

# NW District Irrigation Reservoirs 2017 Fall Survey Summary



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Several reservoirs located in the panhandle of Nebraska were built and managed for the primary purpose of water storage for irrigation. Water levels in these reservoirs can change drastically throughout a year and may make access difficult or impossible. The Bureau of Reclamation manages water in Box Butte Reservoir, Lake Minatare, Lake Winters Creek, and Big Lake Alice. Whitney Reservoir is managed by the Whitney Irrigation District. Oliver Reservoir was constructed by the Kimball Irrigation District, but is currently owned and managed by the South Platte Natural Resource District as a Recreation Area. A map of lake locations can be found at <https://maps.outdoornebraska.gov/fishing/>.

Box Butte Reservoir is located approximately 9 miles north of Hemingford on the western edge of the sandhills in the Nebraska panhandle. The reservoir was constructed in the early 1940's and impounds the Niobrara River which originates about 60 miles upstream. Box Butte Reservoir was designed for irrigation, flood control, and recreation. The lake levels can fluctuate drastically throughout the irrigation season.



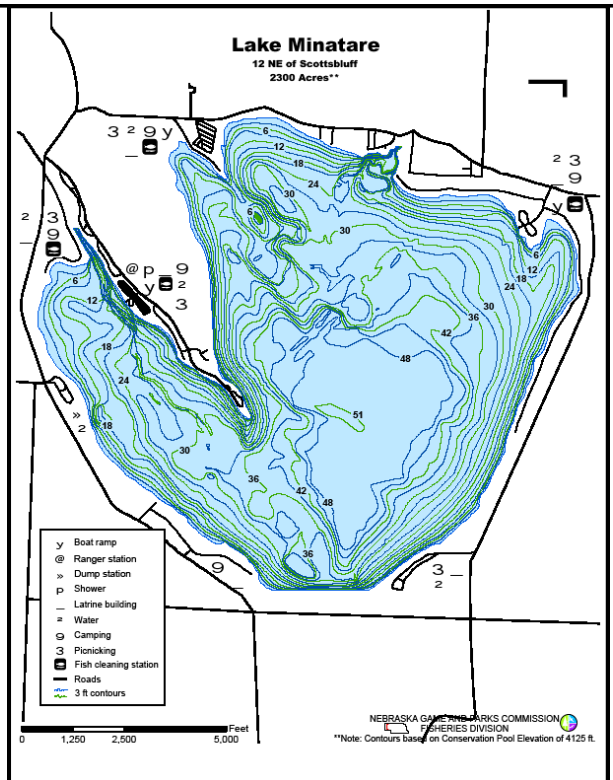
Box Butte Reservoir is owned by the Bureau of Reclamation and encompasses 2,212 acres while the reservoir itself impounds approximately 1,600 of those acres at conservation pool (Elevation 4007ft) . A State Recreation Area (SRA) encompasses the eastern end of the reservoir and a Wildlife Management Area (WMA) can be found at the western end of the reservoir. These areas are all managed by the Nebraska Game and Parks Commission. The SRA offers electrical and primitive camping, water, boat ramp (located on the north side), fish cleaning station, swimming, picnic tables and shelters, and primitive restrooms.

Game fish species present in Box Butte Reservoir include: walleye, northern pike, channel catfish, blue catfish, yellow perch, bluegill, black crappie, rock bass, largemouth bass, smallmouth bass, and pumpkinseed sunfish. It is an excellent open water fishery for all game fish species as well as a top ice fishing destination for pike, bluegill, and yellow perch. Box Butte is also known for its water clarity, making it desirable for bow fishing, underwater powered spear gunning, and surface spear action.

Box Butte Reservoir is scheduled for a major repair to the toe drain system within the dam in 2017 through 2018. The lake will be held down below elevation 3985ft for a full year and may be drawn down more during irrigation season. Nebraska Game and Parks Commission plans to make improvements to the boat launch facility while water levels are low. Low water levels and construction may lead to temporary closures to the dam and, or, the boat launch during this time. More information can be obtained at [www.usbr.gov](http://www.usbr.gov) or by contacting the Nebraska Game and Parks district office at 308-763-2940.

