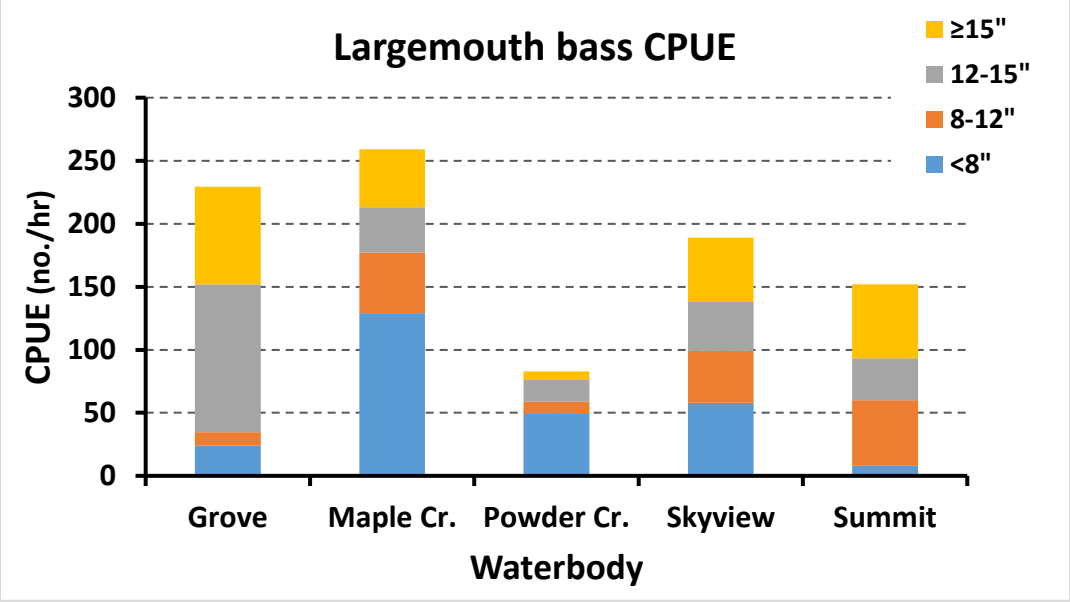
2020 NE District Flood Control Reservoir Fish Sampling Summary

Nebraska Game and Parks Commission
Phil Chvala, Fisheries Biologist
Jeff Schuckman, Northeast Region Fisheries Manager
Andrew Glidden, Fisheries Biologist

Several flood control reservoirs dot the landscape of the Northeast District ranging in size from approximately 25 to 700 surface acres. Willow Creek Reservoir near Pierce is the largest of the flood control reservoirs in the Northeast District and management is geared toward a large reservoir fishery that includes walleye, wipers, and channel catfish. It also provides some good opportunities for crappie anglers. Willow Creek does experience substantial algae blooms which may be negatively influencing recruitment of some species. The primary species making up the fish communities in the remaining smaller reservoirs are largemouth bass, bluegill, black crappie, and channel catfish. Walleye are also found in some of these reservoirs but in relatively low numbers in most cases. Most of the flood control reservoirs receive annual stockings of channel catfish while about half are annually stocked with walleye. Species in these lakes other than the channel catfish and walleye typically maintain their populations through natural reproduction and recruitment.

Largemouth Bass

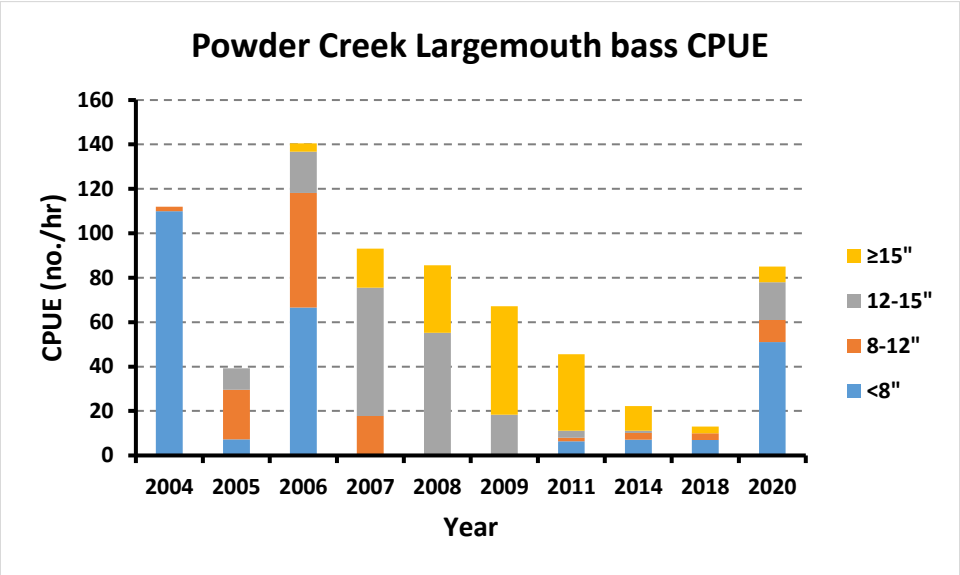
Bass are collected by night-time electrofishing efforts conducted in the spring of the year. A catch rate of at least 150 bass per hour of electrofishing is desirable. This minimum catch rate not only equates to good catch rates for anglers seeking bass but can also limit panfish recruitment so that desirable growth rates and size structure on those panfish can be maintained.



