

# NW District Irrigation Reservoirs 2016 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/>. Fishing opportunities exist in most irrigation reservoirs.

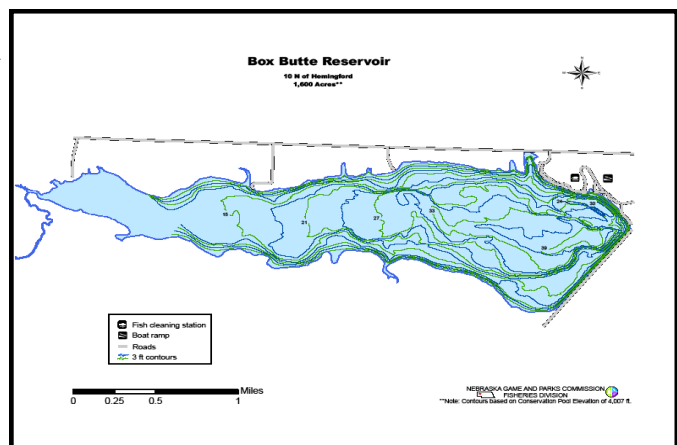
Box Butte Reservoir is located approximately 9 miles north of Hemingford on the western edge of the sandhills in the Nebraska panhandle. The reservoir was constructed in the early 1940's and impounds the Niobrara River which originates about 60 miles upstream. Box Butte Reservoir was designed for irrigation,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



Box Butte Reservoir SRA 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.

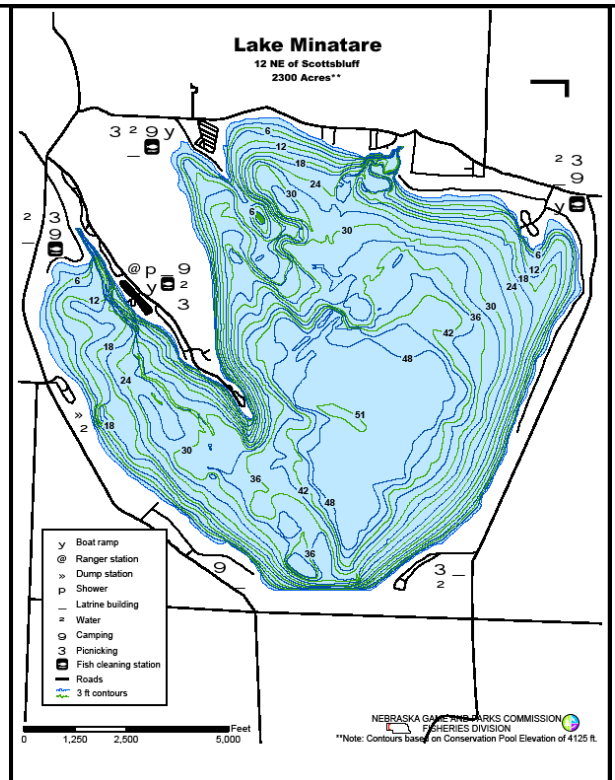
Game fish species present in Box Butte Reservoir include: walleye, northern pike, channel catfish, blue catfish, yellow perch, bluegill, black crappie, rock bass, largemouth bass, smallmouth bass, and pumpkinseed sunfish. It is an excellent open water fishery for all game fish species as well as a top 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. The lake will be held down to elevation 3985ft for a full year following the irrigation season for the repairs. This draw down is still higher than the minimum draw down agreement between Mirage Flat Irrigation District and Nebraska Game and Parks. No major impacts to the fishery are expected. More information can be obtained at [www.usbr.gov](http://www.usbr.gov).



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. Big Lake Alice is drained low enough each year thus very few fish survive 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, northern pike, and smallmouth bass. 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 located on a 917-acre recreation area. The lease agreement for Oliver was not renewed turning the lake back over to the South Platte NRD on January 1, 2014. Oliver Reservoir was once a unique fishery providing both cool and coldwater fishing opportunities. 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. One storm event in the early spring of 2014 filled Oliver Reservoir to within a foot of full pool. Water levels in Oliver Reservoir have steadily dropped since that event even with the above average rainfall in 2015 and average rain fall in 2016. Game fish in Oliver Reservoir include walleye, white crappie, bluegill, largemouth bass, yellow perch, channel catfish, northern pike, possible rainbow trout, and muskellunge.

