

Leech Lake

ASSOCIATION



The Voice of Leech Lake

Our Mission: To be good stewards of Leech Lake and its environs, recognizing the vulnerability of the lake, and the need for citizens -- both individually and collectively -- to assume responsibility for its care.

Letter from the President,

Another dry winter with below normal moisture and snowpack has made regulating Leech Lake water levels this winter more of a guessing game than usual. The lake needs to be drawn down each winter to accommodate the spring melt, but how much? Timm Rennecke of Federal Dam discusses the trade-offs involved in these decisions in the Corps of Engineers report that follows.

Similar dry conditions last winter were rescued by an unusually wet spring which brought water levels to normal and even beyond in time for the summer boating season. We had much concern at the time that the low water would prevent boat traffic through the Roosevelt Canal, and, indeed, our Association dredged the canal twice to make sure that boats could safely pass.

Maintaining the Roosevelt Canal is one example of your membership dues at work. Another is the matching grants we apply for and receive to expand inspections and inspectors at Leech Lake boat landings. In 2015 over half of the Leech Lake inspections were financed by a matching grant we received through Cass County. As mentioned later in this newsletter, those inspectors prevented two boats infested with zebra mussels from entering Leech Lake. All it takes is one.

Another bit of good news on the Aquatic Invasive Species (AIS) front is the result of zooplankton studies carried out in 2015. The DNR

*Leech Lake from Oak Point,
March 2016*



takes monthly zooplankton samples at five different sites on Leech Lake from mid-May through mid-October. While the purpose of these studies is to measure and identify the types of zooplankton in the lake, the studies will also reveal the presence of Zebra Mussel veligers and spiny water fleas. None were found. AIS Inspection efforts will expand in 2016 as more funds are granted to Cass County under the direction of Cass County AIS Coordinator, Rima Smith Keprios. We also anticipate that a much needed decontamination unit will be placed on the north-northeast side of the lake at Bena or Federal Dam.

Other good news is that the Leech Lake fishery is in great shape as reported by DNR biologist, Matt Ward, later in this newsletter. The DNR 2016-2020 Leech Lake Manage-

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UPCOMING EVENTS

May 14th

*Walleye/Northern/Bass
Fishing Season Opener*

June 4-5

Leech Lake Walleye Tournament

July 16-18

Moondance Jammin Country

July 4

Fireworks – City Park

July 16-18

25th Moondance Jam

August 4

*Leech Lake Association
Annual Meeting & Picnic*

August 13-15

Leech Lake Regatta

August 18-20

Cajun Fest, Northern Lights Casino

September 9-11

Muskies Inc. Int'l Tournament

September 10

Ethnic Fest

September 17

Walker North Country Marathon

(Letter From the President continued on page 2)

Letter From the President continued from page 1)



*Leech Lake View of Pine Point,
March 2016*

ment Plan has now been completed after many meetings of the Leech Lake Fishing Advisory Task Force and extensive public input. The new Plan puts additional focus on other sports fish besides walleye, and continues to deal with habitat, cormorants, and other issues. As part of the public input, the DNR has compiled a list of most commonly asked questions regarding the Leech Lake fishery. Some of these questions will be included in this and future newsletters. They are also available online through the DNR Fisheries Office. May you all have a safe and enjoyable spring and summer.

Robert Gisvold, President

THANK YOU

As of Monday, February 29th I will be starting as the Assistant Area Fisheries Supervisor in Grand Rapids. I have genuinely enjoyed working with the numerous and passionate volunteers, constituents, user groups, and associations surrounding Leech Lake since 2011. Throughout this time I have commuted from Grand Rapids while working in Walker, as this is where my family resides. Family is and will always be my priority in life and when this opportunity presented itself, there was only one choice. Thank you too for your time and dedication, and I am grateful to have worked with you.



Sincerely,
Matt Ward

MEET OUR NEW CONSERVATION OFFICER



Please join me in welcoming Conservation Officer Eric Sullivan, who has been assigned to the Walker district replacing CO Gary Summers who recently retired. Eric grew up on a resort in the Long Prairie area and worked in the DNR Fisheries Office in Glenwood while attending college. He graduated in 2005 with a Bachelor of Arts degree in Biology from the University of Minnesota, Morris, and later received an Associate of Arts degree in Law Enforcement from Alexandria Technical College. He completed his law enforcement training in 2006.