Lake Minatare State Recreation Area is located 6 miles east and 8 miles north of Scottsbluff, NE in the North Platte River Valley. The area encompasses 2,873 acres, including a 2,147-acre reservoir when full. The reservoir was built in 1915 by the U.S. Bureau of Reclamation primarily for irrigation purposes. In 1986, jurisdiction of the area was granted to the U.S. Fish and Wildlife Service as part of the North Platte Wildlife Refuge. The lake and land adjacent to the reservoir is managed by the Nebraska Game and Parks Commission through a lease agreement for recreational activities while the Pathfinder Irrigation District controls water levels for irrigation.

Fishing is available at Lake Minatare for a variety of fish species which include walleye, northern pike, white bass, wiper, channel catfish, blue catfish, smallmouth bass, largemouth bass, and yellow perch.



Big Lake Alice and Lake Winters Creek are both part of the North Platte Wildlife Refuge located above Lake Minatare and supplied by water from the Lake Minatare supply canal. Due to irrigation, Big Lake Alice is lowered to an elevation every year which results in very few fish surviving the winter months. Therefore Big Lake Alice is utilized as a rearing lake for shad, walleye, and perch to be sent down the supply canal and into Lake Minatare.

As part of the North Platte Wildlife Refuge, Lake Winters Creek has a few special fishing regulations. The lake is only open during daylight hours and anglers are restricted to non-gas motors. Anglers may find a variety of species at Lake Winters Creek including yellow perch, black crappie, bluegill, walleye, largemouth bass, and northern pike. To provide a refuge for migrating waterfowl, Lake Minatare, Lake Winters Creek, and Big Lake Alice are closed to public use from October 15th through January 14th each year.

Oliver reservoir (Kimball Reservoir) is located 8 miles west of Kimball, Nebraska off highway 30. It is a 270-acre reservoir when full, located on a 917-acre recreation area. Currently the lake is less than 100 acres with a maximum depth of 12 feet. South Platte NRD owns and manages the area with the help from Nebraska Game and Parks to sustain a fishery. The combination of drought and over appropriation of groundwater use has contributed to the loss of water inflows to the lake. Occasional strong storms produce flash flood events that has extended the life of Oliver Reservoir. If the water levels in Oliver Reservoir continue to drop, the reservoir may disappear over time. Game fish in Oliver Reservoir include walleye, white crappie, bluegill, largemouth bass, yellow perch, channel catfish, northern pike, and muskellunge.

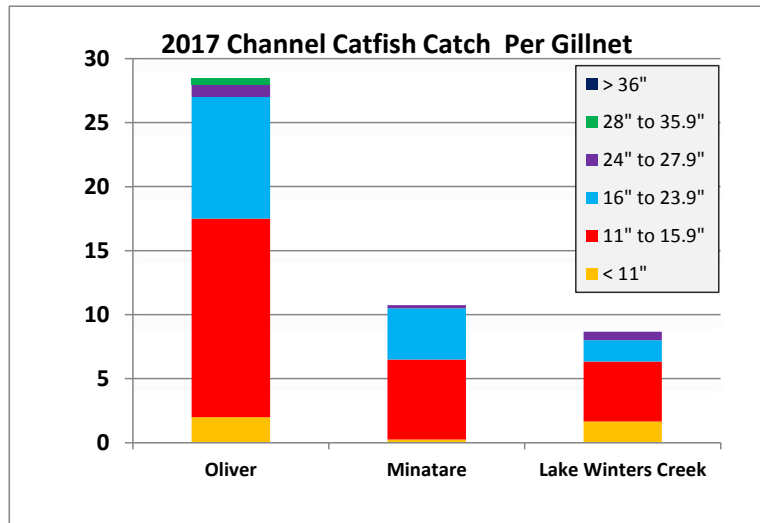


Whitney Reservoir is a 900-acre lake located about 1 mile west of Whitney, Nebraska owned and operated by the Whitney Irrigation District. A Wildlife Management Area located on the NE corner of the lake provides angler access with a new boat ramp and a pit toilet. The lake has a drastic summer drawdown making access nearly impossible by late summer. Game fish species present in Whitney Reservoir include: yellow perch, bluegill, black crappie, white crappie, northern pike, largemouth bass, channel catfish, white bass, and walleye.