Night-time electrofishing for Largemouth Bass was conducted on five flood control reservoirs in 2020. The bass populations appeared quite good in four of the five lakes sampled. Recruitment appeared somewhat limited in Summit Lake but; as in Grove, Maple Creek, and Skyview; size structure and abundance were at levels that will provide anglers some great bass fishing opportunity. An additional concern at Summit was the increasing abundance of yellow bass. Their presence in the lake has been noted for several years but the number of them observed while electrofishing in 2020 was quite high. In

many instances, this species becomes overabundant and outcompetes other species in a reservoir much like its close cousin, the white perch.

The bass population in Powder Creek Reservoir near Martinsburg was certainly less than desirable compared to the other four lakes. However, it did show some improvement following a summer drawdown that was conducted on the reservoir in 2019. The summer drawdown was carried out to concentrate predators and prey to thin out abundant panfish and bullheads and rejuvenate habitat in the reservoir. The limited bass recruitment in Powder Creek through the years has been attributed to several factors including extremely abundant populations of other species in the lake. This "reset" of the reservoir should increase the opportunity for bass recruitment resulting in a population that can maintain itself. Most of the bass less than 8 inches that were sampled in 2020 were likely from stocking efforts that took place in 2019 and 2020. Bass stocking will continue for the next 2 years to try to establish a higher density population than what we've been seeing in the reservoir. It was encouraging in 2020 to see the highest catch rate of bass ≥ 8" since 2011 and the highest overall catch since 2008.