In 2007, Eric began work as a patrol officer in the Baxter Police Department. In 2011, he was temporarily assigned to the Lakes Area Drug Investigation Division with the Crow Wing Sheriff's Office. In 2014, he was promoted to Patrol Sergeant with the Baxter Police Department. In July of 2015, Eric graduated from the DNR Conservation Officers Training Program and was subsequently assigned to the Walker area.

Eric and his wife, Jackie, were married in 2007. They have twin girls, Anika and Adora, born in 2013. The family enjoys exploring, fishing, water sports, camping, and riding ATV's. One of Eric's passions is chasing muskies and other large fish such as sturgeon and northern pike. We believe that the Walker area will suit Eric and his family just fine.



Leech Lake Update, 2016
 Walker Area Fisheries Office
 07316 State Hwy 371
 Walker, MN 56484
 218-547-1683



2015 Young of the Year Walleye Growth and Abundance

- Walleye hatched in May 2015 were sampled in July seining, August trawling, and September electrofishing and gill netting. Growth and relative abundance are monitored throughout their first year of life.

Growth

- July Seining: The average length (3.3 in) was below the long-term average of 3.4 inches.
- August Trawling: The average length (5.0 in) was below the long-term average of 5.3 inches.
- September Electrofishing: The average length (6.1 in) was similar to the long-term average of 6.0 inches.

Abundance

- July Seining: The number sampled per acre (81) was above the long-term average of 64.
- August Trawling: The number sampled per hour (258) was above the long-term average of 156.
- September Electrofishing: The number sampled per hour (97) was similar to the long-term average of 98.
- September Gillnetting: The gill net catch rate (0.28 fish/net) was similar to the long-term average of 0.29.

Walleye Recruitment

- Walleye are considered fully recruited to the fishery and gill nets at age-3 in Leech Lake. Year class strength index values are determined from gill net catch rate data. Incomplete values for 2013 (1.65) and 2014 (1.68) currently exceed the long-term average (Figure 1). The 2015 year class is predicted to be above average (1.66).

