Valentine National Wildlife Refuge

2020 Fish Survey Report

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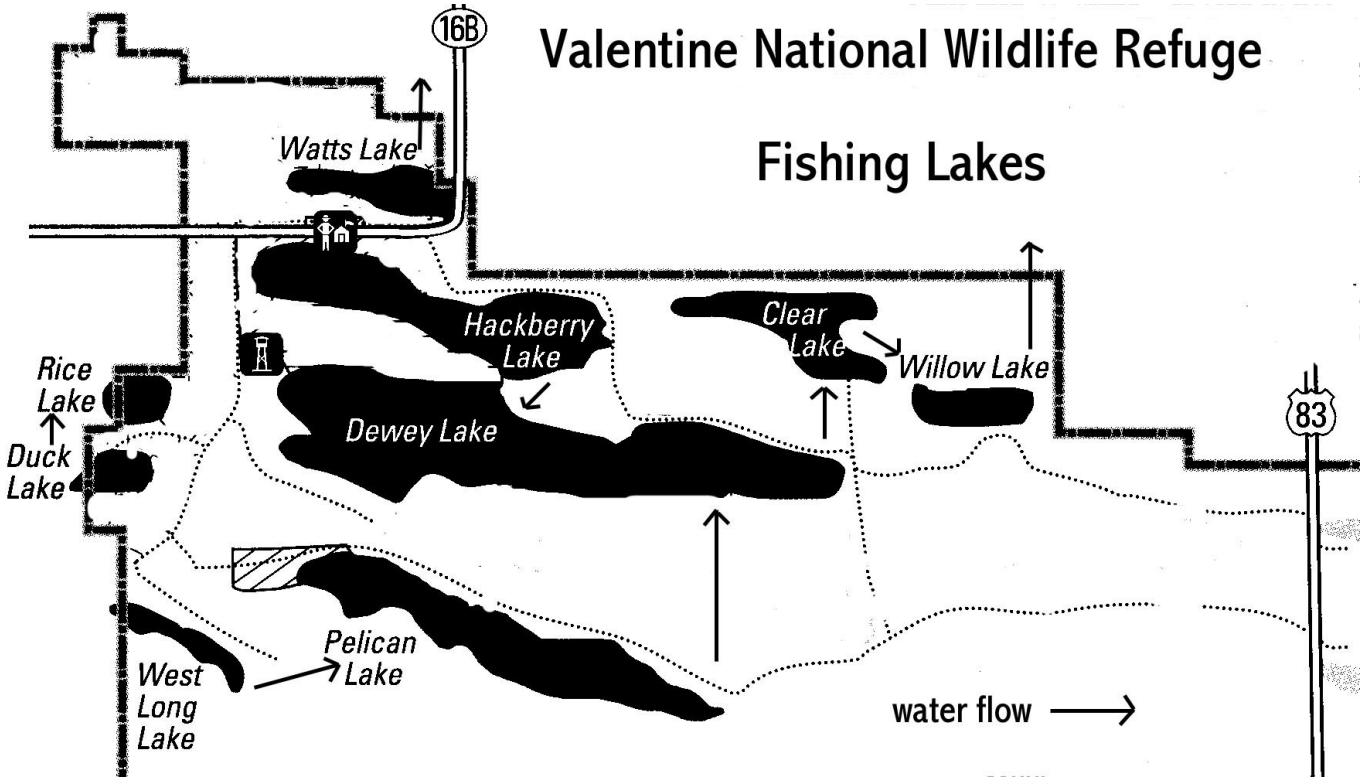
The Valentine National Wildlife Refuge (VNWR) is 71,516 acres and was established in 1935. The refuge not only protects a portion of the Sandhills but provides a resting, feeding, and nesting area for migrating waterfowl and habitat for many species of wildlife that use the refuge lakes, marshes, mid and tall grass prairies, and meadows. Public recreation including hunting and fishing are promoted. Nebraska Game and Parks Commission (NGPC) manages the lakes for recreational fishing in cooperation with the U. S. Fish and Wildlife Service (USFWS) as defined in a Cooperative Agreement between the USFWS and the NGPC. The VNWR contains 39 lakes of which 9 are open to fishing. Some of these lakes are too alkaline to support fish and a majority of the lakes are very shallow and can be heavily vegetated which makes them susceptible to frequent winter-kills and summer-kills. Those lakes that are open to fishing are: Watts, Hackberry, Dewey, Clear, Willow, Rice, Duck, West Long, and Pelican. Fish species found in these lakes include largemouth bass, bluegill, yellow perch, northern pike, black crappie, grass pickerel, black bullhead, and common carp. Due to common carp not being eliminated from Pelican Lake, tiger muskellunge were stocked to provide an additional angling opportunity while helping to control unwanted common carp numbers. Fishing is permitted on the Refuge from 1/2 hour before sunrise to 1/2 hour after sunset. The use of internal combustion motors is prohibited on all Refuge lakes. Boats propelled with oars, paddles, or electric motors may be used. The possession or use of live or dead minnows and the possession of any fish not taken from Refuge waters is prohibited. Frozen or dead smelt may be used as bait.