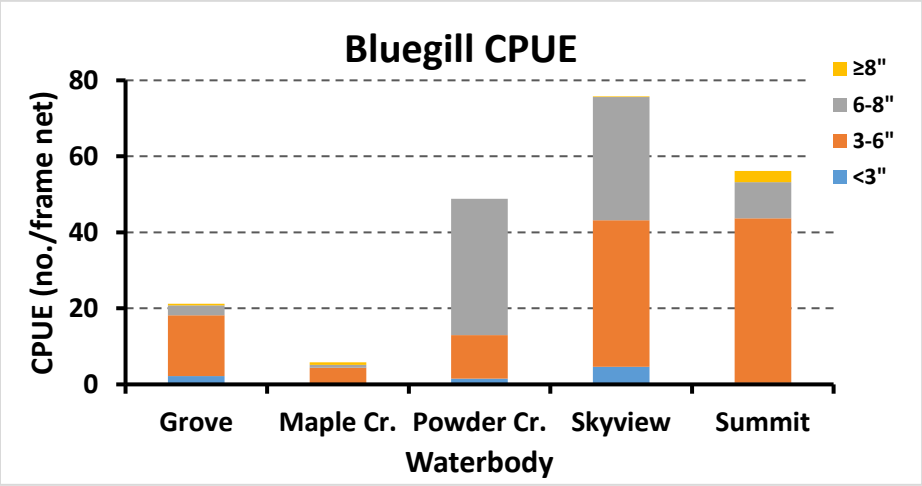


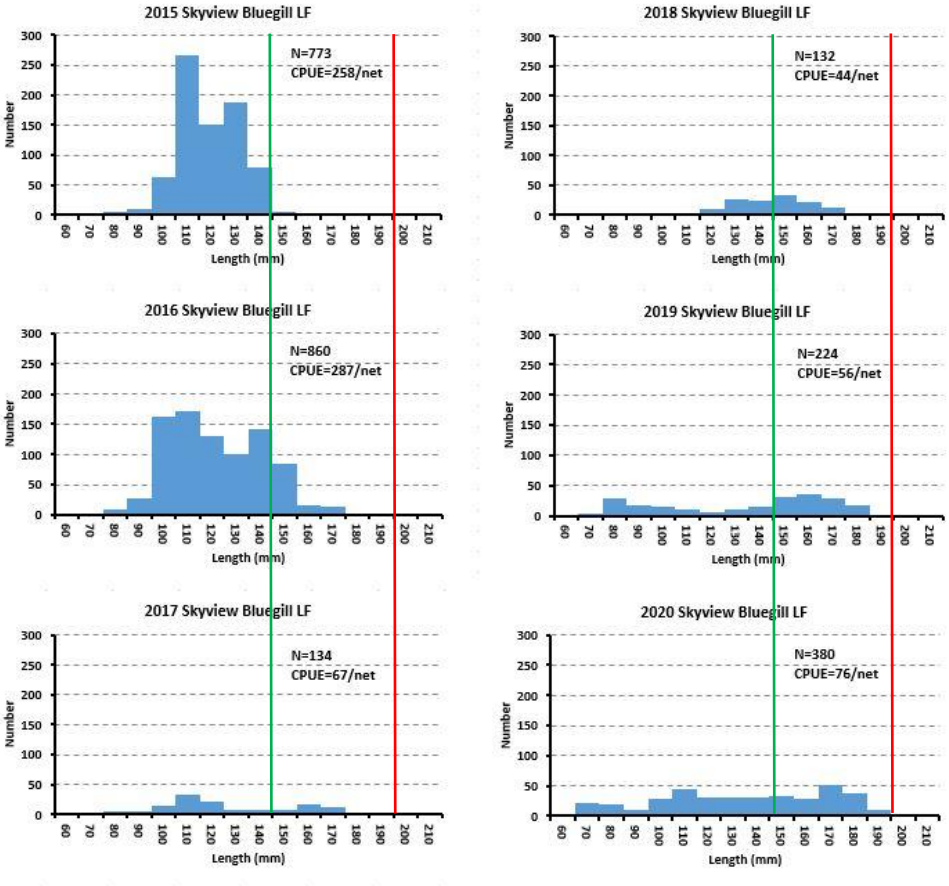
Bluegill

Bluegill are sampled with frame nets in the spring of the year, typically late-April thru mid-June. Those same five flood control reservoirs that were electrofished were also sampled with frame nets in 2020. Notable declines of larger Bluegill (those ≥ 8") occurred in two of the reservoirs (Summit and Maple Creek) that have historically produced good numbers of those fish and it appeared that overall abundance dropped substantially in Maple Creek. The high fishing pressure that has occurred at Maple Creek since its opening is a likely influence there and both it and Summit experienced substantial flooding events in 2019, which could have equated to some additional fish loss. Summit even more so, as it experienced at least two substantial runoff events other than the major flooding that occurred over an expansive portion of the state in March of that year. However, Bluegill recruitment appeared high at Summit and if past growth rates continue, the population size structure should improve in relatively short order. As indicated in the Largemouth Bass summary though, the presence and seemingly increasing abundance of yellow bass in the lake could have detrimental effects on the lake's fish populations, including Bluegill.

The Bluegill population in Skyview continued to respond positively since the bass regulation change on the lake. As can be seen in the series of Bluegill length frequency (LF) graphs below, a moderate-