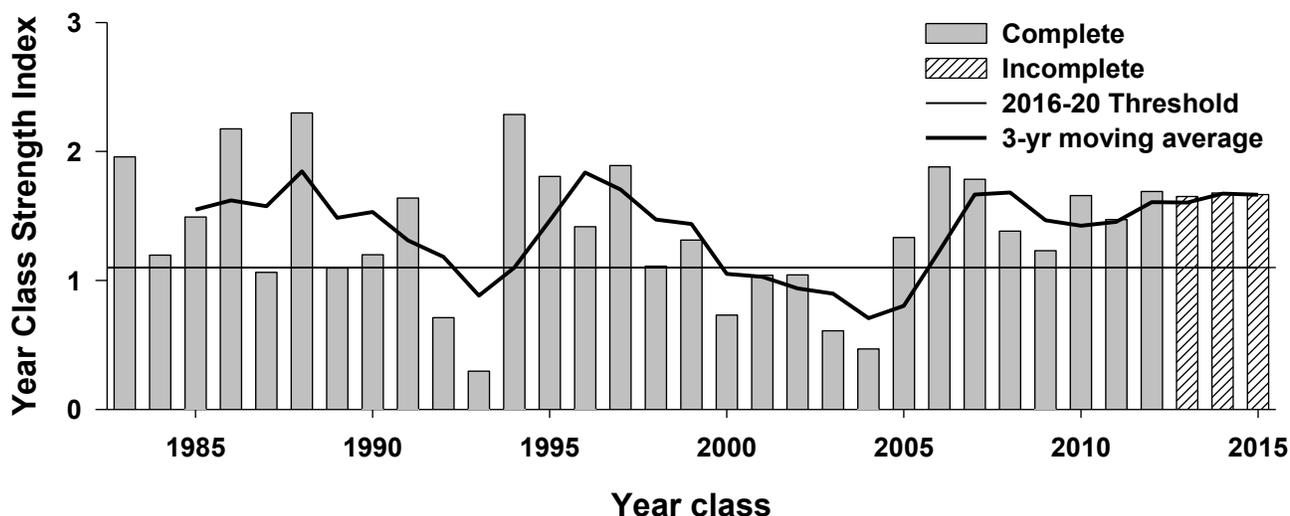


Figure 1. Year class strength index of Walleye in Leech Lake, 1983-2015. Fully recruited (shaded bars) incomplete (hatched bars) year classes are indicated. The horizontal line represents the Management Plan Objective Threshold. The darker line represents the 3-year moving average. Walleye are considered fully recruited to the fishery at age-3.

(DNR Report continued on page 4)

(DNR Report continued from page 3)

Adult Gamefish Abundance

- Walleye remain abundant. Gill net catch rates (12.4 walleye/net) were the third highest since 1983 (Figure 2). Lengths of Walleye sampled ranged from 7 through 26 inches, and showed a balanced size distribution. Seventy-six percent of the sampled Walleye were outside of the 20-26" Protected Slot Limit and available for harvest (Figure 3).
- Yellow Perch abundance (18.6 fish/net) remains below average (21.1 fish/net) but continues to increase incrementally from the record low observed in 2013 (12.1 fish/net). Perch up to 13" long were sampled.
- Northern Pike catch rates (5.9 fish/net) were above average and pike up to 34" long were sampled.
- Three good year classes of cisco were sampled, which should continue to provide predation relief to the Yellow Perch population.

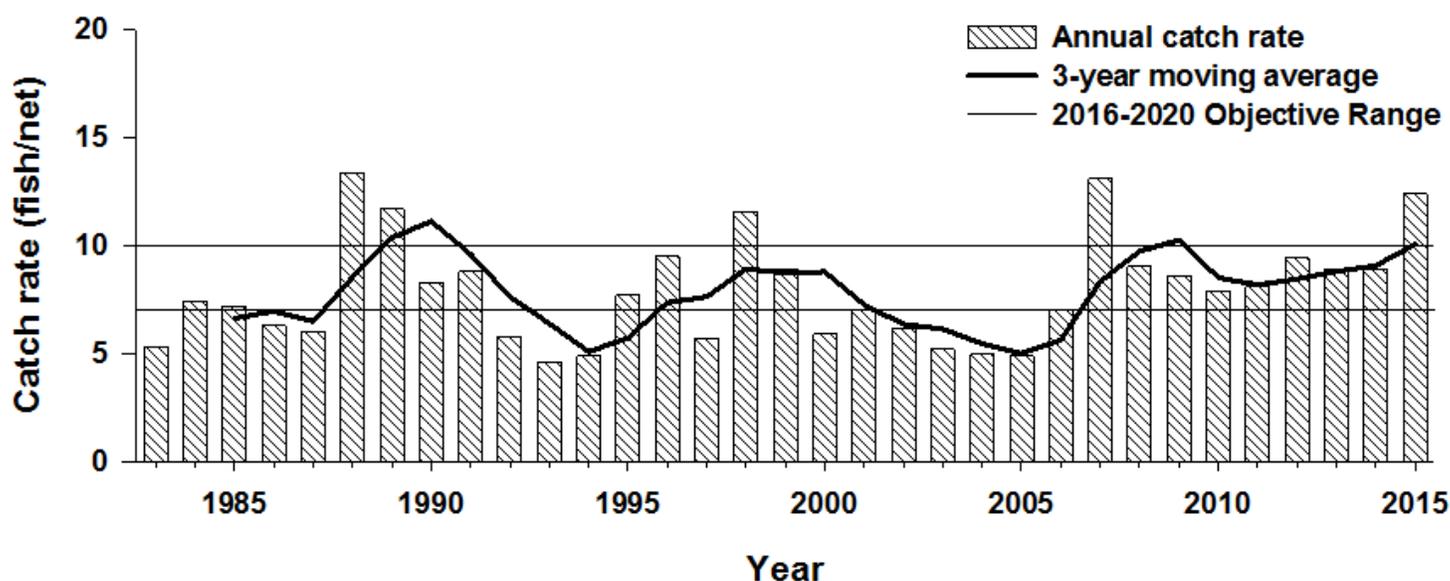


Figure 2. Gill net catch rates (fish/net) of Walleye in Leech Lake, 1983-2015. Horizontal lines represent the 2016-2020 Management Plan Objective Range. The darker line represents the 3-year moving average.

