

2018 Survey Summary

Sandhill Lakes

Northeast District



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This summary pertains to those Sandhill lakes located in the Northeast District that were surveyed in 2018. Earlier data has been retained for comparisons. Panfish species and northern pike are sampled in the spring with frame nets. Largemouth bass are sampled in the spring with night-time electrofishing gear. Walleye are best sampled with gill nets in the fall. Some lakes are sampled annually but most are surveyed rotationally every other year or every 3 years. Sandhill lakes can be naturally formed and are typically shallow and spring fed. Sometimes these lakes were formed when upstream hay meadows were ditched during the early settlement days or a drainage was blocked. These lakes are very productive and well suited to panfish species such as black crappie, bluegill and yellow perch as well as largemouth bass and northern pike. Additionally, we now have an expanding walleye population in Willow Lake. Current regulations include an aggregate 15 fish daily bag limit on panfish with a possession limit of 30. Statewide minimum length limits are 15" for bass and walleye with a daily bag of 5 and 4 respectively, possession limit is twice the daily bag. Only one bass in the daily bag limit can be over 21" and only one walleye over 22" is allowed. The statewide daily bag limit for northern pike is 3 with only one 34" or longer with a possession limit of 10.

The drought of 2012 has been affecting many lakes in the Sandhill region, extended periods of low water levels may lead to summer and/or winter kills. While rainfall was above average in 2013-16 in the NE District, some of the lakes discussed in this report continued to decline in depth due to lower ground water levels. In 2017 Brown County recorded the driest spring on record, then after late July, one of the wettest falls. 2018 has been one of the wettest as well and these lakes are beginning to fill. Of the 9 lakes discussed in this summary Clear, Goose, Peterson, Swan and Willow are at or near full pool. Only Cozad, Tower and Twin remain 2 feet or less below full pool. Drought years can provide an excellent opportunity to conduct renovations to remove common carp from Sandhill lakes. Because renovations are so costly and very difficult for 100% success in large Sandhill lakes, anglers must not move carp or other unwanted species back into renovated lakes from a minnow bucket. One of the biggest accomplishments for 2018 was the completion of the Twin Lakes carp barrier which will prevent carp from swimming back into Twin and its headwaters.

Upstream



Downstream



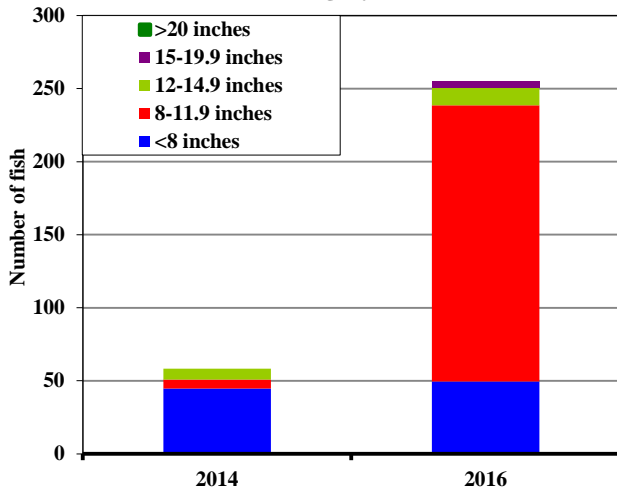
Secondary Outlet

Main Outlet

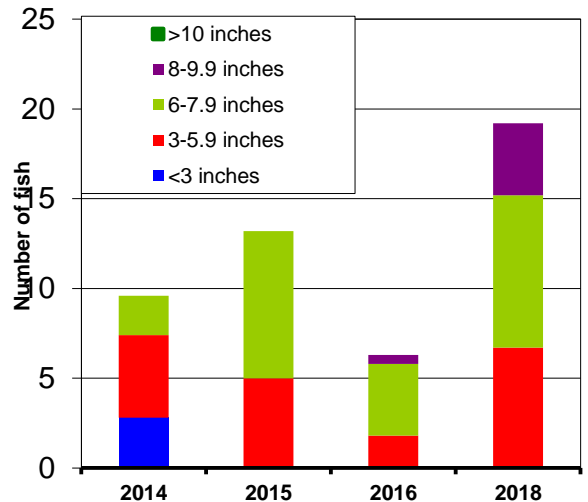
Clear Lake

Clear Lake is located approximately 19 miles south and 9 miles west of Ainsworth. It is a privately owned natural sandhills lake with no inflow or natural outflow. Carp had gained access to the lake via a man-made ditch and they eventually destroyed the water quality. This drainage ditch has since been filled. The lake was renovated in December of 2012 by NGPC Fisheries Division. The New Clear Lake Club, the US Fish & Wildlife Service and the Sandhills Task Force, split the cost of the chemical (rotenone) that was used to remove the carp population. A year-round public fishing access on the east end of the lake has been provided through an agreement with the New Clear Lake Club. The lake is near “full pool” with current maximum depth of @ 11 feet.

Bass per 1 hr electrofishing by length category

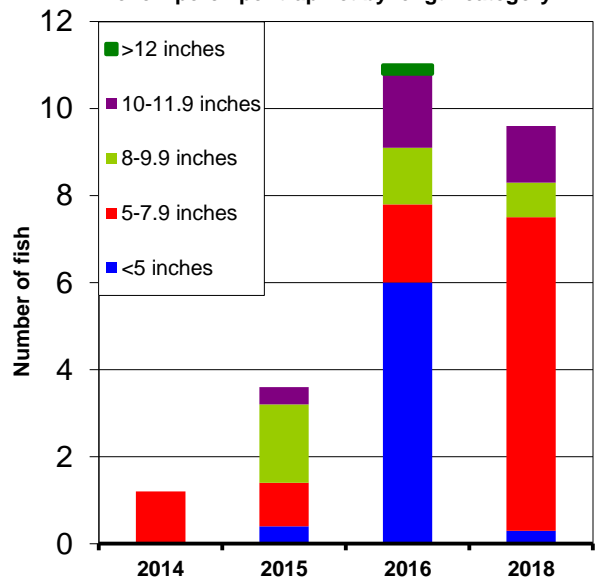


Bluegill per trap net by length category



The lake was frame netted in May of 2018. No black bullhead or carp have been sampled since the renovation and only five black crappie were collected. The crappie illegally introduced prior to our state stocking and may have been an influence on the establishment of perch and bluegill populations, usually all fish populations “boom” following a renovation, but we are finally seeing improvement. This later May frame netting targets bluegill and crappie and more likely to miss the bigger spawning perch. However, our catch rate of perch over 5 inches improved. Bluegill catch for fish over 3 inches more than tripled. We did not get back to electrofish for bass, hopefully next year. Anglers success has been improving for summer/fall and through the ice, with some crappie being caught. The bass population looks good and will have their work cut out for them to control panfish numbers as aquatic vegetation becomes established. Water clarity is excellent, it is once again “Clear Lake”.