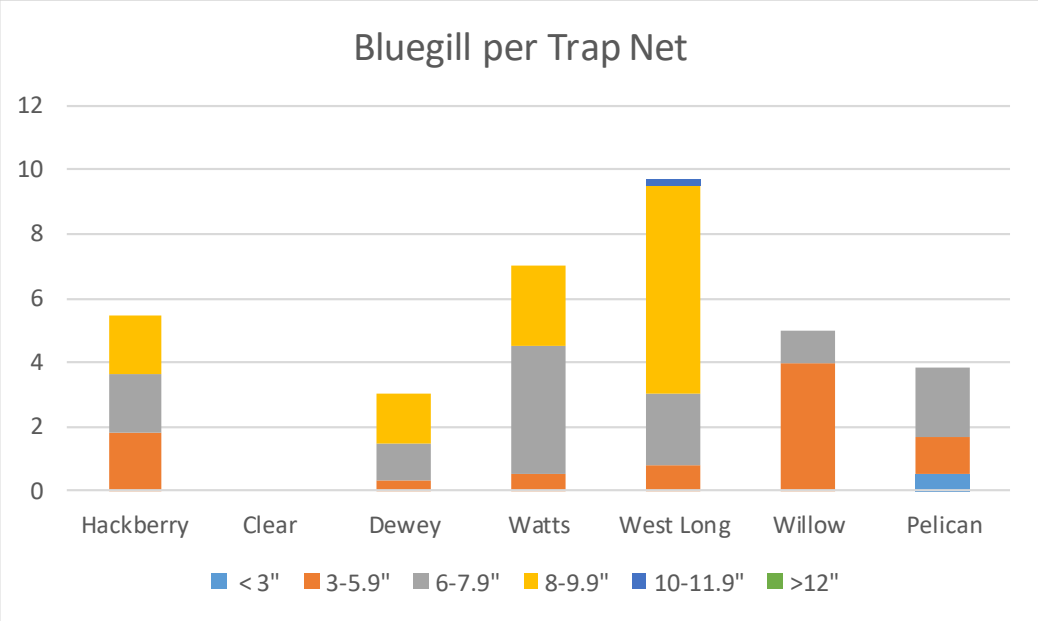


Map of the Valentine National Wildlife Refuge lakes open to fishing south of Valentine, NE.

Survey Methods

Nebraska Game and Parks personnel took over fish population surveys on the VNWR in 2014. Prior surveys were conducted by USFWS personnel out of the Pierre, SD office. Biologists use electrofishing to target largemouth bass at night and common carp during the day. Frame netting surveys are used to target shore-oriented species such as bluegill, yellow perch, black crappie, and northern pike. Once these fish are collected they are weighed, measured, and a few scales are removed to determine the age of the fish and evaluate growth compared to other lakes. 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, sometimes lasting only a few days making sampling these species in several waterbodies relatively difficult.

