



# LAKE OF THE WOODS and RAINY RIVER INFORMATION

December 1, 2017 – April 23, 2018

Lake of the Woods is a border water, shared with the Canadian provinces of Manitoba and Ontario. The Minnesota portion of Lake of the Woods has several regulations that differ from the general statewide regulations. Please take the time to familiarize yourself with these differences to avoid inadvertently violating any regulations. Make sure that you note the effective dates of the various regulations outlined in this summary. Regulations that apply to Lake of the Woods during the summer are different than those listed here.

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## *Minnesota Waters Fishing Regulation Summary*

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### **Walleye and Sauger**

*Lake of the Woods (Dec. 1, 2017 – Apr. 14, 2018)  
and Fourmile Bay (Dec. 1, 2017 – Feb. 28, 2018)*

The Walleye/Sauger aggregate limit is eight (no more than four can be Walleye). **Walleye** from 19.5 through 28 inches must be immediately released. Only one **Walleye** over 28 inches total length may be possessed.

*Fourmile Bay of Lake of the Woods  
(Mar. 1, 2018 – Apr. 14, 2018)*

The Walleye/Sauger aggregate limit is two (all Walleye 19.5 inches and longer must be immediately released).

*Rainy River (May 13, 2017 – Feb. 28, 2018)*

The Walleye/Sauger aggregate limit is six (no more than four may be Walleye). **Walleye** from 19.5 through 28 inches must be immediately released. Only one **Walleye** over 28 inches total length may be possessed.

*Rainy River (Mar. 1, 2018 – Apr. 14, 2018)*

The Walleye/Sauger aggregate limit is two (all Walleye 19.5 inches and longer must be immediately released).

### **Northern Pike**

**All Northern Pike from 30 through 40 inches must be released immediately, and only one Northern Pike over 40 inches may be possessed.** The possession limit for Northern Pike is three.

There is no closed season for Northern Pike on Lake of the Woods or the Rainy River.

### **Yellow Perch**

The bag limit is 20 Yellow Perch per day, with 40 in possession.

There is no closed season for Yellow Perch.

### **Lake Sturgeon**

**Lake Sturgeon cannot be harvested from Oct. 1, 2017 through Apr. 23, 2018.** Catch and release fishing is allowed during this time period.

See the "Canada-Minnesota" Border Waters section of the fishing regulation booklet for more details about Lake Sturgeon fishing regulations.

For a more thorough listing of all regulations that apply to the Lake of the Woods area, please see the "Canada-Minnesota" Border Waters section in the 2016 Minnesota Fishing Regulations (pp. 45-47).

### **Fish and Game Violations**

*If you witness a violation, please report it. Don't let poachers steal your fish and wildlife. If you see someone violating a hunting or angling law, or hear about a violation, call the toll-free 24-hour TIP (Turn In Poachers) hotline at 1-800-652-9093*

## Creel Survey

**Creel Survey** is the tool used to estimate the number and pounds of fish anglers harvest from a water body. The value of a creel survey is twofold for Lake of the Woods. First, since a target harvest (a safe level of harvest that is based on the physical characteristics of the lake) has been determined for Lake of the Woods, creel survey gives insight into where harvest is relative to the target. Secondly, creel survey provides the ability to see what the consequences of management actions are on anglers. The most significant management action that has been undertaken on Lake of the Woods is the implementation of a reduced limit and the protected slot (for Walleye). This action was undertaken to reduce harvest to a safe level, below the target. In other water bodies, creel survey may be used to gauge the effectiveness of regulations designed to improve the size structure or overall abundance of a fish population.

Summer creel surveys were conducted annually on Lake of the Woods from 1981 through 2007, and winter surveys were conducted most years between 1989 and 2006. Annual creel surveys on Lake of the Woods were discontinued after 2007 due to the funding shortfalls affecting the Fisheries Section. With current, and anticipated funding, annual creel surveys are no longer possible. The current plan is to conduct a full series of creel surveys (summer and winter on Lake of the Woods, and spring and fall on the Rainy River) two years out of every four. We will have winter creel surveys for this and next winter, followed by summer creels on Lake of the Woods, and the spring and fall creel surveys on the Rainy River in 2018 and 2019.