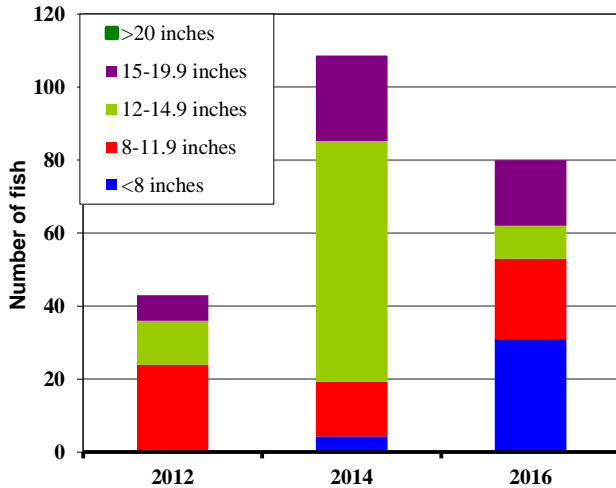
Yellow perch per trap net by length category



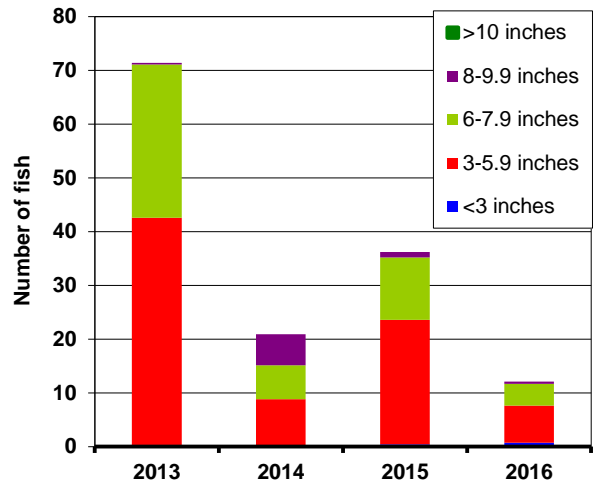
Cozad Lake

Cozad Lake is located on South Pine Wildlife Management Area (WMA) approximately 12 miles south and 1 mile west of Long Pine. It is a natural sandhills lake which usually has no inflow or outflow. During very high water events, water can come from a marsh to the south and runs out the northeast corner of the lake and flows down a bar ditch headed east, but runs out into a pasture. It has never had a carp population, water quality is excellent and it grows a tremendous amount of vegetation. A handicap accessible parking area and boat ramp were installed in 2001. The biggest challenge with this lake is related to water levels. In June of 2010 there was water over the road for almost a mile of the county road leading to the parking area. From 2013-17 it was over 3 feet below the high water mark. Currently the lake is @ 2 feet below the “full pool” but it has improved as the boat ramp is extending into the water.

Bass per 1 hr electrofishing by length category

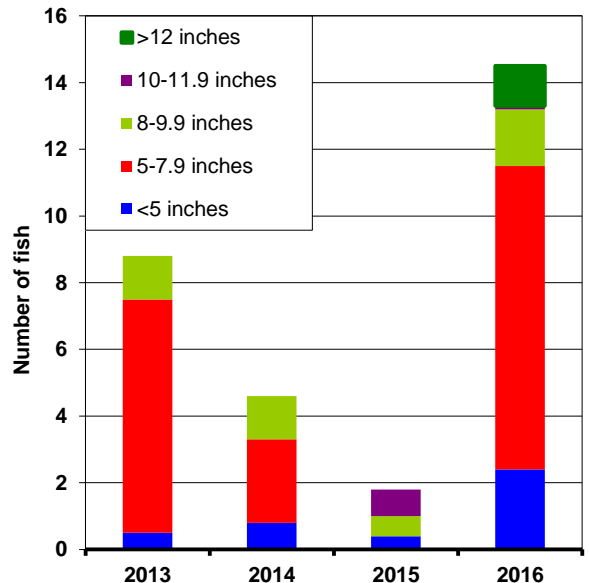


Bluegill per trap net by length category



This lake was not sampled in 2017 or 2018. Perch frame netting was conducted the end of March of 2016 while bluegill and bass were sampled in June. Even though most size classes are represented for perch and bluegill, catch rates are very poor during low water conditions. We tend to see this in other lakes with similar water levels. Currently this lake is filling up and could reach full pool if we continue to receive above average precipitation, however the panfish population will need a couple years to recover. Bluegill condition (plumpness) tends to be below average in this lake, but with low numbers they showed some improvement for this survey. We ran into some weather issues in 2015 that was reflected in our perch catch but showed improvement for the 2016 survey. Bass numbers do not fluctuate as rapidly with the water levels and predators tend to capitalize on crowded panfish. This lake can produce fish over the 5 pound mark during those years with near or above average water levels. The last two ice seasons have been excellent for good numbers of quality perch and some bluegill.