Bluegill

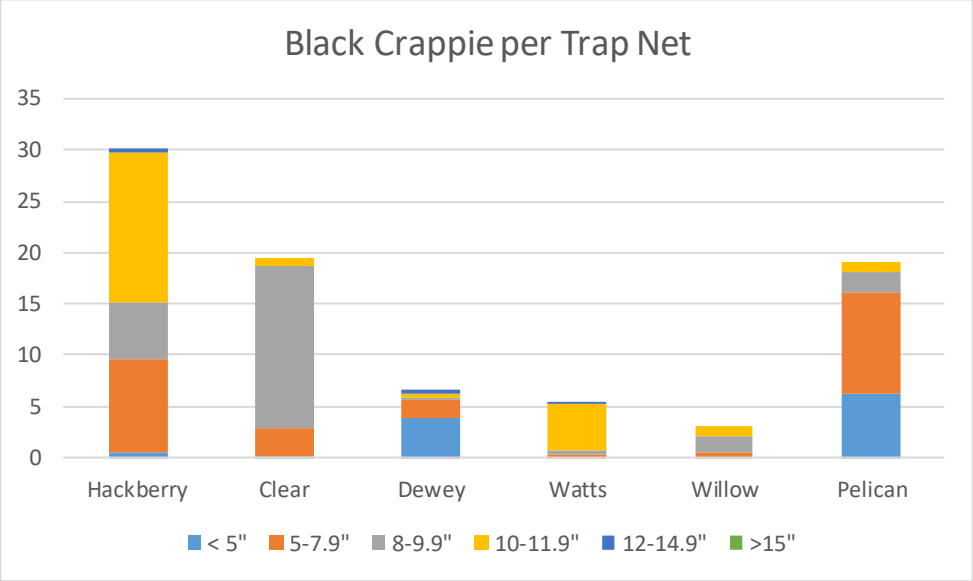


Bluegill are one of the most abundant species found throughout the lakes open to fishing on the VNWR. Anglers from across the country travel to the refuge each year searching for trophy bluegill. While densities of bluegill on the Refuge are lower compared to bluegill populations in the eastern part of the state, these lakes are highly productive and have the potential to produce quality- to trophy-size fish. Growth rates can also vary between lakes on the VNWR due to differences in water quality, vegetation density, and other fish species.

In 2020, 7 of the 9 lakes open to fishing on the VNWR were sampled for bluegill densities. Lakes with no common carp populations and no or very low northern pike populations usually produce the most bluegill. West Long Lake had the highest catch rate for bluegill with 9.75 fish per net and approximately 70% of the bluegill sampled were over 8 inches. The largest bluegill sampled was 10.4 inches and was also captured at West Long. Watts Lake should also not be overlooked with a catch rate of 7 bluegill per net and a growing population since the renovation in 2015.

Panfish Regulations: Bluegill, Yellow Perch, Crappie, Green Sunfish, Etc. Bag limit of 15 fish in combination and a possession limit of 30 fish. Effective January 1, 2019 , the daily bag limit shall include only five bluegill of which only one fish can be 10 inches or greater in length at Pelican Lake.

Black Crappie



Hackberry, Dewey, Clear, Watts, and Pelican Lakes have black crappie populations on the Refuge. These lakes produce some quality crappie and seem to persist even with high common carp populations. The 2020 surveys indicated that Hackberry had the highest crappie abundance with 30.1 fish per net. The population showed an excellent size structure with 50% being over 10 inches in length. Hackberry also had the largest black crappie sampled at 14.6 inches. A decent black crappie population was also sampled at Clear Lake with 19.4 fish per net, but the size structure was a little smaller with 80% of these fish between 8-10 inches. Since the 2015 renovation of Watts Lake, the black crappie population is still growing. However, Watts Lake should not be overlooked as some black crappie approached 12 inches and there was an overall catch rate of 5.5 fish per net. Some black crappie were salvaged out of Hackberry Lake and transferred to Watts in preparation of the 2021 renovation.

Anglers should target black crappie with jigs that represent small baitfish such as bluegill, which is a primary prey item for these fish.