The winter creel survey is conducted by a Creel Survey Clerk travelling on the lake by truck and snowmobile. During his travels the clerk counts the number of fish houses and open-ice anglers. He will also stop at a sample of the houses, which he checks for occupancy, and talks to the anglers. If you happen to be selected for an interview, you will be asked questions about your fishing experience, including when you started fishing, how many fish you have released and how many you kept. You may also be asked to estimate the lengths of any fish you released, and the clerk may measure the lengths of your harvested fish. Participation in the



This picture shows the creel clerk using binoculars to count fish houses

survey is voluntary, but **please do your part for fisheries management and cooperate with the survey.**

**Creel Survey Results** are available for the surveys that were conducted during the winter of 2016-17, and from the summer of 2016 on Lake of the Woods.

**The winter fishery of 2016-17** was a little shorter than the historical norm. Safe ice, where vehicles could drive on the lake, came about during the last week of December, and continued through mid-March. Fishing success was good last winter, with both Sauger and Walleye being harvested at an average rate (for Lake of the Woods). Three hundred twenty-five thousand pounds of Sauger, and 350 thousand pounds of Walleye were harvested. Both of these values are well above the ten-year average level of harvest. The high harvest was driven by the highest angler use we have measured. There were over 2 million angler hours<sup>1</sup> expended on the lake last winter, compared to a 10-year average of 1.5 million angler hours. Additionally, anglers reported catching, and releasing, numerous “bait-stealers” of 8 to 10-inches in length. Some of those fish (the Walleye) will be keepers this coming winter.

A summer creel survey was not conducted in 2017, due to budgetary issues. Fishing activity during the **summer of 2016** was not very busy Lake of the Woods. From the opening of Walleye season in May, until the end of September, anglers spent about 640,000 angler hours fishing on the lake. This is below the recent (since 2005) average pressure measured on the lake. Just under 180,000 pounds of Walleye, and another 61,000 pounds of Sauger, were harvested last summer. The Walleye harvest was relatively low, likely because of the stormy weather we experienced most of the month of June, when Walleye catch rates are usually at their highest. During June anglers had difficulty getting onto the lake due to the weather. Sauger harvest was very close to the average harvest since 2005. The majority of our summer Sauger harvest takes place during July and August, when fishing conditions were more amenable to fishing on the lake.



This is a picture of the creel clerk interviewing an angler.

<sup>1</sup> An angler hour is a way to measure angling pressure. One angler fishing for 1 hour generates 1 angler hour of pressure. If 2 anglers in a fish house fish for 1 hour they have generated 2 angler hours of pressure.

## Lake of the Woods Fish Population Surveys and Status

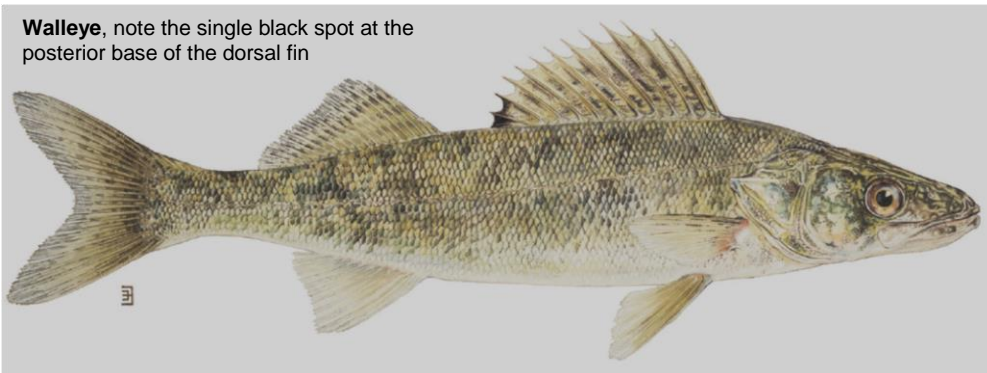
**What makes a healthy fish population?** The number of year classes that are present is a major indicator of the health of a fish population. A year class is simply a group of fish that are of the same age; they were "produced" in the same year. *A population of fish with a large number of year classes is considered healthier than a population of the same species, living in similar habitat, with fewer year classes.*

So why is a population with many year classes healthier? There are several reasons. First, the presence of many year classes is an indicator of relatively low mortality. When a greater number of fish survive from one year to the next, they have a good chance to grow old and stay in the population longer. Second, a large number of year classes suggest the environment is suitable for that species. A suitable environment allows a species to successfully reproduce annually, rather than infrequently, only when environmental conditions are highly favorable. For instance, a species at the edge of its range will tend to reproduce infrequently under atypical weather conditions.