2015 Fishing Outlook

- Another good Walleye fishing season is expected on Leech Lake. At the beginning of the 2016 fishing season, Walleye produced in 2012 will be 15-17" long, the 2013 year class will be 13-15" long, and the 2014 fish will be 10-13" long. With the current regulation (20-26 inch Protected Slot), approximately 3/4 of Walleye encountered by anglers during the upcoming season will be available for harvest (Fig. 3).
- The next scheduled creel surveys on Leech Lake are for the summers of 2016 and 2017 and the winters of 2015-2016 and 2016-2017. Anglers should expect to encounter clerks at these times.

(DNR Report continued on page 5)

(DNR Report continued from page 4)

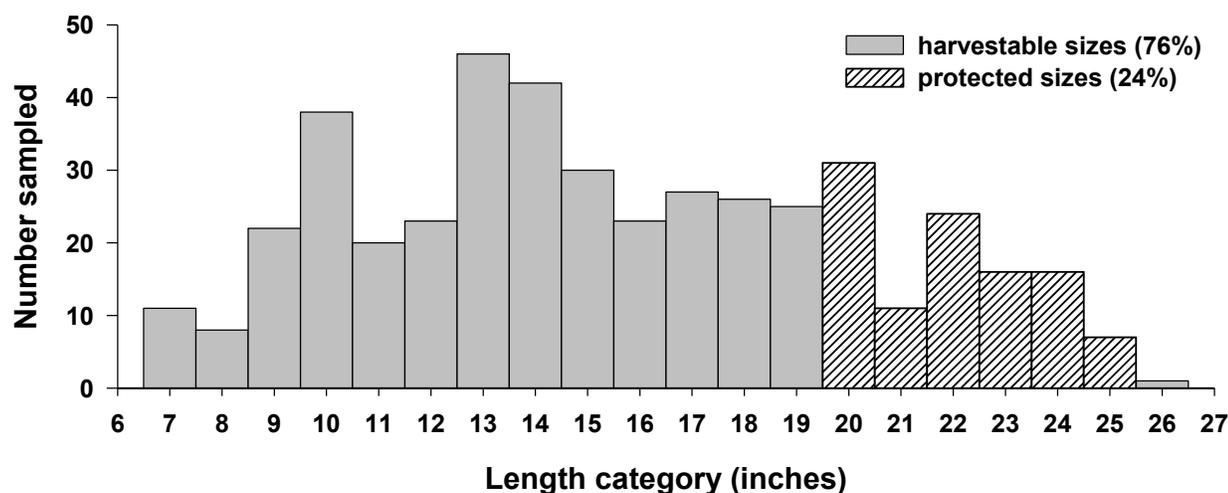


Figure 3. Length-frequency distribution of Walleye sampled with gillnets in Leech Lake, 2015.

2016-2020 Fisheries Management Plan Finalized

- The Fisheries Management Plan for Leech Lake was updated for 2016-2020 through a series of six meetings held at the Walker Community Center from March through August 2015.
- At these meetings, a group of 16 stakeholders with diverse local and statewide interests provided input to the DNR on proposed 2016-2020 management goals, objectives, and actions. Members and affiliations can be found in the management plan at the link below.
- Statewide input on the draft plan was solicited through an on-line comment period from September 8 through October 9, 2015.
- Respondents (92) had the opportunity to provide input on all proposed objectives and management actions by expressing their level of satisfaction/dissatisfaction for each. In addition, respondents had the opportunity to provide detailed written comments on all proposed objectives and management actions.
- Overall, there was a high level of satisfaction with the draft Management Plan. Levels of dissatisfaction were never greater than 20% for any proposed objective or management action. Lower levels of satisfaction corresponded with higher levels of uncertainty.