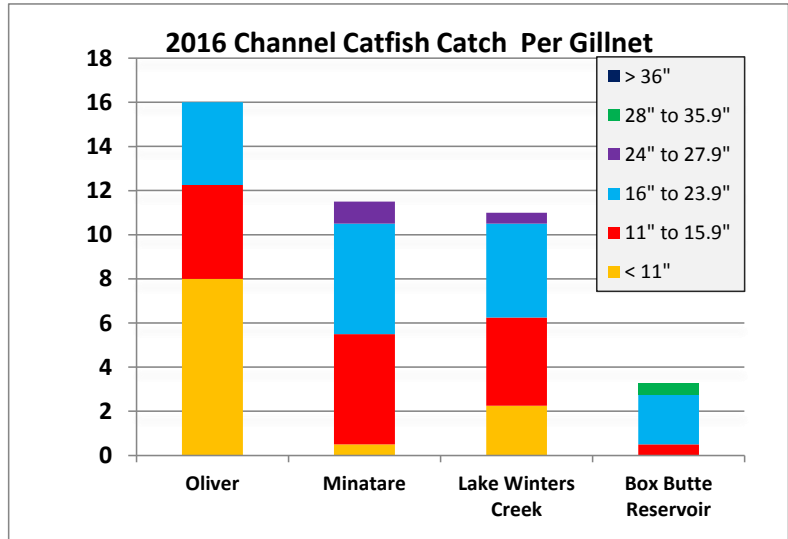


Whitney Reservoir is a 900-acre lake located about 1 mile West of Whitney, Nebraska owned and operated by the Whitney Irrigation District. A Wildlife Management Area located on the NE corner of the lake provides angler access with a new boat ramp and a pit toilet. The lake has a drastic summer drawdown 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

Three lakes in 2016 had channel catfish gill-net catch rates over 10 fish per net. Oliver topped the list with 16 catfish per gillnet. Lake Minatare and Lake Winters Creek looked nearly identical with catch rates near 11 per net and some fish over 24 inches in length. Anglers looking for big catfish should fish Box Butte Reservoir. Although the catfish population is low, anglers frequently catch memorable channel catfish over 28 inches.



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 bag limit of 1, and channel catfish have a bag limit of 5.



### 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.

Catfish are stocked annually in irrigation reservoirs typically at 10 inches.

2016 Channel Catfish Stocking		
Lake	# Stocked	Size Stocked
Box Butte	3200	10 inch
Minatare	6000	10 inch
Whitney	3597	10 inch
Lake Winters Creek	2300	9.5 inch
Oliver	1000	9.5 inch