Finally, research has shown that large, old fish contribute more offspring to a fish population than small fish, especially during years when weather is not optimal for reproduction. In a fish population with many year classes, there are numerous first and second year spawners that will produce huge numbers of eggs. These eggs tend to survive when conditions are ideal, but may not in years when conditions are not as favorable. Large old fish produce large, high quality, eggs (the eggs are larger because of larger yolks. Yolks are the embryonic fishes food supply) that will survive in less ideal conditions.

**How is the health of the fish population monitored?** The largest lakes in Minnesota are sampled every year, in order to closely monitor their fish populations. Lake of the Woods is one of the ten lakes included in this Large Lake Sampling Program. These lakes are at least 15,000 acres in size, and typically support the best Walleye fisheries in the state.

Anglers fish the Minnesota portion of Lake of the Woods for a variety of species, including Walleye, Sauger, Yellow Perch, Northern Pike and Lake Sturgeon. Due to the cultural and economic importance of Walleye and Sauger, a great deal of population monitoring effort is focused on them.

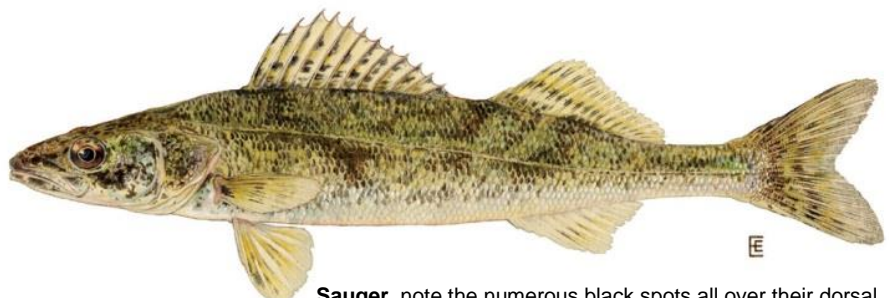


**Walleye**, note the single black spot at the posterior base of the dorsal fin

In the spring, at the end of April, **spawning Walleye electrofishing** is conducted at the Long Sault Rapids, near Birchdale, MN. This assessment monitors the size structure of the mature (spawning fish) segment of the Walleye population. Electrofishing is a non-lethal technique, in which electric current is applied to the water. Fish exposed to the current are stunned and float to the surface, where they can be picked up with a net. The length and sex of captured fish are recorded, and the fish are released unharmed.

The most recent samples depict a Walleye population that has changed a great deal since the first electrofishing survey was conducted in 1982. One of the highlights is that the current spawning population has more large fish in it. In 1982 the most common length of female Walleye sampled was about 17 inches. Recently, that has increased to about 26 inches. During that same period, the relative abundance of male Walleye sampled has declined quite a bit, which is of concern. This decline may be due to the increase in angling pressure that has taken place since the early 1990s. Despite the decline, there are still enough males on the spawning run to fertilize the available eggs.

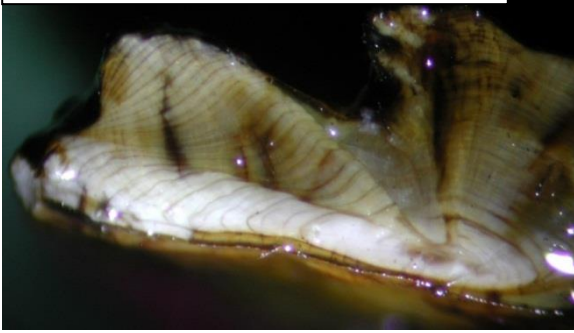
Smaller (younger) Walleye (from 8 to about 23 inches long) are sampled during **fall gill net sampling**. During the first three weeks of September gill nets are set at 16 sites around the Minnesota portion of Lake of the Woods. Biologists record the sex, stage of maturity, length and weight of each fish caught in the gill nets. The otoliths ("ear bone" structures used to determine the age of fish) are removed from a sample of the fish.