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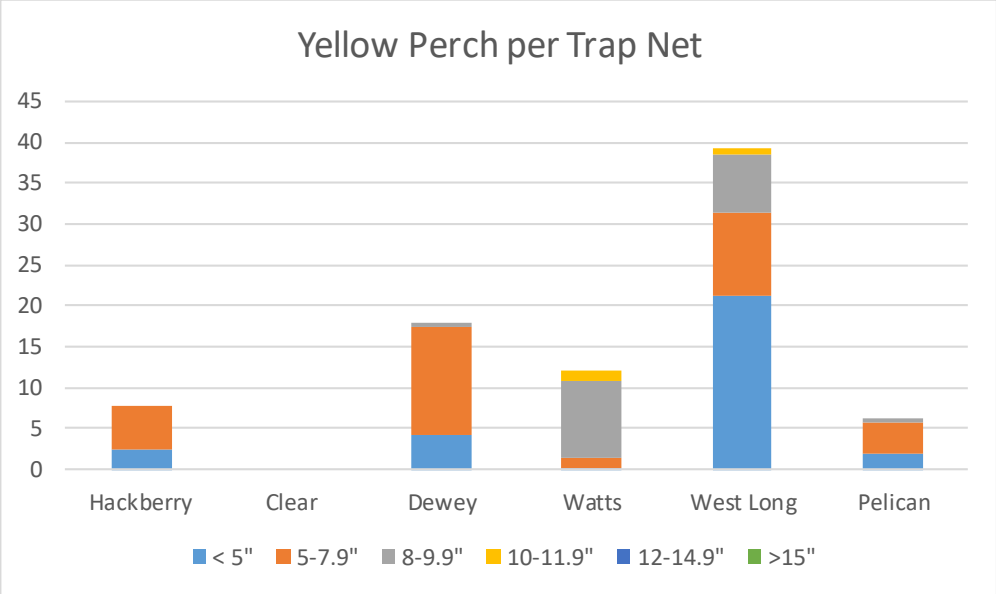
Yellow Perch



Yellow perch are a favorite among anglers as they are great table fare and are easily cleanable. While yellow perch are present in all nine lakes open to fishing on the refuge, only six of these lakes were sampled for perch during the 2020 field season. These populations greatly vary from year to year due to spring recruitment of young fish and angling pressure. To sample yellow perch, frame nets were set during the spring spawning period (late-March to early-April), however unpredictable weather and a short spawning period can make sampling difficult. West Long Lake had the highest catch rate for yellow perch with 39.25 perch per net. West Long also had a strong year class of age-1 fish which should provide excellent future perch fishing opportunities. During the spring 2020 sampling the largest perch sampled was 11.8 inches from West Long Lake, however larger individuals were captured during other sampling methods/times. Dewey Lake had the second highest catch rate of yellow perch with 17.8 perch per net. Although these fish were smaller, larger fish were sampled later in the summer utilizing other sampling methods similar to West Long Lake.

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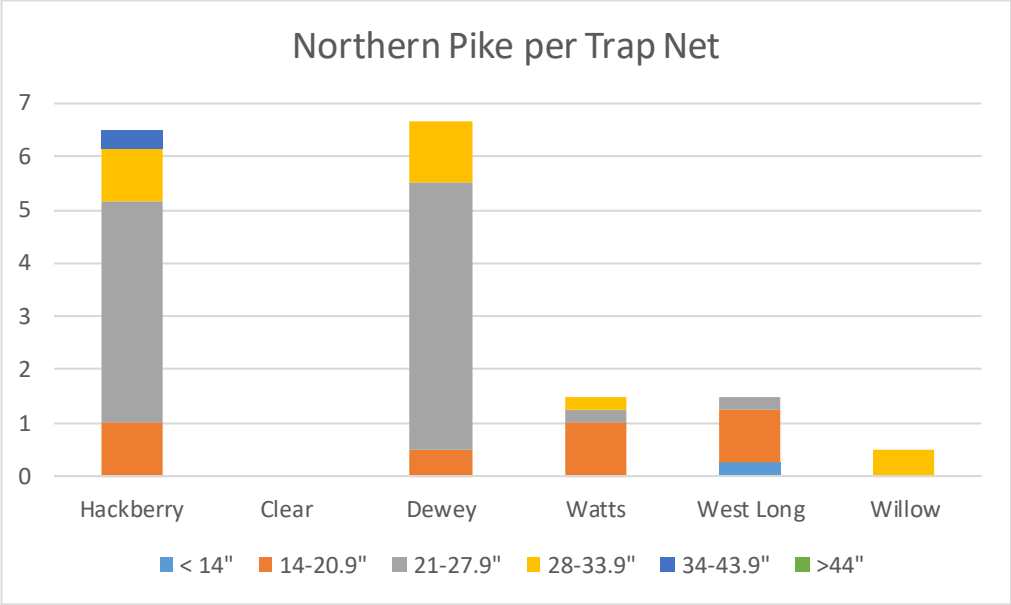
Northern Pike