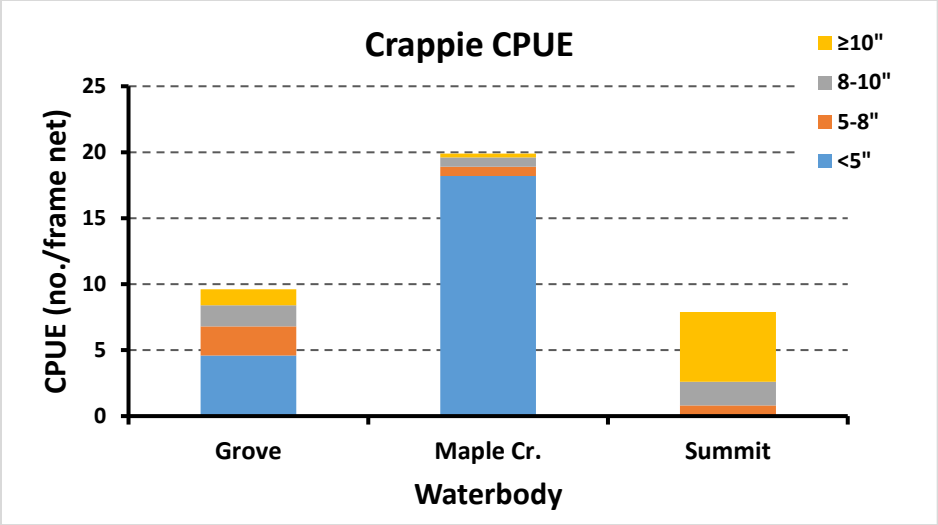
density Bluegill population with improved size structure was being maintained in the lake with some fish even approaching the 8” mark in 2020 (the green line represents 6” and the red line indicates 8”). Bluegill size structure remained similar to previous years in Powder Creek but the number of fish that would be of interest to harvest-oriented anglers appeared to have declined somewhat. As for Grove Lake, the roller-coaster spring seemed to especially impact fish activity there resulting in a sample that was not very representative of the population. Shallow shoreline areas are limited on Grove and fish really seem to move away from those areas in short order, and are slow to return once a “cold snap” hits.