**Sauger**, note the numerous black spots all over their dorsal fin. Many Sauger have a small white spot on their tail.



An otolith from a 27-year old, 28.5-inch long Walleye. This is the oldest Walleye we have found on Lake of the Woods.



By sampling annually, and comparing the data to past years, changes in fish populations (age distribution and age of sexual maturity) can be described and monitored. Abundance is estimated from the average number of fish caught per gill net. More fish in the gill net suggests there are more fish in the lake. Fall gill net data also allows biologists to determine how many year classes of a fish species are in the lake, and the relative strength of those year classes.

The most important fish species on Lake of the Woods are managed with a **target harvest** as a major management component. The target harvest is based on a number of physical and chemical lake characteristics, and is simply the estimated poundage of fish that can safely be harvested in a year, on average. The harvest measured through creel survey is averaged across a number of years because environmental conditions can have a significant effect on angling success in any particular year.

**Walleye forecast.** Walleye catches in the 2017 gill net survey averaged 18.3 Walleye per gill net. This level of abundance is above the 1968 to 2016 average of 15.1, but represents a significant drop from 2016. In 2016 there were a variety of indicators that suggested Walleye were unusually “catchable” that year. As such, it appears that the 2017 sample is more of a true representation of Walleye abundance than the 2016 sample.

Figure 1 is from a series of 52 net sites that have the longest history of being surveyed. All of these nets are located close to shore, in less than 25 feet of water. In 2002 we added 12 nets that surveyed the off-shore (33 to 37 foot deep water) portions of Lake of the Woods.

The off-shore nets can, at times, paint a very different picture of the Walleye population than the near-shore nets. For instance, in 2015 the Walleye catch rate in the off-shore nets was almost twice as high as it was in the near-shore nets, though in 2016, and 2017, catches were much more even. A consistent difference between the near-shore and off-shore nets is that there tend to be more “large” Walleye in the off-shore nets.

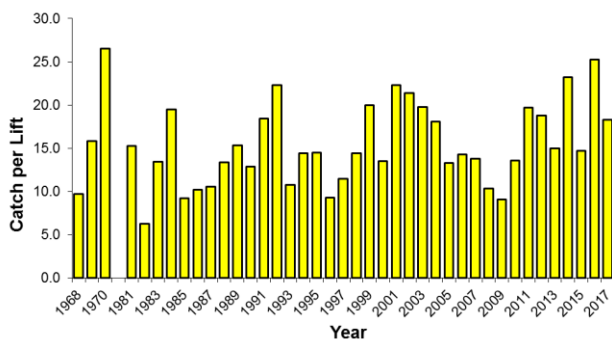


Figure 1-Annual walleye near-shore gill net catch rates, from 1968 to 2017.

Walleye catch rates tend to vary quite a bit. Some of this variation is due to environmental conditions during the fall sampling period but most of it is attributable to the presence, or absence, of strong year classes.

The strongest year class of Walleye that has ever been produced was from 1966. Other notable year classes include the 1991, 2001, and 2011 year classes. The 2013 and 2014 year classes appear to be strong, but the data are incomplete for these year classes. The 2016 and 2017 year classes are predicted to be of

moderate strength, but there are some indications that the 2016 year class will actually be strong.

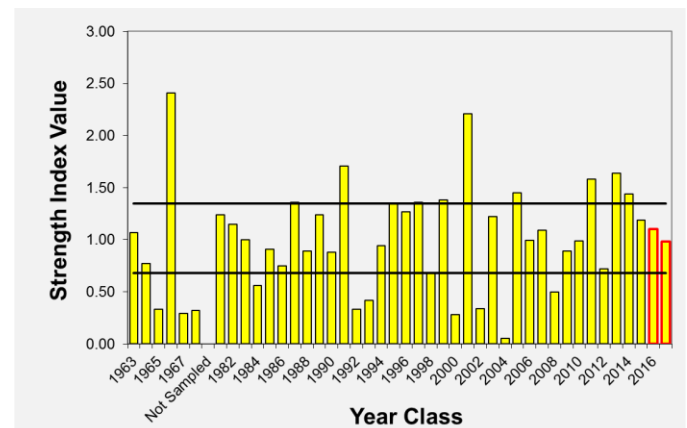


Figure 2-Walleye year class strength, 1963 to 2017. Note that the 2016 and 2017 strengths are predicted. The horizontal lines are the bounds of strong and weak year classes. If a bar is higher than the upper line it is a strong year class, if a bar does not reach the lower line, the year class is weak.