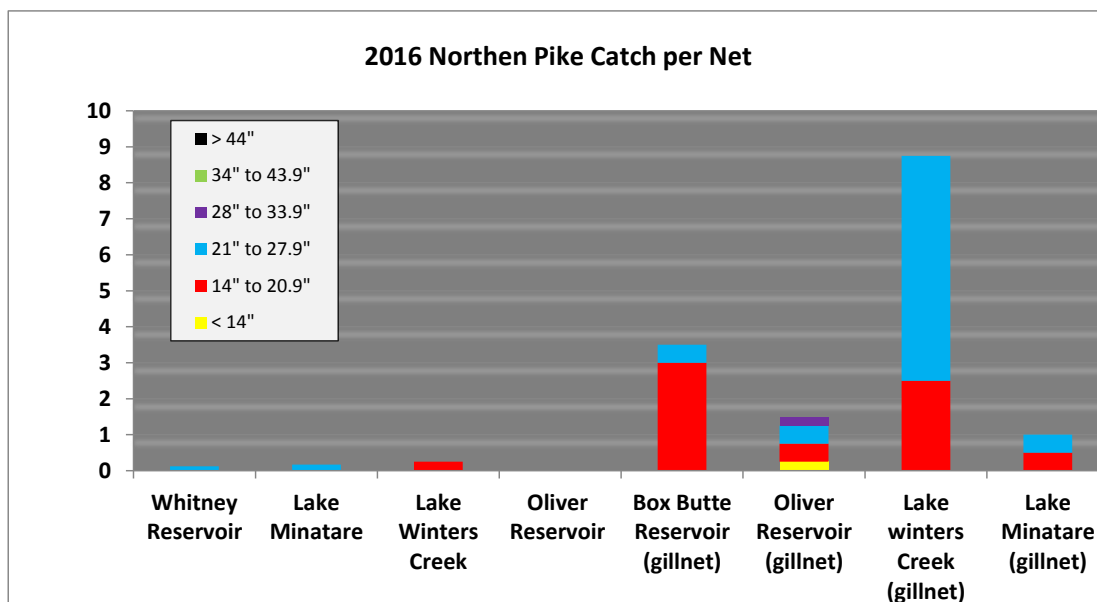
## Northern Pike

Northern pike are found in Oliver, Box Butte Reservoir, Whitney Lake, Lake Winters Creek, and Lake Minatare. Northern pike 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. Lake Minatare, Lake Winters Creek, Oliver, and Whitney were surveyed for northern pike in 2016. Due to complaints from anglers about northern pike showing up in Lake Minatare, this lake was moved to a top priority pike survey, and as a result, Box Butte Reservoir did not get sampled for pike in 2016. Some northern pike were collected in Box Butte during the Fall walleye survey and although it does not indicate abundance, it does provide some information on the quality and health of northern pike.

All northern pike surveys in 2016 produced low abundance with catch rates less than 1 pike per net. Oliver Reservoir did not catch any pike in during the 2016 pike survey but did find some during the fall gillnet survey. Likewise, even with the low catch rates in Lake Winters Creek during the spring pike survey (> 1 per net), several pike were collected during the fall walleye survey.

Anglers looking for big pike should fish Oliver reservoir as some fish over 28 inches were collected from the fall gillnet survey. Anglers looking for high abundance of pike should look at Lake Winters Creek or Box Butte Reservoir. The majority of the pike at Box Butte Reservoir are typically under 20 inches but has the possibility for a fish over 30 inches. Although there was a low catch rate in Whitney Lake in 2016, anglers may find the opportunity for some large pike there as well. The biggest pike collected in 2015 came from Whitney Reservoir.

In 2008, fisheries management placed a special regulation for northern pike at Box Butte. The regulation was a protected slot of 28-34 inches and an increased bag limit of 10 fish (only one can be over 34 inches). This new regulation is experimental and was done to increase size structure of pike in the lake while reducing the overall pike abundance and produce a better quality pike fishery. The daily bag limit for northern pike in Lake Minatare was increased to 10 pike per day with a possession limit of 10 pike to keep the new population from increasing. Whitney Reservoir, Oliver, and Lake Winters Creek have a daily bag limit of 3 pike of any size with a possession limit of 10.



## Walleye

Walleye are found in Oliver Reservoir, Lake Minatare, Box Butte Reservoir, Whitney Reservoir, and Lake Winters Creek. Walleye are sampled in the fall with gillnets. Whitney Reservoir was not surveyed in 2016 due to low water levels.

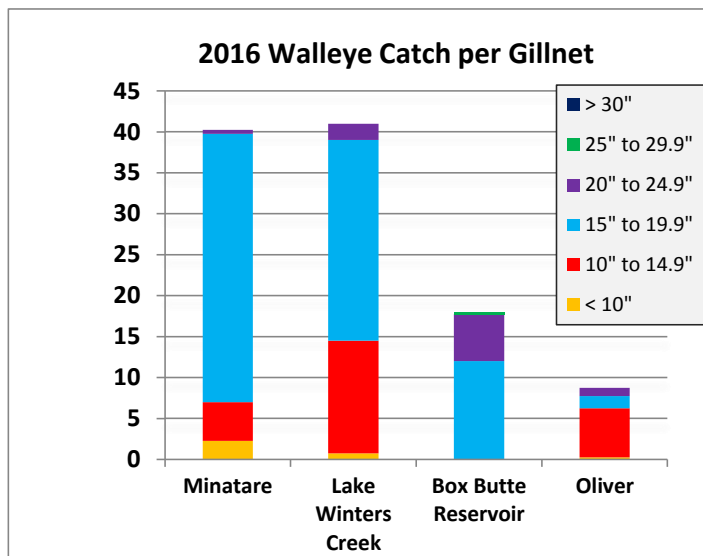
2017 is going to be a great year for walleye fishing in the panhandle. Lake Winters Creek, and Lake Minatare both had gillnet catch rates

over 40 fish per net. These two lakes were the top two in the state for walleye abundance. Anglers will find lots of keeper fish in 2017 as Minatare had 82% of the catch over 15 inches and Lake Winters Creek had 64% over 15 inches. There were a few bigger fish over 20 inches in Lake Winters Creek but the average size was slightly higher in Lake Minatare (15.6 inches) than in Lake Winters Creek (15.4 inches).

Anglers looking for big fish should try Box Butte Reservoir. Box Butte had a good abundance of walleye with a gillnet catch of 18 fish per net and all of the fish sampled were over 15 inches with 33% of the catch over 20 inches. The biggest walleye sampled in 2016 came from Box Butte measuring 28 inches in length.