Northern pike populations exist across several of the lakes on the Valentine refuge. These fish are a large predatory fish that anglers across Nebraska travel to target during the spring, early summer, and through the ice during the winter months. Northern pike are managed on the refuge as a sport fish and are utilized as a management tool for common carp control. Common carp control is a high priority for both USFWS staff and NGPC staff. Anglers have always had fishing opportunities for northern pike on the refuge and several of the lakes will continue to have these opportunities once these systems are renovated to remove common carp.

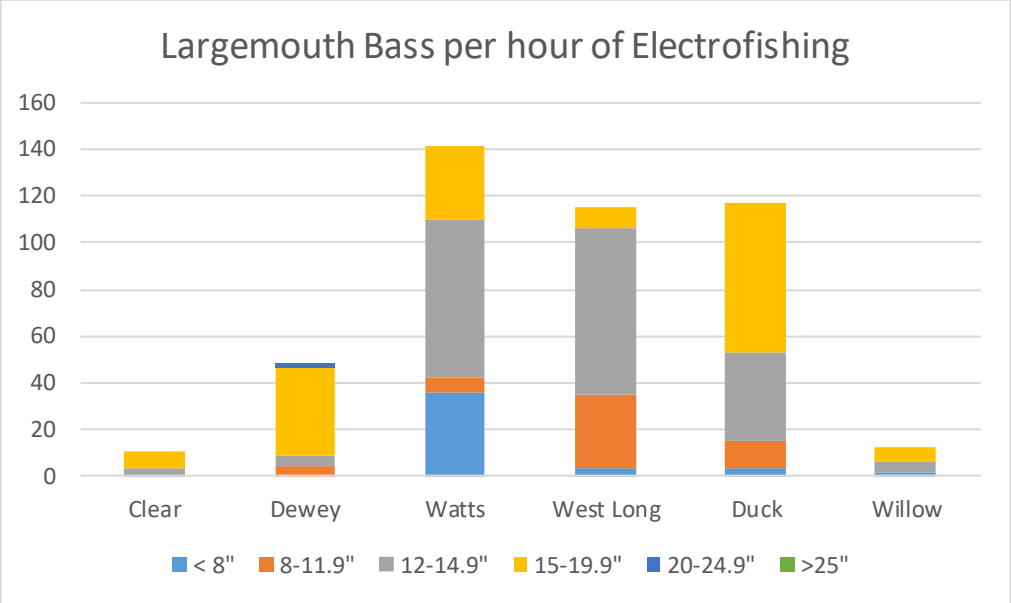
Northern pike populations are sampled in mid to late March as soon as ice comes off these bodies of water and the pike are venturing in shallow to spawn. Water temperature fluctuations can cause this to happen relatively quickly some years and anglers are reminded to not necessarily rely on survey results to determine the best fishing locations. Higher than normal water levels in the spring of 2020 increased shallow backwater spawning areas for northern pike making sampling these populations relatively difficult. 2020 surveys indicated Dewey Lake had the highest catch rate of pike with 6.66 fish per net. The largest pike was captured at Hackberry Lake and measured 39.8 inches. Northern pike have also become established at Watts Lake since the renovation in 2015. Anglers are also reminded it is illegal to transfer fish from one body of water to another.

Pelican Lake was renovated in 2018 and common carp were not eliminated from the system. To aid in common carp control on the waterbody, tiger muskellunge (northern pike X muskellunge hybrid) were stocked to help control these unwanted invasive species and provide angling opportunities.

