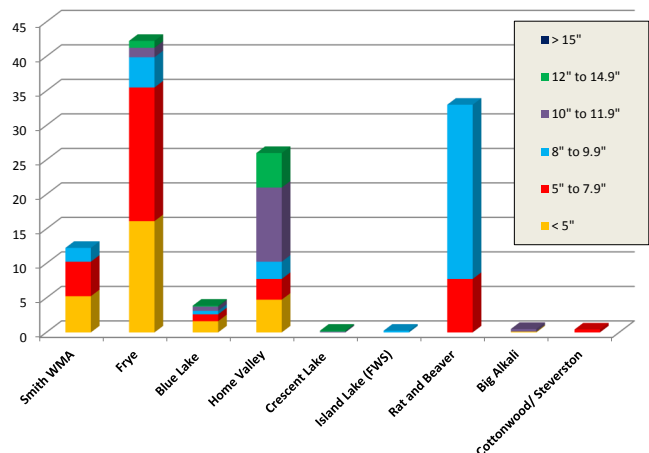
Yellow perch are one of the most sought after panfish species in the sandhills. These highly productive lakes have the potential to grow perch between 12 and 15 inches if they can evade anglers long enough. Yellow perch are aggressive most of the year making them a great species to start new anglers on.

Defair Wildlife Management Area had the highest abundance of perch in 2016 at 292 perch per frame net with 87% of them less than 8 inches in length. These perch are in good condition but anglers will likely struggle with the abundance of perch under 8 inches while seeking the few larger fish. The graph on the bottom right has the Defair sample removed to better illustrate the remaining yellow perch surveys.

2016 Yellow Perch Catch per Frame Net



2016 Yellow Perch Catch per Frame Net



Yellow Perch (Continued)

Home Valley had the best size structure with a catch rate 26 perch per net and 60% of the catch over 10 inches. The average size perch at Home Valley in 2016 was 9.4 inches in length with over 19% of the population over 12 inches. Home Valley is a tough lake to get to and receives almost all of its fishing pressure through the ice.

Frye Lake had the second highest abundance of yellow perch in 2016 with a catch rate of 42.25 fish per frame net. Although some fish over 10 inches remain in the population, 84% of the catch was less than 8 inches in length. Frye Lake is a very productive sandhill lake and the strong two-year-old year-class should reach 10 inches in a couple years and provide some excellent fishing down the road.

Rat and Beaver Lakes are coming back strong after the 2014 lake renovation. Yellow perch catch in 2016 was over 30 fish per net and an average size of 8.3 inches. Rat and Beaver yellow perch have a special size regulation requiring them to be longer than 12 inches before anglers can take them home. This regulation will protect the perch population until several year-classes are established.

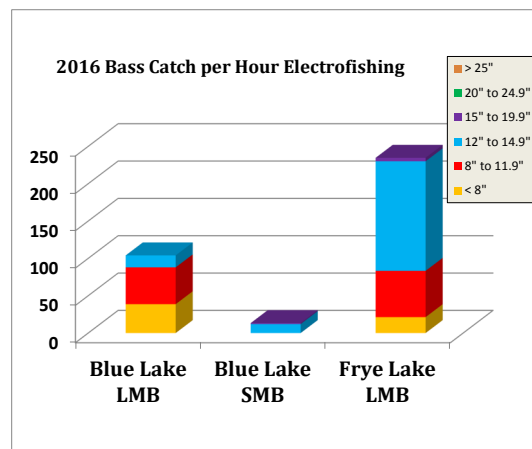
Blue Lake perch catch dropped to 3.8 fish per net in 2016. Heavy fishing pressure over the last 4 years has reduced the perch abundance and created a void in the fishery that is quickly being re-filled by common carp. Yellow perch in 2016 appeared skinny with a mean relative weight of 86; body condition was worse for larger fish. The abundance of common carp has also contributed to the reduced water clarity.

Largemouth Bass:

Blue Lake and Frye Lake were the only sandhill lakes surveyed for bass in 2016. Frye Lake has a high abundance of largemouth bass with a catch rate of 234 fish per hour electrofishing. The average size bass was 12.1 inches with very few legal (> 15 inches) fish.

Blue Lake is a unique bass fishery as it has both largemouth and smallmouth bass. Largemouth bass made up the majority of the bass population, however the smallmouth were in good condition and larger with most fish just under 15 inches. The average size largemouth was 8.6 inches and smallmouth was 14.4 inches.

Anglers looking for big bass should also consider Smith Lake WMA in Sheridan County, Home Valley, or Island Lake on the Crescent Lake NWR. These lakes have the potential for fish over 4 lbs. The bass below was caught at Home Valley in December of 2016 by a local ice fisherman.