## Channel Catfish

Channel catfish were collected in three lakes in 2017. Oliver topped the list with 28.5 catfish per gillnet. The average length of the catfish collected was 15.5 inches with the biggest one at 30 inches. Lake Minatare and Lake Winters Creek both had similar catch rates with 10.75 and 8.7 catfish per gillnet respectively. Both lakes had the majority of the catch less than 16 inches with some quality fish over 24 inches.



Anglers looking for big catfish should fish Box Butte Reservoir. Although the catfish population was not surveyed in 2017, the reservoir produced numerous fish over 20 lbs. as reported by anglers. Low water elevation due to the scheduled dam repairs on Box Butte should help concentrate fish throughout the year in 2018.

Box Butte and Lake Minatare have also been stocked with blue catfish. Anglers are required to know the difference between blue and channel catfish since blue catfish are managed as a trophy fishery with a daily bag limit of 1 and a possession limit of 2, and channel catfish have a daily bag limit of 5 and a possession limit of 20.



Box Butte channel cat collected in 2016



### Blue or Channel?

1. Blue catfish have a long straight anal fin while a channel catfish's anal fin is rounded.
2. Small channel catfish will have spots across its body while blue catfish will not.

## Northern Pike

Northern pike are found in Oliver, Box Butte Reservoir, Whitney Lake, Lake Winters Creek, and Lake Minatare. Sampling is conducted in mid to late March or when the ice comes off, whichever comes first. The sampling gear consists of frame nets that are set perpendicular to the shoreline to intercept pike as they move into shallow vegetated areas to spawn.

Although northern pike are collected using fall gillnets it is not a preferred sampling technique to evaluate the population. Box Butte Reservoir was the only irrigation reservoir surveyed to target northern pike in 2017. Standard sampling suggests that northern pike abundance continues to decline in Box Butte Reservoir with a catch rate of 1.3 per net. **It is possible that the true population is higher than the survey suggests as 2017 has been an odd year for spring spawn for multiple species.** The average length of the pike collected was 20 inches with one individual over 28 inches. Although the majority of pike in Box Butte are small there are a few very large fish caught each year including the 45 inch pike pictured here.

Anglers looking for big pike should fish Whitney Reservoir. Although Whitney wasn't surveyed for pike, several fish over 28 inches were collected during the fall gillnet survey for walleye.

Northern pike regulations:

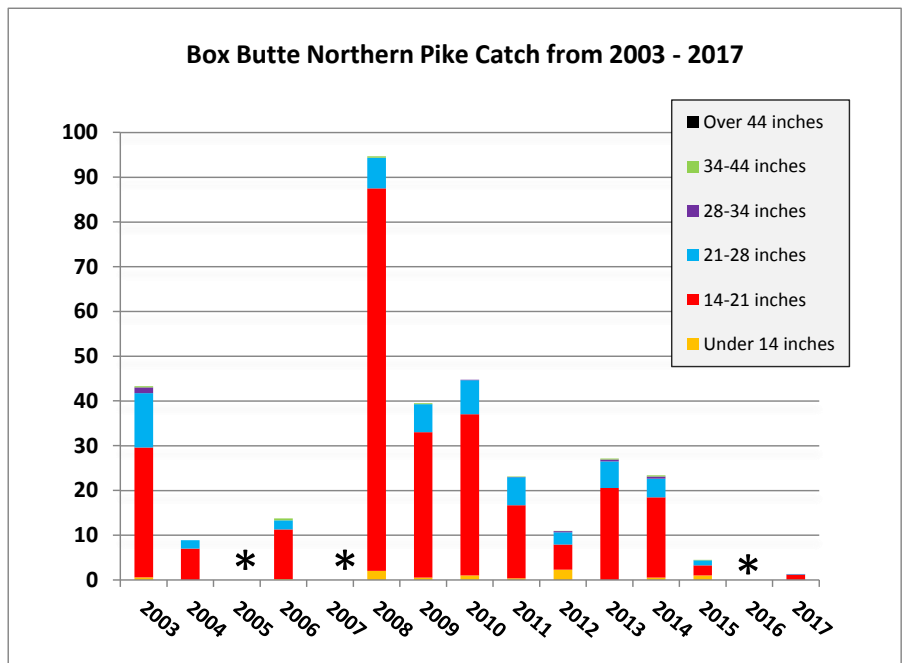
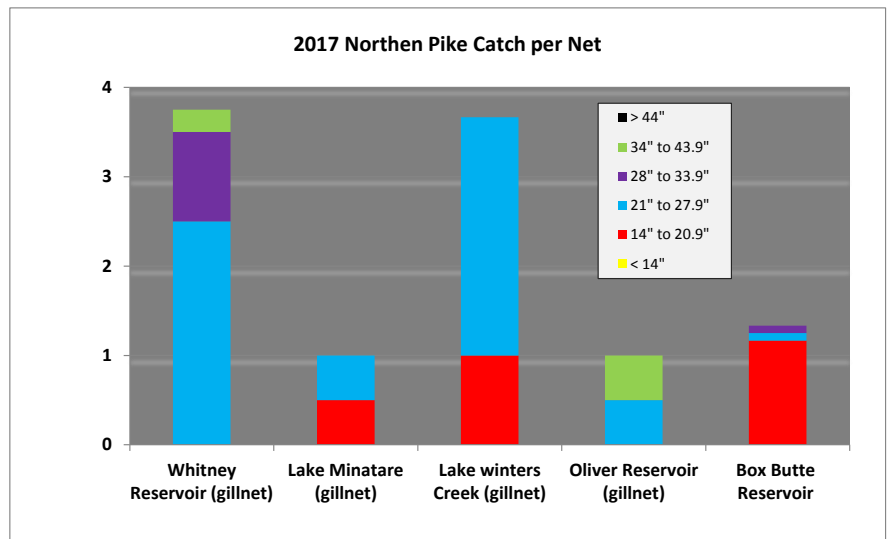
**Possession Limit:** 10 fish

### Daily Bag:

Whitney Reservoir,  
Oliver, and Lake Winters  
Creek - 3 pike

Box Butte- 10 pike  
Pike between 28 and 34  
inches must be released.  
Only one pike over 34  
inches is allowed in the  
daily bag.

Lake Minatare - 10 pike



## Walleye

Walleye are found in all of the NW irrigation reservoirs. Sampling is conducted in the fall using gillnets. In 2017 walleye surveys were conducted on Whitney Lake, Lake Winters Creek, Lake Minatare, and Oliver Reservoir.

Walleye populations continue to be excellent in the panhandle. Lake Winters Creek topped the list again this year with 36 walleye per gillnet. A big year-class of 3 year-old fish dominates the population and average 17 inches long. Some fish over 20 inches are present.

2017 was a great harvest year for Lake Minatare and it was reflected in the 2017 survey. Lake Minatare was down to 23.25 walleye per net from last year's catch of 40.25. Even with the heavy harvest in 2017 some of the big year-class still survived offering some better than usual fish in Lake Minatare. The 3 year-old fish are averaging 18 inches. Unfortunately the 2 year-old year-class is weak but should be followed up with some good harvestable fish in a couple years as another strong year-class is right behind it.