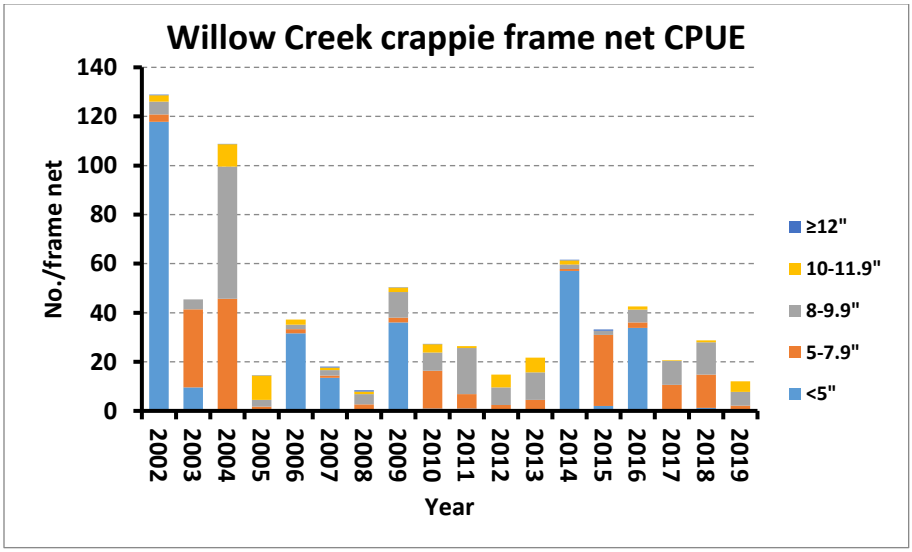




Crappie

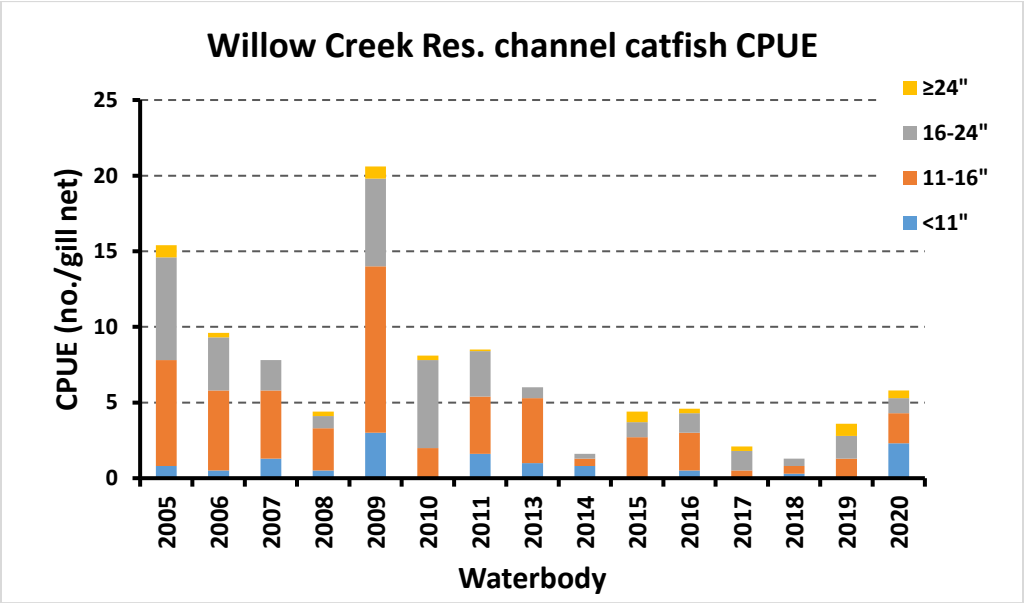
Timing is critical for collecting Crappie in the spring so the catch shown in the graph may not truly represent the population in each of the lakes sampled. Grove Lake sampling indicated a good size distribution that included all of the size classes while the sample at Summit, although indicating somewhat low abundance, revealed a population made up of some really nice Crappie. Sampling at Maple Creek, conversely, indicated a population with a low abundance of adults and comprised primarily of age-1 fish that were around 3-4" in length. Crappie fishing has been good at Maple Creek over the years but with that strong year class present, it should be very good in 2022 and 2023. In contrast to the smaller reservoirs, Willow Creek, the largest of the flood control reservoirs in the Northeast district, is sampled in the fall. Due to time constraints though, Willow Creek was not sampled with frame nets in 2020. Historically, it has provided some outstanding Crappie fishing but had been fairly mundane in recent years. However, Crappie anglers did fairly well in the spring and again through the fall in 2020. Other flood control reservoirs in the district that have the potential to provide some good Crappie fishing opportunities include Buckskin, Maskenthine, and Kramper.





Channel Catfish

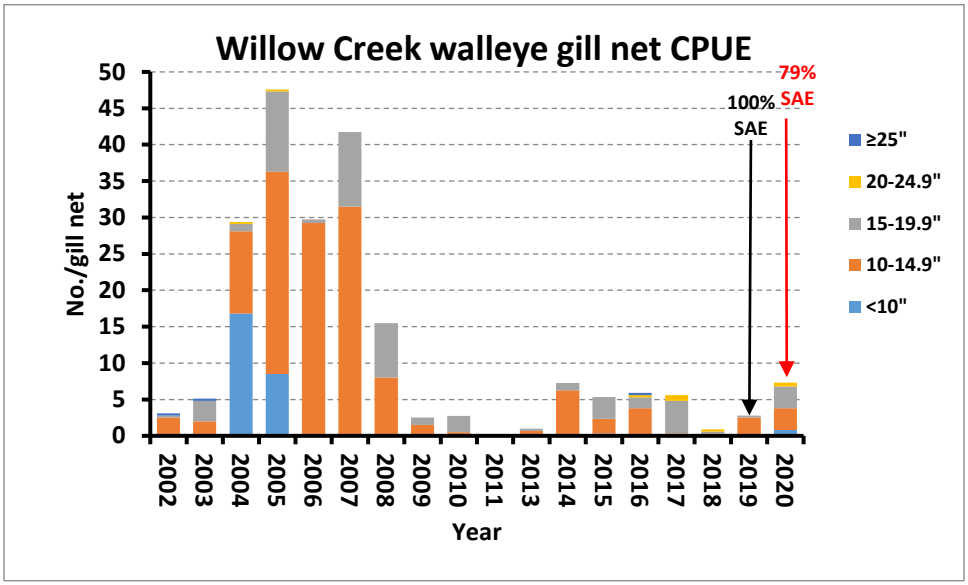
Willow Creek Reservoir was the only flood control reservoir sampled with gill nets in the fall of 2020. Gill nets target "open water" or offshore species such as walleye, catfish, and white bass. Most all of the flood control reservoirs in the Northeast district have good Channel Catfish populations, exhibiting moderate to high numbers and good size structure. Channel Catfish catch did improve slightly to a little over 5/net, with the increase attributable to the increased catch of fish less than 11". The catch of those fish in the nets had been limited to non-existent since 2014. Provided that good recruitment occurs on those fish, Channel Catfish angling should improve at Willow Creek over the next several years. Additionally, all length groups were fairly well represented, including fish over 24". As a reminder, although not sampled in 2020, the other flood control reservoirs in the district consistently hold good Channel Catfish populations and should not be overlooked by those pursuing them.