Since 1990, very weak year classes were produced in 1992, 1993, 2000, 2002, and 2004. All of these summers had unusually cold temperatures, which persisted through the summer, in common.

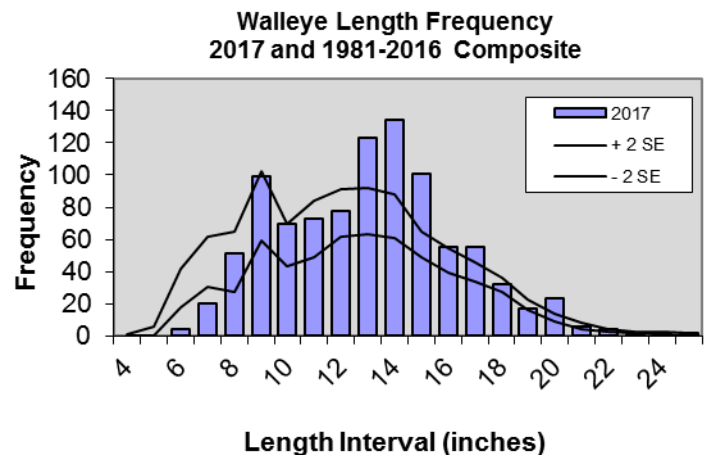


Figure 3-Walleye size distribution from 2017 fall gill net survey. The zone between the lines is normal (average). Bars higher than the top line indicate higher than normal abundance for that size group of fish.

Strong year classes can form the majority of what anglers catch for several years. During the winter of 2017-16, anglers can expect to catch good numbers of “eater size” Walleye in the 13 to 16-inch size range. Walleye from the 2013 and 2014 year classes form the bulk of these abundant size groups. “Bait stealer” Walleye, less than 10 inches long, will also be abundant. Trophy-size Walleye (longer than 28 inches) are about as abundant as anglers have come to expect, and Walleye up to 31 inches are caught annually.

Describing the size of Walleye anglers can expect to catch is fairly simple, but predicting angler success is very difficult due to the variety of biological and environmental conditions that influence angling success. For instance, a major wind storm as the ice forms can make the water very turbid, and thereby reduce angling success.

Anglers are frequently interested in the **age of Walleye** they have caught. It is rather difficult to provide this information with a great degree of certainty, because individual fish can grow at different rates. The sex of a fish, stage of sexual maturity and various genetic factors all influence growth within a population. Differences in growth between lakes can also be due to climatic conditions and lake productivity.

In general, Walleye in Lake of the Woods reach 12 inches when they are three years old. Male Walleye start to mature when they are 12 inches long and three years old, but it is not until they are 16 inches long and five years old that all male Walleye are sexually mature. Female Walleye grow faster than male Walleye after they reach three years of age. They also mature at an older age. Female Walleye start to mature when they are four years old and 15 inches long, but all of them are not sexually mature until they are at least seven years old and, at least, 20 inches long. Generally, female Walleye that are 25 inches long are about 10 years old; 30-inch females are about 20 years old.

**Sauger outlook.** The Sauger population remains at a high level of abundance, at 16.5 Sauger per gill net lift. For perspective, the 1968 to 2015 average catch is 13.9 Sauger per gill net. Sauger abundance peaked in 2009, primarily because Sauger from the 2006 year class grew to a size that was vulnerable to being captured in the gill net.

Sauger abundance has been above the 1968-2015 average since 2006. This level of abundance has been maintained by the consistent recruitment of moderate to strong year classes, with relatively few weak year classes.