Northern Pike Regulations: Daily bag limit of 3 fish with a possession limit of 10 fish. The daily bag limit shall include not more than one fish 34 inches or greater in length.

Tiger Muskellunge Regulations: Daily bag limit of 3 fish with a possession limit of 3 fish. The daily bag limit shall include not more than one fish 34 inches or greater in length.

Largemouth Bass



Largemouth bass also flourish in these highly productive systems. These fish are sampled at night with electrofishing gear when they venture in shallow to feed. Bass are the primary predator in these lakes to help control common carp numbers. They are also used to control panfish recruitment by reducing panfish abundance and allowing the remaining panfish to grow extremely well without increased competition for available prey items.

Watts Lake had the highest catch rates for largemouth with 141 fish sampled per hour. This lake was once known for its tremendous bass population and has now continued to improve after the 2015 renovation. The next two highest catch rates came from Duck Lake (117 bass per hour) and West Long Lake (115.5 bass per hour). Duck Lake had the best size structure of largemouth with 55% of these fish being over 15 inches. The largest bass sampled in 2020 came from Dewey Lake and measured 21.6 inches.

Largemouth bass are usually targeted during the spawning period in mid to late May or can be targeted with weedless topwater baits during the summer months when these lakes become heavily vegetated.

Largemouth Bass regulations: Daily bag limit of 5 with a possession limit of 10. The daily bag limit shall include no more that one black bass 21 inches or greater.

Aquatic Habitat Plan Phase II

Over the past several years there has been a lot of work completed on the portion of the refuge that contains the nine public fishing waters. Area users have seen many improvements to the refuge including: roads, angler/boater access, dredging of channels to improve movement of water between lakes, and the installation of carp barriers. Of the nine fishing lakes, four are currently free of common carp (Duck, Rice, West Long and Watts). The overall goal of this large interagency project is to eliminate common carp from this segment of the refuge working from the upper part of the watershed and proceeding downstream.

Over the next several years, plans are to systematically treat the remaining lakes in the system to eliminate carp while still providing some fishing opportunity to anglers during this period. In 2015, Watts Lake was renovated and now provides a fishery for anglers while Pelican, School, and Whitewater lakes were renovated in 2018. Hackberry Lake was scheduled for renovation in 2019 but due to above average precipitation was postponed and has been rescheduled for 2021. Once Hackberry is completed, Dewey Lake will follow the next year. After Dewey the final renovations will occur at Clear, Willow, and McKeel lakes. Some of the listed lakes are not open to fishing but connect during high water events and contain carp populations so renovations are necessary to prevent carp from being reintroduced. Several months prior to the renovations, length limits on largemouth bass and northern pike will be rescinded to allow anglers to harvest them using normal methods. Fisheries staff will also conduct a salvage operation and transfer collected sportfish to other public waters.

The removal of common carp from the system will allow for more management options than available in the past. Current plans are to manage the upper lakes (Duck, Rice, Watts, West Long, Pelican, and Hackberry) for quality panfishing and largemouth bass with an emphasis on bluegill, black crappie, and yellow perch. The proposed fishing regulations for largemouth bass and panfish will follow the statewide regulations except on Pelican Lake. Pelican Lake will be managed for a trophy bluegill fishery returning it to its historical prominence by limiting bluegill harvest to a daily bag limit of 5 of which only one can be over 10 inches. The lower lakes (Dewey, Clear and Willow) will be stocked with bluegill, yellow perch, black crappie, largemouth bass, and northern pike to provide anglers pike fishing opportunities.

Pelican Lake was stocked with tiger muskellunge in 2019 to help with control of common carp numbers.

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 in 2010 (mussels eliminated via a winter drawdown that successfully froze them out), Lewis and Clark Lake (2015), Lake Yankton (2017), Glenn Cunningham Lake (2018; mussels eliminated with drawdown) 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 inch 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 veligers occurs statewide from 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**! Note: Curly leaf pondweed is established at Merritt Reservoir in Cherry County.

CLEAN- Remove plants, animals, and mud by thoroughly washing 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.

For more information on fisheries management or activities on the Valentine National Wildlife Refuge contact:
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