Crappie:

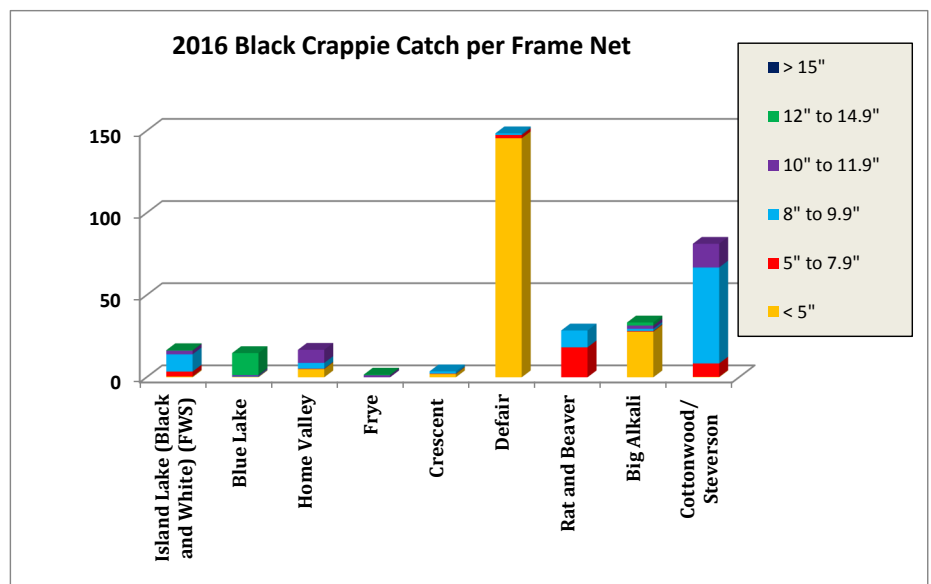
Defair had the highest density of crappie in 2016 with 148 fish per frame net. However, nearly all of the catch was less than 5 inches.

Cottonwood and Steverson Lakes had the second highest catch with 81 fish per net and an average size of 8.1 inches with 17% of the population over 10 inches. Water clarity is usually very turbid in Cottonwood and Steverson and anglers may have better luck using live bait or fishing bright colored lures.

Anglers looking for big crappie should fish Blue Lake. This population is still dominated by the initial year-class stocked in 2008 following the lake renovation. With a catch rate of 14.75 fish per net, over 90 percent of the population is over 12 inches. Several lakes have the potential for crappie over 12 inches. Island Lake had a strong population of crappie with most of them 8 to 10 inches but some white crappie were collected over 12 inches. Frye Lake did not have a great crappie catch in 2016, however all fish were over 10 inches. With the amount of quality habitat in Frye Lake, it is likely the population is better than the survey suggests and anglers should not be discouraged due to the low catch rate.

Crappie at Rat and Beaver, like all other species stocked, are growing fast following the renovation in 2014. With a catch rate of 28.5 fish per net, several crappie are already pushing 9 inches after 2 growing seasons. Home Valley also recently received an introductory stocking of crappie in 2013. These fish are doing exceptional with 47% of the catch over 10 inches.

Early May is the best time of the year to target crappie in the sandhills. Fishing small jigs, inline spinners, beetle spins, and minnows on a bobber where live baitfish are allowed are all popular methods for catching crappies.



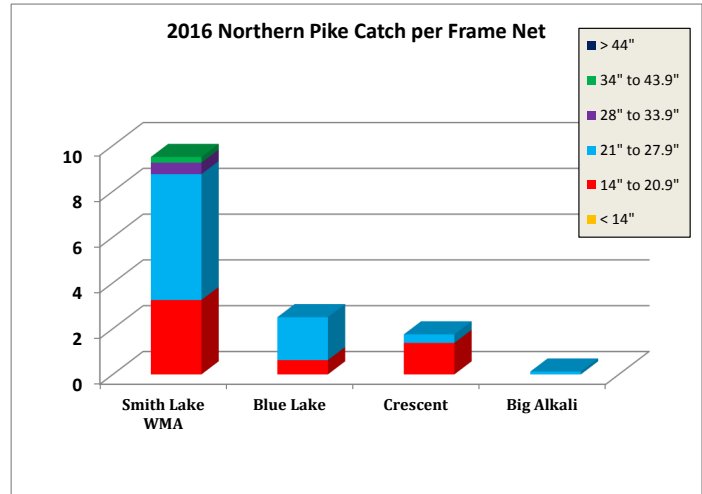
Northern Pike:

Northern Pike were sampled in four sandhill lakes in 2016. Although all 4 lakes had low abundance of pike (less than 10 per net), anglers should still expect some good success fishing for pike in the sandhills. Smith Lake WMA had the highest abundance with 9.5 fish per net and an average size of 22.7 inches. This lake also had the biggest pike surveyed with some fish over 34 inches.

Northern pike were first stocked into Crescent Lake in 2014 to help control the common carp population.

With high waters in 2015, some pike swam up the drainage into Blue Lake. These fish were extremely healthy and averaged 23 inches in Blue Lake and 18.4 inches in Crescent.