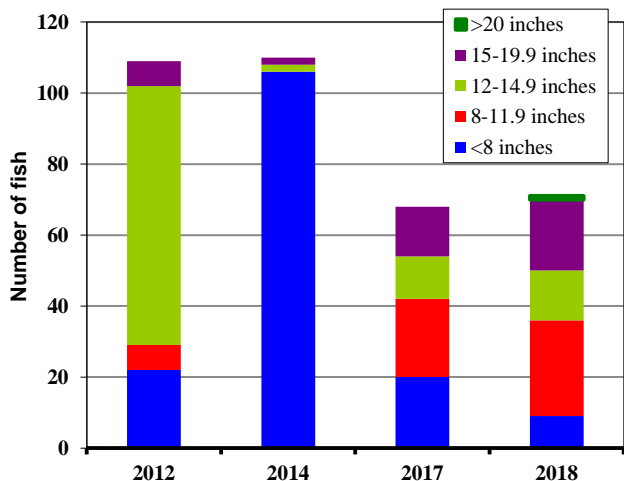
Yellow perch per trap net by length category



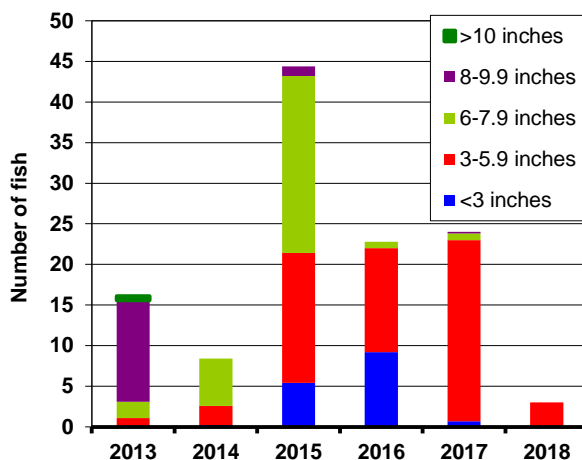
Goose Lake

Goose Lake is located approximately 23 miles south and 4 miles east of O’Neill. It is state owned and managed as a WMA. It is a natural sandhills lake which has seasonal inflow and outflow. These channels are diked with a screened flow though outlet structures. Carp re-entered in 2008 & 2010 during extremely high flooding event and they swam around these structures. In 2015 an infestation of Eurasian Water Milfoil completely covered the lake but was successfully treated with an aquatic herbicide. A concrete boat ramp is available. There is an irrigation well that can be used to maintain water levels during low water years. During wet seasons the area may not be accessible. Currently the lake is at “full pool” with 8-9 feet max depth that was reached in 2016 and has been maintained since. A renovation that was planned for the fall of 2017 has been postponed due to extremely high precipitation since then. Water levels permitting, it is currently scheduled to be renovated in the fall of 2019.

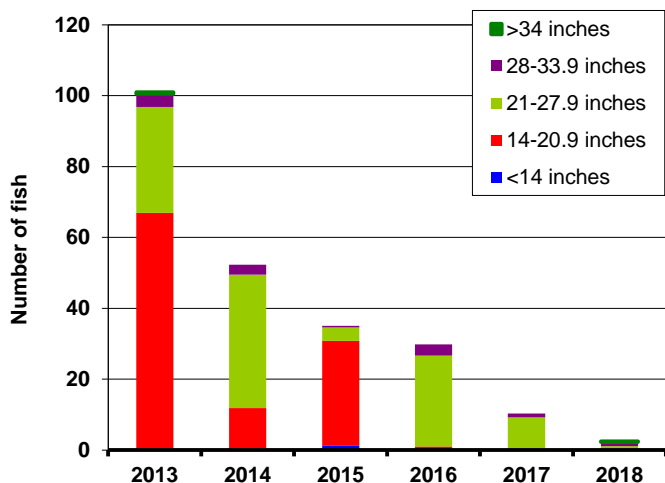
Bass per 1 hr electrofishing by length category



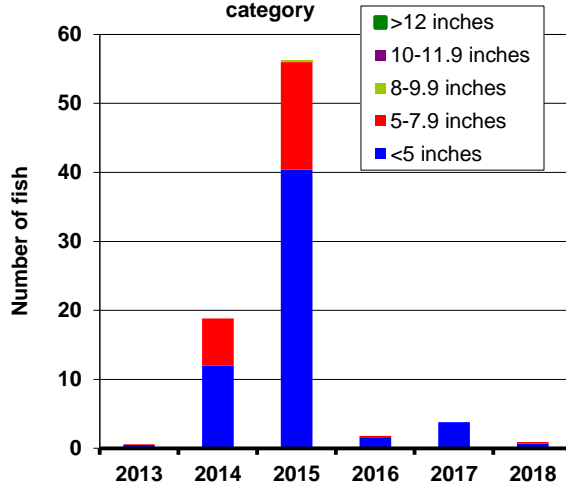
Bluegill per trap net by length category



Northern pike per trap net by length category



Yellow perch per trap net by length category

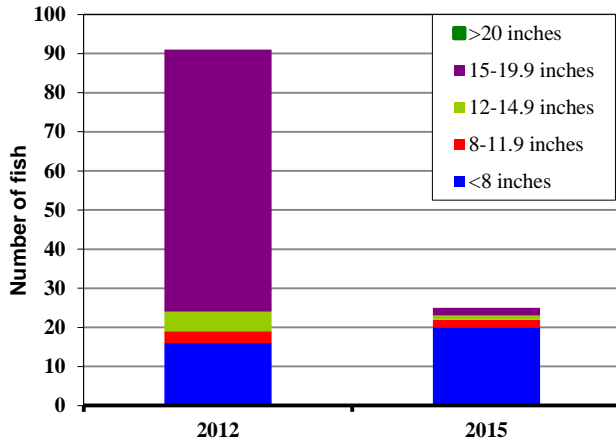


Frame netting was conducted in early March to target pike and perch. With the high carp densities in the lake most other fish species are in decline. Largemouth bass catch and size distribution is similar and can be the last to decline in a high density carp population, generally recruitment suffers and only large fish remain. Without a carp population in the lake it is capable of growing thick stands of native aquatic vegetation and supporting a fast growing bass and panfish fishery. Fishermen are currently struggling to catch fish other than early spring bass at this lake, previous renovations have provided fantastic fishing opportunities within 3 years.