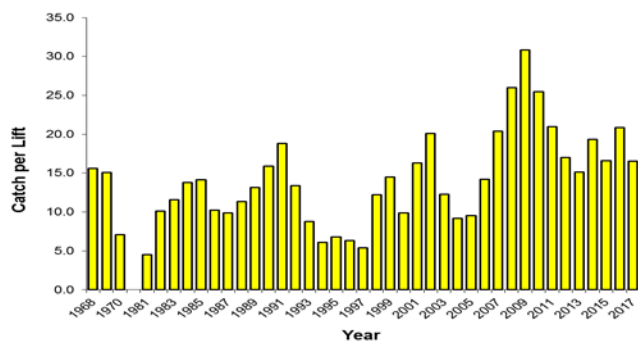


Figure 4-Sauger abundance from 1968 to 2017.

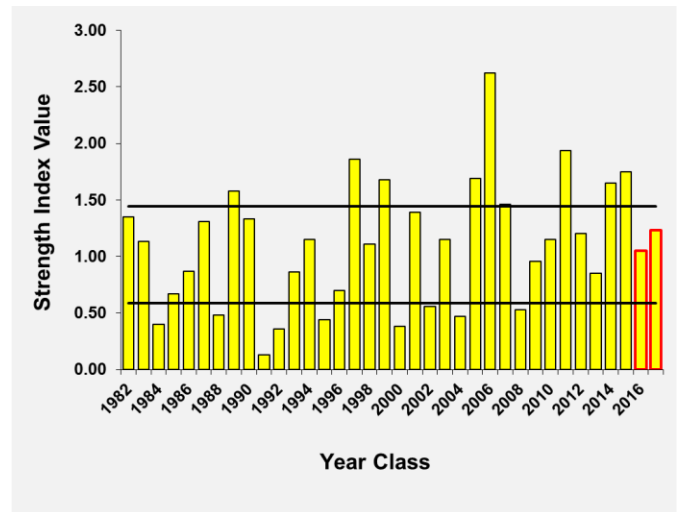


Figure 5-Sauger year class strength, 1982 to 2017. Note that the 2016, and 2017 strengths are predicted. The horizontal lines are the bounds of strong and weak year classes. If a bar is higher than the upper line it is a strong year class, if a bar does not reach the lower line, the year class is weak.

Sauger grow at a much slower rate than Walleye, do not get as large as Walleye, and do not get as old. Typical lengths for Sauger sampled during the fall assessment are 6 inches for age-1, 8 inches for age-2, 10 inches for age-3 and 12 inches long for age-4. In 2017 the oldest Sauger we sampled 12 years old. The 12 year old males averaged 16.5 inches long, while the females averaged was 18.2 inches long.

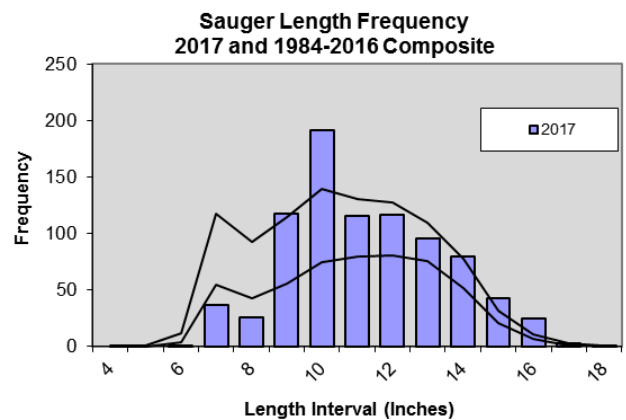


Figure 6-Sauger size distribution from 2017 fall gill net survey. The zone between the lines is normal (average). Bars higher than the top line indicate higher than normal abundance for that size group of fish.

Sauger from 12 through 15 inches long will be very commonly caught by anglers this winter. These Sauger are mostly from the 2009 through the 2012 year classes. Anglers will definitely notice the abundance of “bait-stealers” from 9 to 11 inches in length. These Sauger are from the 2014 and 2015 year classes.

A thorough description of the sampling programs conducted on Lake of the Woods can be viewed on the Baudette Area Fisheries page on the MN-DNR web site (<http://www.dnr.state.mn.us/areas/fisheries/baudette/index.html>).



## **Trash on Lake of the Woods**

An unfortunate side-effect of the high angler use in the winter is the disturbing amount of trash left on the ice, which then washes up on local beaches in the spring. A wide variety of objects, from aluminum cans, to wooden blocks, to plastic bags of human waste, all wash up on private and public shorelines.