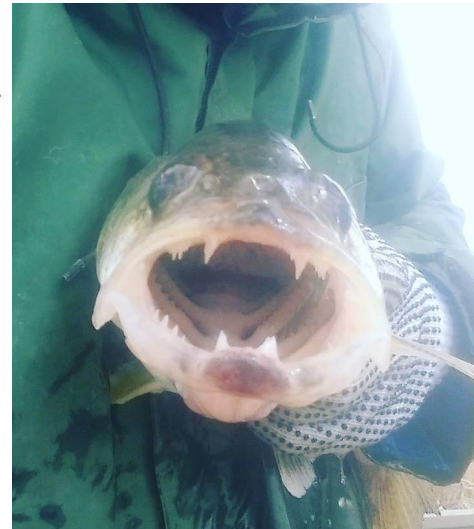
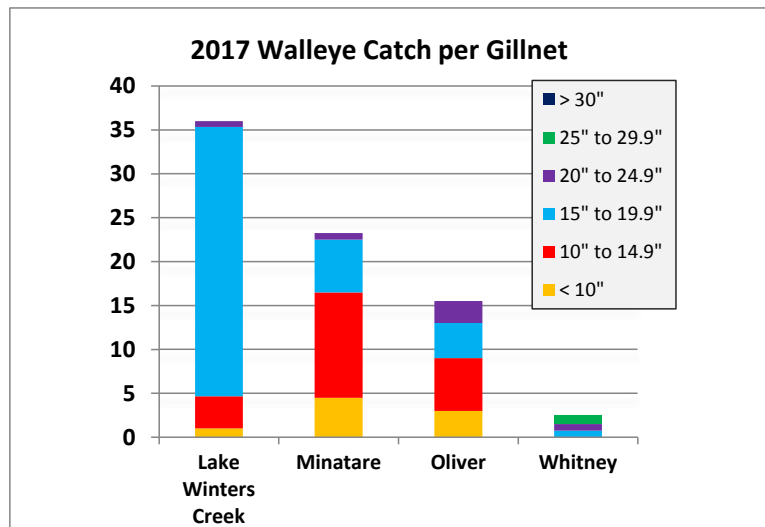
Anglers looking for big fish should try Whitney Reservoir. Although the walleye abundance was low, walleye over 27 inches were collected during the fall survey.

Oliver reservoir was a surprise this fall with a great walleye catch of 15.5 fish per net. Even with the dropping water levels, the lake still produces a quality walleye fishery with 42% of the catch over 15 inches. A new boat ramp was built near the fishing pier, but anglers should use caution as dropping water levels may make boat access difficult for larger vessels.

Box Butte Reservoir was not sampled in 2017 due to the lake draw down. Anglers should have a great year at Box Butte with the fish concentrated out of the thick cover. The walleye population at Box Butte Reservoir is typically maintained though natural recruitment. However, with the lake low, spawning habitat may be limited. Walleye fingerlings will be stocked in 2018 to help prevent any missing year-classes.

**Possession Limit:** 8 walleye, sauger, or saugeye in combination

**Daily Bag Limit:** 4 Walleye, sauger, or saugeye in combination of which only one fish may be 22 inches or longer.



## Black Bass

Bass were not surveyed in 2017 in any of the irrigation reservoirs. Fluctuating water levels make bass surveys difficult to perform as water levels are usually high, flooding terrestrial vegetation and timber during the spring and early summer when bass surveys are typically conducted. Largemouth bass can be found in all irrigation reservoirs while smallmouth are only found in Box Butte Reservoir and Lake Minatare.

## White Bass and Wipers

White bass can be found in Whitney Reservoir and Lake Minatare. Wipers are only found in Lake Minatare. The inlet canal at Lake Minatare is a popular destination for white bass and wipers while the lake is filling. Lake Minatare white bass population was up in 2017 to 3.75 fish per gillnet from 1.25 fish per net in 2016. Although the abundance is still low compared to eastern reservoirs, this is the highest catch rate since 2010 for Lake Minatare. Wipers have not been stocked in Lake Minatare since 2011 in an attempt to rebound the white bass population. If the white bass numbers do not indicate a significant increase down the road, wipers may be added back into the stocking requests.

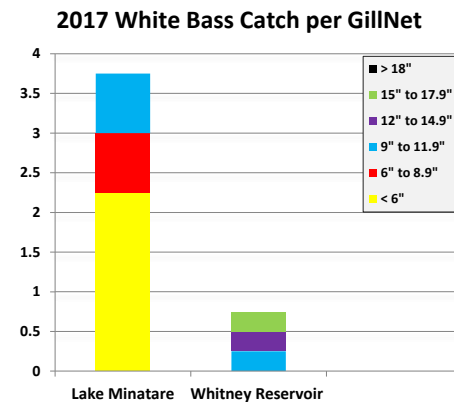
Anglers looking for big white bass should fish Whitney Lake. Although catch rates were low with less than 1 fish per net, 67% of the catch was over 12 inches. Most white bass in Whitney Lake are caught by anglers searching for other species such as walleye.