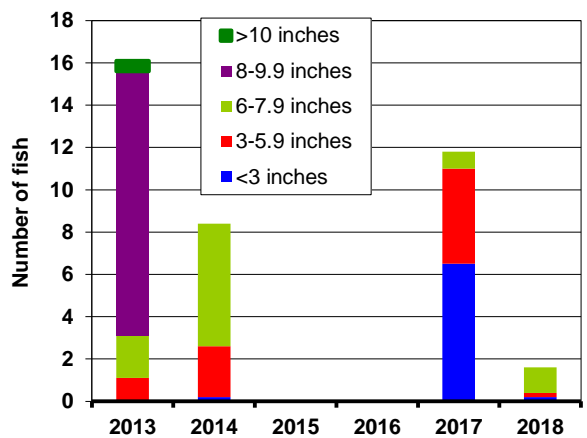
Swan Lake

Swan Lake is located 25 miles south of Atkinson and is a privately owned lake that is leased for public fishing access only. It was renovated to remove carp in 2006 and they have not been sampled since, one made it to the east side of the outlet structure in 2010, but it does not appear any were able to swim into the lake even after high water the following year. In 2012 improvements were made to the berms and outlet to keep carp from re-entering the lake. Above average precipitation in 2017-18 has filled the lake, @ 9' max depth and it has been running out the overflow, this has not happened since 2012. The lake would have to fill another foot before running out the new emergency outlets. A blacktop road runs along the north side of the lake to the parking area and primitive boat launch. Bank anglers can access a parking area directly across the lake on the south shore via two track trail.

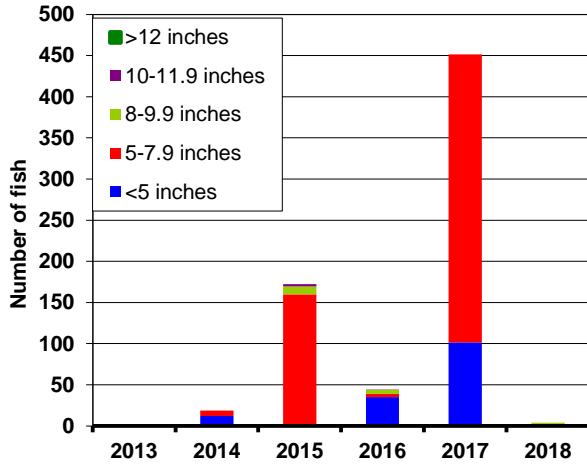
Bass per 1 hr electrofishing by length category



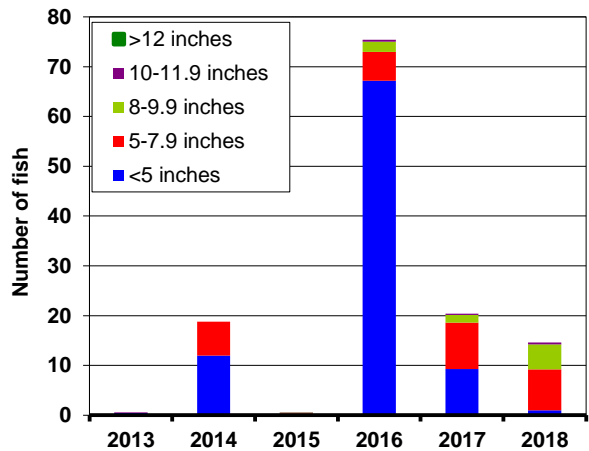
Bluegill per trap net by length category



Bullhead per trap net by length category



Yellow perch per trap net by length category

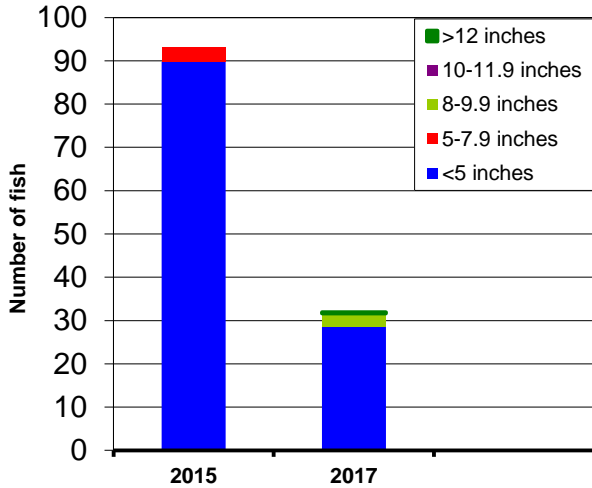


Fish populations in Swan are struggling due to water quality issues. A partial summer kill in 2009 along with 2014-15 partial, but substantial, winter kill has hindered establishing all game species. Bass sampling in 2015 collected mostly small fish and very few over 8 inches. The lake has not been electrofished since, however bass sampling will be conducted next spring. Black bullheads exploded and can cause poor water clarity like carp, they are also a tremendous predator on small fish and eggs. Stockings of over 405,000 bass, bluegill and yellow perch have been made in 2015-18 to boost their numbers. Only 3.8 bullheads per net were sampled this year. No bluegill were collected in either the 2015 or 2016 sampling, and dropped off in 2018 after last year's rebound, most likely a result of restocking efforts. Open water fishermen were finding bluegill this past summer. The perch numbers have dropped the last two years, but a few larger fish are being caught. Now that the lake is full, the panfish catch should take off. We still need to try to address the apparent recruitment issues that the fish populations in the lake are experiencing, a lake full of water should help.