With the low water levels in Oliver the past few years, the overall abundance of walleye is low. However, anglers can still find some keepers with 28% of the catch over 15 inches. Oliver filled up in 2013 during a big rain but has been steadily dropping since even through average moisture years.

Whitney was not surveyed in 2016 but typically has a quality walleye population with fish of all sizes. Whitney can be difficult to fish as the lake is always turbid due to the clay suspension in the reservoir. Anglers have best luck fishing live bait and lures with rattle or good vibration.



28 inch walleye collected at Box Butte Reservoir in 2016.

## Black Bass

Bass were not surveyed in 2016 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.

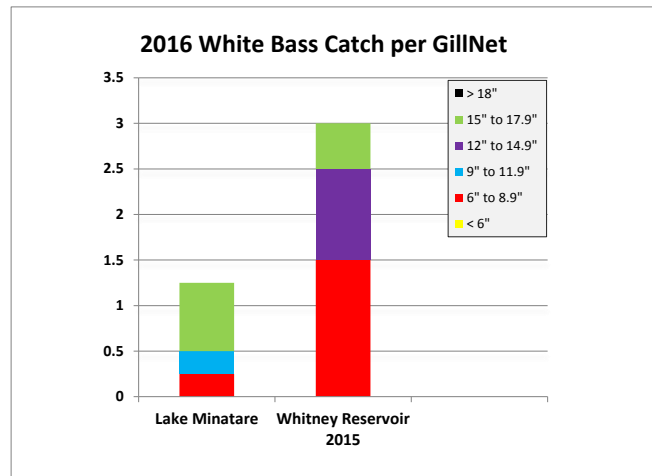
## White Bass and Wipers

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. White bass and wipers were sampled in low abundance in 2016 in Lake Minatare with a catch rate of 1.25 and 1.0 fish per net respectively. Although the densities were low, the average size wiper was 22.7 inches and 16% of the white bass catch was longer than 15 inches. 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.

Whitney was not surveyed for white bass in 2016 but typically produces some quality fish over 12 inches as shown in the graph above from the catch rates in 2015. Most white bass in Whitney Lake are caught by anglers searching for other species such as walleye.

## 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. 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.

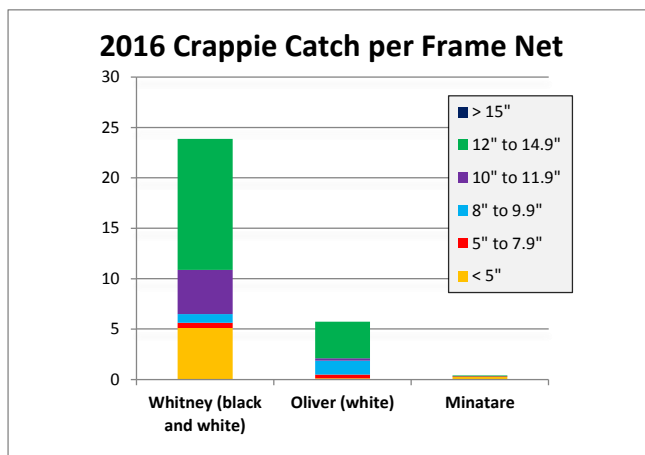


Large wiper collected from Lake Minatare in 1016



## 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. Oliver and Whitney were the only two reservoirs sampled for crappie in 2016. A few were collected in Lake Minatare during the northern pike sampling but was not representative sample of the abundance of that population. Whitney is the top irrigation reservoir for crappie with a frame net catch of 24 fish per net in 2016. The average size crappie surveyed in Whitney was 10 inches for blacks and 10.7 inches for white crappie with 73% of the total crappie population over 10 inches. Oliver crappie numbers were low in 2016 with catch of 5.75 fish per net but had some fish over 12 inches. Box Butte and Minatare have quality crappie fisheries but were not surveyed specifically for crappie in 2016.



The top irrigation reservoir for bluegill is Box Butte Reservoir. Although no bluegill surveys were conducted in 2016, angler reports suggest continued quality fishing for bluegill.

Both Box Butte and Lake Minatare should be good for yellow perch in 2016. These lakes were not surveyed for perch in 2016, but a few individuals were captured during the fall walleye survey. Box Butte had the largest perch with some fish approaching 12 inches. Angler reports during 2013 were good throughout the summer and into the fall for perch over 10 inches at Box Butte with some reports of fish approaching 13 inches.



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) 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).