- DNR responses to commonly expressed questions and concerns are addressed in a Frequently Asked Questions (FAQ) document. Both the FAQ document and the Fisheries Management Plan for Leech Lake 2016-2020 are available on the Walker Area Fisheries website:
- <http://www.dnr.state.mn.us/areas/fisheries/walker/index.html>

2016 survey plans

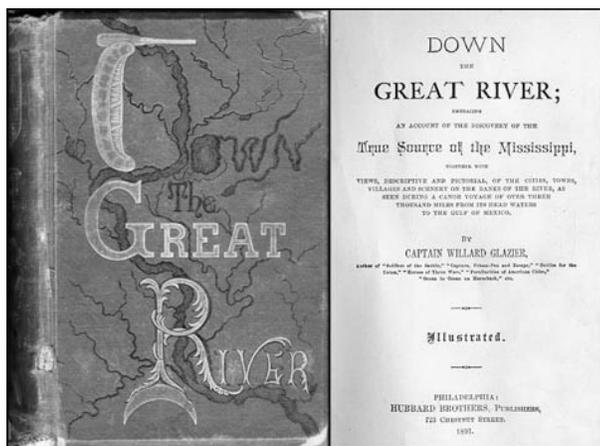
- Juvenile walleye and perch will be sampled seining in July, trawling in August, and electrofishing in September. Adult gamefish will be sampled with gillnets in September. Zooplankton will be sampled monthly from May through October. Water quality samples will be collected in July, and water temperatures are monitored hourly throughout the year.
- If you would like to volunteer and assist with any of the assessments just described, please contact the Walker Area Fisheries office at 218-547-1683.
- Additional information including various past Leech Lake reports are available on our website at:
<http://www.dnr.state.mn.us/areas/fisheries/walker/index.html>



LEECH LAKE IN ANTIQUITY



In 1884 Captain Willard Glazier, a Civil War Veteran and explorer, traveled by way of Leech Lake to find the “true source” of the Mississippi River. While Schoolcraft had identified Lake Itasca as the river’s source as early as 1832, Glazier had heard rumors that there were waters flowing into Lake Itasca from somewhere beyond, and that this “somewhere beyond” was the “true source.” He believed that discovering the “true source” would make him famous, and also give him material for a



book, which he did in fact write. He recounts his adventures in the book titled “Down the Great River; An Account of the Discovery of the True Source of the Mississippi,” published by Hubbard Publishers of Philadelphia in 1891. His book provides an interesting picture of the Leech Lake country as it was in 1884, before the arrival of the loggers and homesteaders. Excerpts from his book have been included in past Newsletters. In this final installment, Captain Glazier and his party have arrived at Lake Winnebogosis where they part with their Indian guide, Chenowagesic, who will now return to his home on Leech Lake, while Captain Glazier continues his trip down the Mississippi River to the gulf.

THE JOURNEY CONTINUES (IN THE WORDS OF CAPTAIN GLAZIER)

Parting With Chenowagesic...

The valuable service rendered by my faithful guide, Chenowagesic, made his retirement at Lake Winnibegoshish one of the notable events of our voyage. The ceremonies attending his leave-taking were made impressive by reason of the important part he had borne in leading us to the Source of the Mississippi. Our parting took place in front of a cluster of wigwams near the shore of the lake. George, Paine, the Lagards, Kitchinodin (the Indian missionary), and many Indians from the village were present.

As soon as all were assembled I arose, and addressing Chenowagesic, recounted the leading incidents of our journey and privations we had endured in the descent of the river. Thanked him for the important duty he had performed, and expressed the hope that, after a visit to his family, he would be able to rejoin us at Aitkin and complete the voyage with us to the Gulf.

When I had concluded my remarks I paid Chenowagesic and Sabistise Lagard, who was to return to Leech Lake with him, for the time they had served. Gave each a photograph of myself, and divided equally between them all the tobacco we had in reserve. This done, Chenowagesic straightened himself up to his full height and began speaking. In a manner characteristic of the Indian he prefaced his speech by referring to the circumstances under which we had met at Leech Lake. Related his impressions on first seeing me. Referred to his promise to guide me to the True Source of the Great River; spoke with pride of having accomplished all that he had undertaken, and closed by trusting that it might be his good fortune to meet us in Aitkin, as I desired; but, should he not be able to do so, he would anticipate meeting me and my companions in the Happy Hunting Ground. A general handshaking followed, after which Chenowagesic and Sabatise got into their canoe and started for Leech Lake.