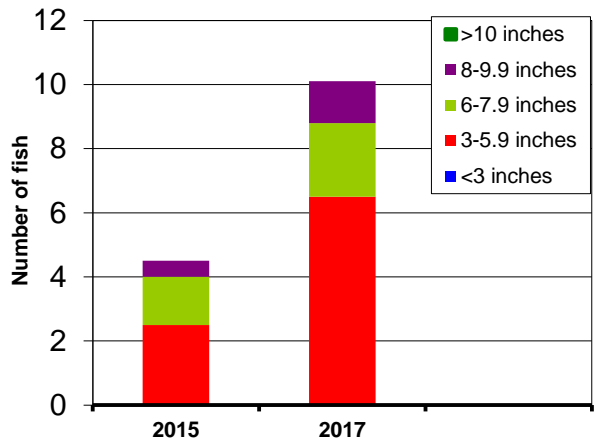
Tower Lake

Tower Lake is located 12 miles south and 2 miles east of Ainsworth and is owned by the US Fish and Wildlife Service. This is a natural sandhills lake with no inflow or outflow. There is a berm that separates this lake from a marsh to the west with a drop-board structure to control flow into Tower. These lakes are carp free and can grow tremendous amounts of aquatic vegetation. These lake's water levels vary greatly in association with precipitation. Currently Tower is @ 2 feet below full pool with a max depth near 6 feet. We did not survey here in 2016 due to the low water levels and resulting poor access and time constraints prevented us from surveying in 2018. The last bass survey was in 2014 which showed a high catch of fish from 15 to 20 inches. We found some 5 feet deep water while setting trap nets in 2017.

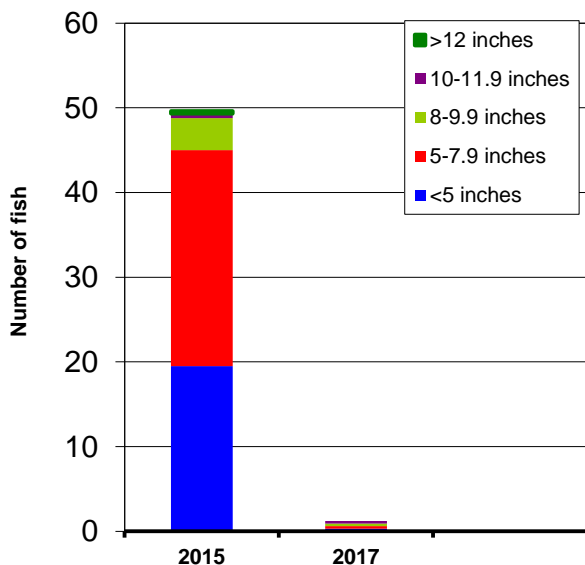
Black crappie per trap net by length category



Bluegill per trap net by length category



Yellow perch per trap net by length category

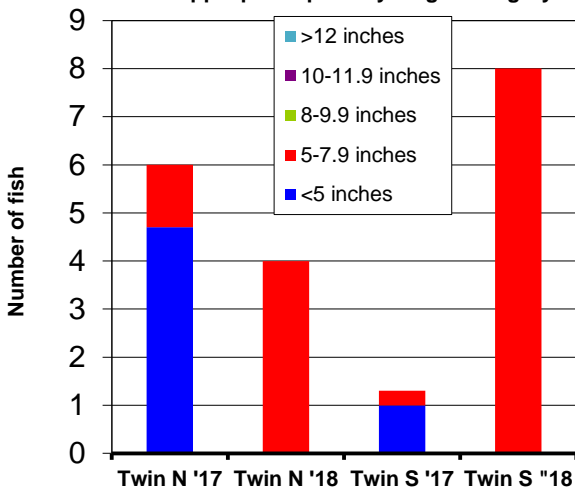


This lake has been on the short end of the stick for precipitation and did not reach “full capacity” following the very high back-to-back water years in 2010-11 and even with record precipitation in 2018 still remains below a “full pool” status. Some beavers that were hindering the flow of water from the west marsh were removed and now water is flowing into the east lake. The lake was frame netted in mid-April of 2017 and had an acceptable catch of crappie, but most of them were juvenile fish. Bluegill size structure was acceptable but catch could have been twice as high. We collected one perch from each size-class. I don't know where these fish were hiding, but anglers are fairly successful find them in the fall, as well as the ice fishermen. There was some success on larger bluegill through the ice as well.

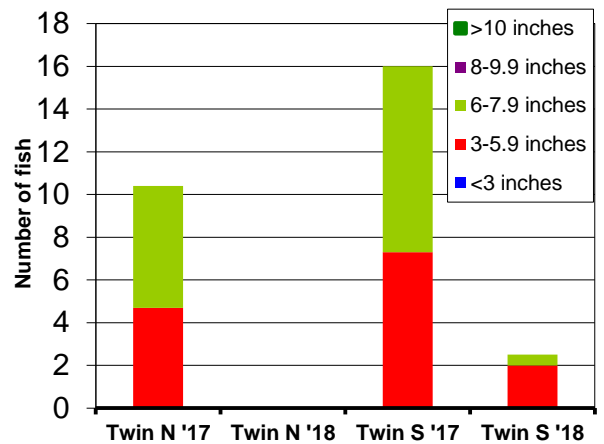
Twin Lakes

Twin Lakes North and South are located 18 miles south and 2 miles east of Bassett and are part of a state owned WMA. They are natural sandhill lakes but water levels fluctuate widely depending on wet or dry seasons. Water flows into the North lake from the west almost annually with average precipitation, but has only left that lake twice in the last 30 years. On those occasions water floods the county road to the west of each lake and flows out to the north-east, the last time was 2010-11. In April of 2015 we relocated as many adult bass, black crappie, yellow perch and northern pike to other nearby public fishing lakes. In March, 2016 both lakes and many small puddles in the watershed were renovated, the last couple marshes were renovated under the ice in February of 2017. Four larger private sandhill lakes and some associated marshes were renovated in 2015 by the NGPC, but as public fishing access was not to be allowed, the chemical was purchased by the Sandhill Task Force. Fish stocking began at Twin Lakes in April, 2016 and continued through July with largemouth bass, bluegill, black crappie and yellow perch. Currently the North & South lakes are both 8'6" max depth. The North is 2' below full pool & the South is only 1' below full pool. An outlet structure project that will prevent carp from re-entering Twin Lakes and the system above is nearly complete.