**Daily Bag Limit:** 15 in combination with only one fish in the daily bag 16 inches or longer.

**Possession Limit :** 30 white bass, wiper (any combination)

## Muskellunge

Although northern pike are found in most of the irrigation reservoirs, only one has a history of a muskellunge fishery. Oliver Reservoir was stocked with tiger muskie from 1986 until 2003. In 2004 the stocking was switched to pure strain muskie which continued for a couple years with the final stocking in 2006. Even after 11 years and periods of extremely low water a few muskie still persist in Oliver. Although no muskie were collected in 2017, in 2016, one muskie was collected during the spring crappie survey and three more were found during the fall gillnet survey. These fish ranged from 30 to 43 inches. The ages of these muskie (determined by looking at scales) ranged from 12 years old down to only 3 years old suggesting some natural recruitment going on.

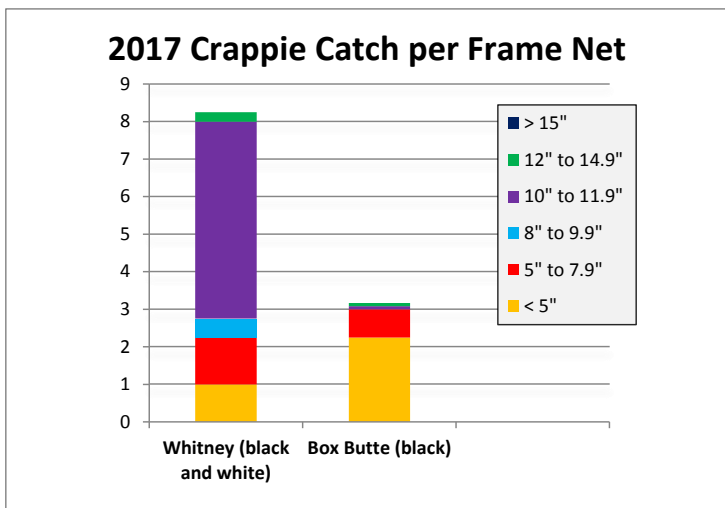


Large wiper collected from Lake Minatare in 2016



## Panfish

Crappies are found in most irrigation reservoirs. Whitney Reservoir and Lake Minatare have both black and white crappie, Oliver has white crappie, and Box Butte and Lake Winters Creek only have black crappie. Whitney was the only reservoir sampled for crappie in 2017. Whitney had a frame net catch of 8.25 fish per net in 2017 with an average size of 7.1 inches for blacks and 9.6 inches for white crappie. Although abundance was low in 2017, 67% of the total crappie population was over 10 inches. Box Butte Reservoir was not surveyed for crappie but some were collected during the spring pike survey. Box Butte had a catch of 3.2 fish per net but had some fish over 12 inches. Oliver and Minatare have quality crappie fisheries but were not surveyed specifically for crappie in 2017.



The top irrigation reservoir for bluegill is Box Butte Reservoir. Although no bluegill surveys were conducted in 2017, angler reports suggest continued quality fishing for bluegill.

Both Box Butte and Lake Minatare should be good for yellow perch in 2018. These lakes were not surveyed for perch in 2017. A few perch over 10 inches were captured during the fall walleye survey in Lake Minatare. Angler reports from Box Butte suggest some fish approaching 12 inches.

**Daily Bag:** 15 panfish (any combination)

**Possession Limit:** 30 panfish



Nice bluegill from Box Butte Reservoir

For additional information about fisheries management at Lake Minatare, Whitney Reservoir, Lake Winters Creek, or Box Butte Reservoir please contact the following personnel by phone or email addresses listed below.

District Supervisor: Al Hanson, (308)763-2940 [al.hanson@nebraska.gov](mailto:al.hanson@nebraska.gov)

Fisheries Biologist: Joe Rydell, (308)763-2940 [joe.rydell@nebraska.gov](mailto:joe.rydell@nebraska.gov)

Fisheries Biologist: Zac Brashears, (402)376-8080 [zac.brashears@nebraska.gov](mailto:zac.brashears@nebraska.gov)

## 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), 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 ¼ to ½ 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).



Pictured Left: Photo of curly leaf pond weed at Smith Lake Wildlife Management Area





# 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.

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