Anglers looking to pike fish the sandhills should take a look at the Valentine NWR. Several Lakes on the refuge have excellent pike populations and some very large individuals (see the Valentine NWR survey summary at <http://outdoornebraska.gov/fishsamplingreports/>). Walgren Lake, Cottonwood State Recreation Area, and Ballards Marsh WMA also have fishable pike populations.



Invasive Species

Curly-leaf pondweed consumed Smith Lake WMA nearly 100 percent starting in 2015. This invasive plant has a tendency to grow fast and shade out native vegetation while making fishing difficult. Curly-leaf starts growing early in the year and reaches maturity by late June. The vegetation dies back by late July and releases an abundance of nutrients that typically result in a blue-green algae bloom. In 2016 curly-leaf pondweed covered nearly 95 percent of Smith Lake. This plant was likely brought in attached to a boat as it only takes a piece of this plant to become established. It is important to remove all vegetation from your boat and trailer before leaving the boat launch area and **CLEAN, DRAIN, and DRY** your watercraft and fishing equipment before launching on another body of water.



Bluegreen algae at SmithLake WMA



Curly leaf pondweed at SmithLake WMA

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 documented 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.



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.

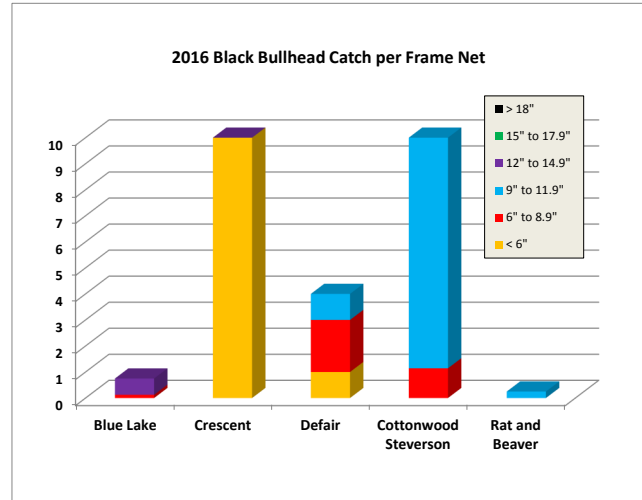
Learn more about invasive species at www.neinvasives.com.

Other Species

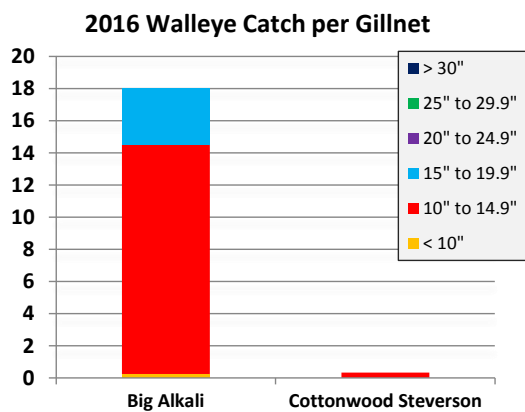
Green sunfish and black bullheads are two native species to the sandhill region of Nebraska and several lakes provide fishing opportunities. The biggest bullheads were found in Blue Lake while Crescent and Cottonwood-Steverson had the highest abundance.

Common carp are plentiful in many sandhill lakes and can cause undesirable impacts to the fisheries. Anglers are encouraged to fish for and keep carp from sandhill lakes. Contact the local fisheries offices for tips on where to look for these species.

Frye Lake, Cottonwood-Steverson WMA, Home Valley, Big Alkali, and Island Lake all contain walleye. Big Alkali had a great catch in 2016 with 18 fish per gillnet. The average size walleye in Big Alkali was 13.9 inches with 19% of the catch over 15 inches. Island has been stocked since 2013 annually with fingerling walleye. Frye Lake and Home Valley both have natural recruiting populations of walleye with some fish over 5 lbs. Crescent Lake WMA was stocked with sauger in 2013, and 2014. In 2015 walleye and sauger stockings were replaced with saugeye in Cottonwood-Steverson WMA, Big Alkali, and Crescent. Saugeye is a hybrid between a walleye and a sauger. These fish seem to be more shoreline oriented and Fall electrofishing surveys indicate excellent survival in these sandhill lakes.



Both Cottonwood-Steverson WMA and Crescent Lake have been stocked with muskellunge. Crescent has only had one year of stocking, but Cottonwood-Steverson has a good musky population with some fish over 40 inches.



For additional information about fisheries management in the sandhills please contact the following personnel by phone or email address listed below.

District Supervisor:	Al Hanson	308-763-2940	al.hanson@nebraska.gov
Fisheries Biologist:	Joe Rydell	308-763-2940	joe.rydell@nebraska.gov
Fisheries Biologist:	Zac Brashears	402-376-8080	zac.brashears@nebraska.gov