Walleye

As mentioned in the previous section, Willow Creek was the only flood control reservoir in the Northeast District that was sampled with gill nets this past year. The switch to fry stocking of Walleye was very successful at Willow Creek when it was first initiated in 2004 and that continued to be the case through 2008. Stocking rates of fry have remained the same or higher ever since that time but they have failed to create a good year class since 2008. Considering the continued poor Walleye recruitment and seeing success in other areas of the state with saugeye (a cross between Walleye and sauger), it was decided to try them in Willow Creek. They tend to be a bit hardier and may handle the declining environmental conditions (poor water quality) better than the Walleye have been. Thus far, they seem to be doing well. The 2019 "Walleye" sample consisted entirely of saugeye and they made up 79% of the 2020 sample. Experimental saugeye stocking began in 2017 to see if they would perform better than the recent Walleye stockings and these data indicate that they might very well be. The 2020 "Walleye" catch rate was similar to that of 2014, matching the highest observed catch since 2008. Considering the increased catch in 2020 coupled with harvestable-size fish (those ≥ 15 inches) making up about 50% of the sample,

“Walleye” angling opportunity should be as good, or better, than that of 2020, which was a good year for anglers at Willow Creek. Many of the smaller flood control reservoirs in the district also receive annual Walleye stockings. Those that may provide better opportunities for Walleye would include Summit, Skyview, Maple Creek, Maskenthine, and Kramper.



As mentioned earlier, yellow bass were collected in fairly high numbers during our fishery survey at Summit Lake. Like their cousin the white perch, they have the potential to overpopulate and develop abundant, slow-growing populations that can hinder other species in a waterbody. They did not arrive at Summit on their own. Summit Lake has provided an **absolutely great** fishery for bass, bluegill, crappie, and catfish for years and it would be a tragedy to see it ruined by someone moving fish around. Fish species that were not stocked by NGPC have also been observed in Maple Creek Reservoir and Skyview Lake, among others, in recent years. **“It is unlawful to release into public waters of the state any fish that did not originate from that body of water, including the dumping of bait buckets.” Additionally, sport fish regulations state “It shall be unlawful to transport or possess live white perch, black carp, silver carp, bighead carp, grass carp and yellow bass away from the water body from which they were captured.”** Please call your local conservation officer (phone numbers are listed in all of our regulation guides) or the Wildlife Crimestoppers Hotline (1-800-742-7627) if you observe this or any kind of game violation.

Invasive Species

Many of the Northeast District Lakes contain dense beds of aquatic vegetation on a seasonal basis. Curly-leaf pondweed is found in this area and is classified as an Aquatic Invasive Species. Those lakes that develop especially dense stands of curly-leaf include Pibel, Grove, Summit, Buckskin, and Maskenthine. **Anglers are reminded of the Clean, Drain, Dry regulations that require any boat that has been on a waterbody to drain all water from all compartments, equipment, or containers before leaving the launch area and to remove all aquatic vegetation from the boat and trailer before leaving the launch area.** These regulations are meant to control and/or limit the spread of aquatic invasive species such as zebra mussels, Eurasian watermilfoil, and the aforementioned curly-leaf pondweed, to name a few. Nonresident boaters are also reminded of the Invasive Species sticker requirement. The sticker provides funding for dealing with invasive species that are already present in addition to education and prevention activities that are meant to limit their spread. Nonresident boaters must have one of these stickers affixed to their watercraft before launching in any Nebraska water. Resident boaters automatically contribute to this fund through a surcharge on their boat registration, thus as long as their registration is up-to-date, residents are in compliance and won't have a physical sticker attached to their watercraft. Additional information about aquatic invasive species and preventing their distribution can be found in the 2021 Nebraska Fishing Guide and at the University of Nebraska Invasive Species website: http://www.neinvasives.com. More information for Northeast District lakes such as location, boat ramps, species present, special regulations, etc. can also be found in the Nebraska Fishing Guide.

For more information on fishing rules and regulations visit the Nebraska Game and Parks website at www.OutdoorNebraska.org

For more information on the fisheries and/or fishing opportunities in the Northeast District contact:

Jeff Schuckman, Northeast Region Manager, Norfolk Office Ph: 402-370-3374, email: jeff.schuckman@nebraska.gov

Phil Chvala, Fisheries Biologist, Norfolk Office, Ph: 402-370-3374, email: phil.chvala@nebraska.gov

Andrew Glidden, Fisheries Biologist, Basset Field Office, Ph: 402-684-2921, email: andy.glidden@nebraska.gov