Black crappie per trap net by length category

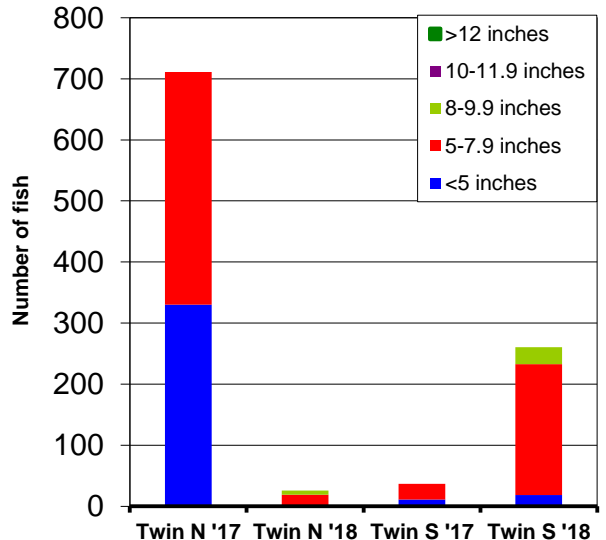


Bluegill per trap net by length category



Sampling was conducted in late April 2018 to target perch, a later time frame could possibly see higher catches for crappie and bluegill. The higher catch for perch swapped lakes for this sampling, still no fish were netted that exceeded 10". However, fish over 11" were caught through the ice early this winter with some bluegill and crappie angled as well, mostly in the South lake. Now that these lakes have filled, all fish populations should have a positive response. A handicap accessible concrete boat ramp and a vault toilet were installed at Twin South and a concrete ramp at Twin North. Both are accompanied by larger designated parking areas. These ramps are designed to be user friendly for vessels large & small. Funding was provided in part from the boat launch facility deferred maintenance & matching U.S. Coast Guard boating safety dollars.

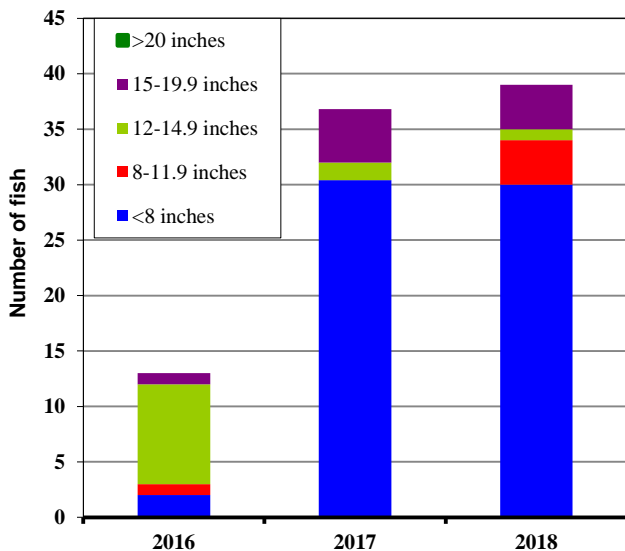
Yellow perch per trap net by length category



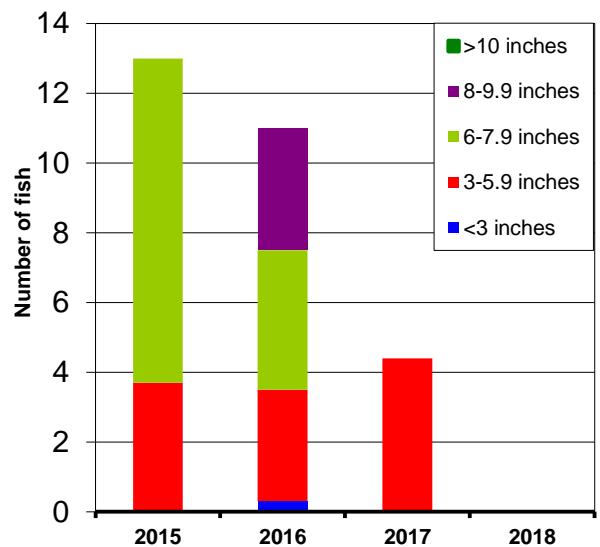
Willow Lake

Willow Lake is located approximately 21 miles south and 11 miles west of Ainsworth. This is a state owned WMA. It is a natural sandhills lake with seasonal inflow from the west. When the lake is full water passes through a drop-board structure in a berm on the east end of the lake. Improvements to the berm and grated emergency overflow were completed in 2016. The lake was renovated in September of 2013 and due to an unexpected raise in the lake level we were not successful in eliminating the carp population. Besides stockings of black crappie, yellow perch, bluegill and largemouth bass, walleye were added to provide an additional “toothed” predator to help limit carp recruitment and as an additional angler opportunity. The lake reached “full pool” near 12’ last year after having been drawn down for the outlet work.