To address concerns about the trash levels on the lake, Lake of the Woods County established a partnership with the Lake of the Woods Tourism Bureau, private citizens and business owners, including resorts, and the Minnesota Department of Natural Resources. The charge to this group was to formulate workable solutions, and to educate resource users about the problem.

It is difficult to identify the reasons anglers would leave trash on the ice, but it is likely that some of it blows out of trucks and some may simply be lost in the snow when garbage is stored outside the fish house. To address garbage being lost by accident, consider being more careful when transporting the garbage back to shore. To make garbage easier to find after being stored outside the fish house, try to use garbage bags that are not white. Also, don't store your garbage outside the fish house when the wind starts to blow. It would be simple to store it in the back of a truck. Finally, remove the wood used to block up your house, and don't use treated wood for that purpose.

To make it more convenient for anglers to bring their garbage off the ice, and then deposit it in an appropriate location, trash receptacles will be located at high-use access sites.

## **Eating fish on the ice?**

Many anglers enjoy consuming a portion of their catch on the lake as part of their fishing experience. Since Lake of the Woods has size restrictions (protected slots) on Walleye and Northern Pike, there are some special rules to follow to stay legal. Recall that it is not normally legal to possess Walleye and Northern Pike on the water/ice in a manner in which the length of the fish cannot be determined. Adhering to the following will keep you legal:

While on the ice, all harvested Walleye and Northern Pike must be intact and measureable, unless the person is in the act of preparing the fish for a meal on the ice.

If Walleye or Northern Pike are prepared for a meal, anglers are required to retain the measureable carcasses, which count toward the possession limit for the remainder of the fishing day.

Do not allow the whole fish or carcasses to freeze together in buckets or bags, since both need to be measureable. Pack them in snow or ice shavings in a bucket or cooler inside the fish house, or vehicle, to prevent them from freezing.

Anglers are required to properly dispose of the carcasses before harvesting additional fish the following day. It is illegal to dispose of fish carcasses on, or under, the ice. If you are possession of the carcasses, those carcasses are considered part of your limit for that day.

## Bait Fish Questions and Answers

In order to prevent the spread of invasive species and diseases, a variety of regulations apply to using minnows for bait. The regulations that apply to your bait are dependent on the species, and if it was purchased from a commercial source, or you harvested the bait for personal use. A disease we are particularly concerned about is Viral Hemorrhagic Septicemia (VHS). Not all species of fish are susceptible to this disease. In the Lake of the Woods area, Emerald Shiners are commonly used for bait, and are very susceptible to VHS. Fathead Minnows and Pearl Dace (Rainbows) are also commonly used, but *these two species are not susceptible to VHS*.

The following Question and Answers apply to VHS susceptible species, such as Emerald Shiners.

**Q:** I purchase my live Emerald Shiners from a bait shop, and freeze what is left over for later use. Do these frozen Emerald Shiners need specific labeling?

**A:** No specific labeling is required for bait that was purchased live from a bait shop. Retain your proof of purchase until all of the purchased, frozen minnows have been used.

**Q:** What if I purchase live Emerald Shiners at a bait shop and some die during my fishing trip?

**A:** Emerald Shiners that die while you are angling are not subject to preservation or labeling requirements.

**Q:** Why are these new regulations in place?

**A:** These regulations have been created to protect the waters of MN from VHS. VHS is a highly contagious and pathogenic fish virus emerging in the Great Lakes region of the United States and Canada. It affects many different species of fish, including game fish, minnows, and rough fish.

A description of VHS, and how it affects fish, can be found at:

[http://www.dnr.state.mn.us/fish\\_diseases/vhs.html](http://www.dnr.state.mn.us/fish_diseases/vhs.html)

➔ **Personally Harvested Emerald Shiners** ←

If you are using **Emerald Shiners you personally harvested**, those Emerald Shiners must have been caught from a certified VHS-free water, and must be labelled. See the web site listed below for more details.

A more thorough listing of regulations affecting bait fish can be found on the MN-DNR web site at: <http://www.dnr.state.mn.us/bait/dead.html>



Emerald Shiner, sometimes called Lake Shiners, are a popular bait fish on Lake of the Woods.