Bass per 1 hr electrofishing by length category



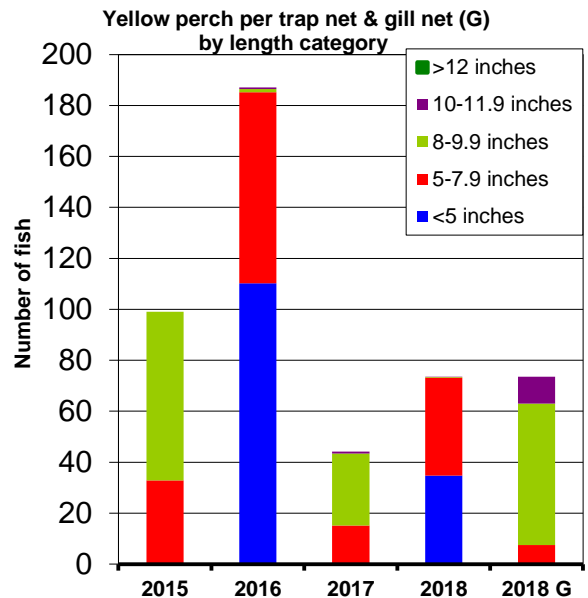
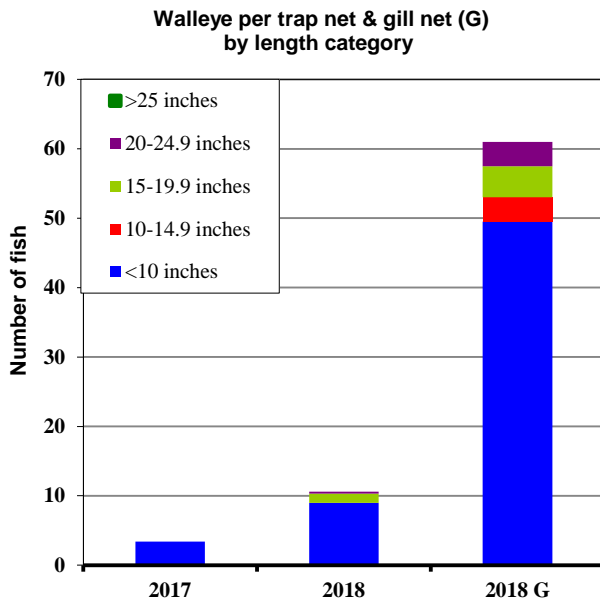
Bluegill per trap net by length category



Nighttime electrofishing was conducted in early June to sample largemouth bass. Our bass catch is far below the numbers that are usually found following a renovation, before we had carp in this lake bass catch ranged from 29 to 55 bass per hour of effort of fish over 8 inches. Fish over 20 inches were commonly sampled. In 2015-16 we lost most of our bass population due to a bacterial infection. We have been stocking fingerling bass when available and that is most likely what we see in 2017, some of those fish have grown into the next size class in 2018. The larger sizes are remnants of the original stockings. A healthy population is crucial in an effort to control black bullheads and limit carp recruitment.

Frame nets were set in early April to target the perch population, if water temperatures are too cold you may not get an adequate bluegill sample and later sampling should be better for black crappie as well. Hoping that was the case, we trap netted again in mid-May. As can be seen our bluegill catch has been in decline since we started sampling. With four nets we caught 1 crappie and 2 bluegill, we did have 11 hybrid bluegill per net, these fish can grow fairly fast and get over a pound. We did however collect 346 black bullheads and 315 carp (29 & 74 respectively in April) which will probably dissuade us from future May netting, at least until we see increases in our bass population.

Willow Lake - continued



Following our discovery of carp in the summer of 2014 we requested an annual stocking of 20,000 fingerling walleye to begin in 2015. In 2016 we sampled one 8 inch fish in our April trap netting. In 2017 we collected 17 juvenile walleye. This April we sampled 54 juveniles, 8 fish from 10 to 15 inches and 2 over 15. The best method to evaluate a walleye fishery is with fall gill nets and we found, with four year-classes in the lake, that all but the largest size-class was represented. We hope these fish can help limit carp recruitment in the future. These fish should provide an angling opportunity that isn't found too close by.

Perch catch has been fluctuating since initiating our sampling following the renovation, it seems we lost a large number of fish due to the bacterial infection from our original stockings. Pre-carp growth rates for Willow were faster than any other sandhills lake we sampled in a statewide Sandhills Lake Study, it looks like we are beginning to see that for perch. Our spring trap net and fall gill net catch was exactly the same, however we did see a few more of the angler desirable perch in our fall sample.

Peterson Lake

Peterson Lake is located 20 miles south and 4 miles east of Bassett. This is private lake that is leased for public fishing access through the Open Fields and Waters Program. This is a natural sandhill lake with no inflow but flows out to the north during extremely wet years. It is carp free and can grow tremendous amounts of aquatic vegetation. This lake's water level fluctuates widely with precipitation, currently it is very near full pool, @ 8' deep. This lake was frame netted in 2012 and electrofishing collected bass in 2013. The current pike population is composed of fish up to 36" but these fish are targeted heavily due to this lake being one of the closest pike fisheries to our heavier population centers. There is a good largemouth bass population, but not heavily targeted due to other populations which are easier to access. There are fair numbers of big bluegill and perch which are targeted heavily through the ice, for the same reason as pike.

Attention motorboat owners operating in Nebraska:

Starting in 2016, boaters whose motorized watercraft are registered in any state other than Nebraska must purchase and display a \$15 Aquatic Invasive Species (AIS) Stamp each year they launch their boat in Nebraska. The stamp will help fund AIS education and inspection programs.



- Boat inspections for AIS prior to launch in Nebraska are NOT mandatory at this time.
- Personal watercraft registered outside of Nebraska must have this stamp.
- Non-motorized craft registered in any state are exempt from the stamp.
- Stamps are not required for boats registered in Nebraska. A \$5 AIS fee is included on the residents' three-year boat registrations.
- Residents who register their boats in other states must have this stamp before launching in Nebraska.

This stamp is available online at **OutdoorNebraska.org** or at Nebraska Game and Parks permitting offices.

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



Check the Boating Guide for details:

<http://digital.outdoornebraska.gov/i/1052768-nebraska-boating-guide-2019>

Nebraska Invasive Aquatics:

<http://neinvasives.com/documents/Aquatics-Field-Guide.pdf>

Fishing regulation & public waters information consult the 2019 fishing guide at:

<http://digital.outdoornebraska.gov/i/1067027-fishing-guide-2019>

Common carp find their way into many Sandhill lakes, sometimes they are unknowingly brought in a minnow bucket, but often they swim in during high water. They degrade water quality by disrupting the lake bottom, destroying water clarity. This limits aquatic vegetation growth and prevents other desirable fish from maintaining healthy populations. A large amount of fisheries biologist's time and fishermen's money is spent trying to control common carp. In the Northeast District, carp are still found in Long Lake SRA & Goose Lake as well as many private sandhills lakes. Carp swam back in Overton Lake from upstream sources, but we hope to renovate, when funding is available and all the landowners agree to chemically removing carp from those waterbodies. The MOU for public fishing has expired at Overton and all the lakes in the watershed should be renovated before it is renewed. An Aquatic Habitat Project on Valentine National Wildlife Refuge has installed water control structures that are also carp barriers. Pelican & its downstream waterbodies were renovated in 2018, Hackberry is next on the list. Future barriers and renovations on other sandhill lakes may be possible with joint funding and other assistance from Ducks Unlimited, Sandhills Task Force, US Fish and Wildlife Service, NE Environmental Trust, NE Dept. of Environmental Quality, NE Game and Parks and possibly others. A study is being conducted to document the benefits to all wildlife populations by eliminating common carp from sandhills lakes.

Eurasian Water Milfoil is an invasive species of aquatic vegetation that completely chokes out native plants. This plant can spread rapidly from a single fragment of stem or leaf which takes root and forms a new colony growing up to 2 inches per day. Once established, the plant can form dense surface mats that interfere with boating, fishing, swimming, and other forms of recreation. Plant fragments can be transported on boats, trailers, and other aquatic sporting equipment. **Zebra Mussels** have been found as close as Lewis and Clark Reservoir and are within 100 miles of Goose. Anglers must be careful to follow the Clean-Drain-Dry protocol to keep are lakes free of unwanted hitchhikers. **Fishermen and all other boaters must be diligent not to move unwanted or destructive species from one system to another by boat or bucket.**



Headwater lake for Twin renovation 2015



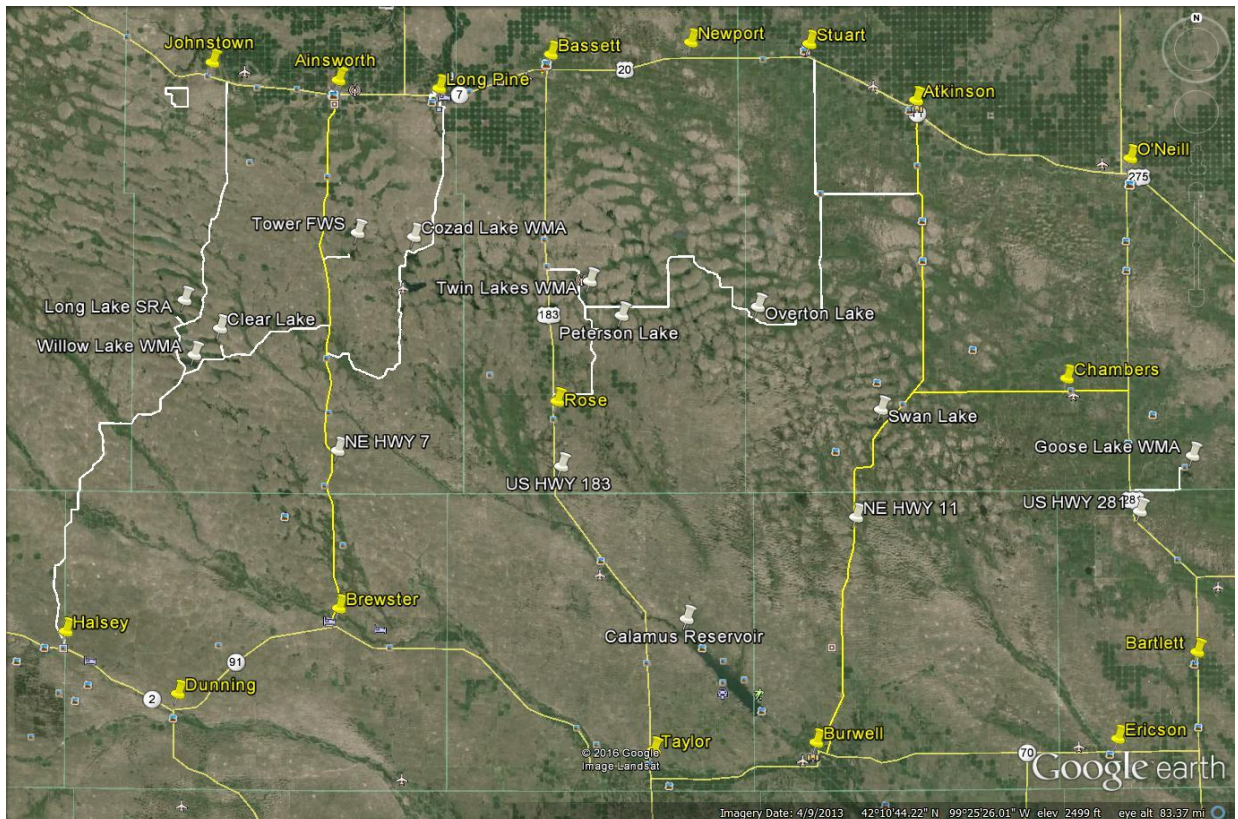
Eurasian Water Milfoil at Goose Lake 2015



Zebra Mussels at Lewis & Clark 2016

Access for these sandhill lakes vary due to ownership. Cozad, Goose, Twin & Willow are owned by the State of Nebraska and are managed under Wildlife Management Area regulations. Tower Lake is part of Yellowthroat WMA and is owned by the Fish and Wildlife Service. Clear, Overton, Peterson & Swan are privately owned lakes with public fishing agreements.

Access	Clear	Cozad	Goose	Peterson	Swan	Tower	Twin	Willow
Bank/Wading	NO	YES	YES	YES	YES	YES	YES	YES
Boat	YES	YES	YES	YES	YES	YES	YES	YES
Daytime Only	NO	NO	NO	NO	NO	YES	NO	NO
Ice Fishing Only	NO	NO	NO	NO	NO	NO	NO	NO
Modern Boat Ramp		YES	YES				YES	
Primitive Boat Ramp	YES			YES	YES	YES		YES



For more information contact the Game and Parks Fisheries staff:
 Jeff Schuckman, Phil Chvala – Norfolk Regional Office – 402-370-3374
 Andrew Glidden – Bassett Field Office – 402-684-2921

Please remember that these fishing areas have limited services and no trash pick up. If you pack it in, pack it out, and keep our wild places looking wild!