(Leech Lake in Antiquity continued on page 7)

(Leech Lake in Antiquity continued from page 6)

Afterword:

This was not the end of the story. Once articles about Glazier's journey began appearing in Eastern journals, some of those publications suggested that it was Glazier rather than Schoolcraft who had discovered the true source of the Mississippi. This set off a firestorm at the Minnesota Historical Society which had a political interest in making sure that Lake Itasca remained the accepted source. Jacob Breuer, a land surveyor and President of the Minnesota Historical Society, was trying to save the pine forests around Lake Itasca and get a state park established there by the Minnesota Legislature. It was essential to that effort that Lake Itasca be the "true source," even though Breuer himself on his own surveying expedition put the source in a slightly different place.



The MN Historical Society set out to prove that Glazier and his claims were fraudulent. They assigned one General James Baker to investigate Glazier's claims. Here is what General Baker wrote: "Glazier is stupid, pretentious, bombastic, a fraud, a liar, a plagiarist, a tourist, a literary thief, a falsifier of history, a quack explorer, a charlatan adventurer," and so on. These insults should have been enough to get the General sued or shot, but apparently libel laws were less strict in those days. At any rate, the Historical Society met on February 8, 1887 to denounce Glazier and insist that his name be removed from any map where it might appear. The lake Captain Glazier identified as the true source of the Mississippi was known to the French voyageurs as Lac la Biche, or Elk Lake, which lies upstream from Lake Itasca. Glazier renamed Elk Lake after himself, to the horror and outrage of the Historical Society. Besides, said the Historical Society, during high water Elk Lake was simply another bay of Lake Itasca.

The irony here is that Elk Lake could reasonably be considered the source of the Mississippi. Glazier, Schoolcraft, Nicollet and Jacob Breuer had all picked slightly different spots as the true source. Breuer had selected the Heute Terre near DeSoto Lake, Nicollet claimed the source as springing from the bogs in what later became Nicollet Creek, Schoolcraft claimed the

outlet of Lake Itasca, while Glazier agreed with Chenowagisic, his Indian guide, that the source was Elk Lake. State Geologist Newton Winchell concluded that a reasonable argument could be made for all of the above claims, though in the end it was politics that decided the issue. A little snobbery came into play here too. Someone from the Historical Society sniffed that only a "learned" man could claim so great a discovery. Captain Glazier didn't qualify. He was simply a tourist, they opined, who couldn't paddle a canoe and whose incompetence in planning rations for the trip almost led to the expedition starving.



In 1891 Lake Itasca became a state park, passed by the Legislature by one vote. In the years that followed, Captain Glazier must have been somewhat forgiven. In an essay published in 1897 by the Historical Society, the author wrote: "Mr Glazier's adventure will have had the merit of hastening the conclusion, and giving to geography a definite map of the cradle of one of the great rivers of the world."

See [veritascaput @homestead.com](mailto:veritascaput@homestead.com). Science, Politics and the Search for the True Source of the Mississippi Headwaters. Also, see Morrisoncountyhistory.org. Naming the source of the Mississippi River. For more history on Itasca visit <http://www.mnopedia.org/event/creation-itasca-state-park>.



US Army Corps of Engineers

US ARMY CORPS OF ENGINEERS, ST. PAUL DISTRICT, LEECH LAKE

On March 4th, 2016, the water elevation (level) on Leech Lake was 1294.12 feet. The current discharge from the dam was 260 cubic feet per second (CFS).

During the fall of 2015 the National Weather Service (NWS) Climate Prediction Center (CPC) stated that a strong El Niño weather pattern was likely to develop. The term El Niño refers to the large-scale ocean-atmosphere climate phenomenon linked to a periodic warming in sea-surface temperatures across the central and east-central equatorial Pacific. El Niño represents the warm phase of the El Niño/Southern Oscillation (ENSO) cycle, and is sometimes referred to an annual warming of sea-surface temperatures along the west coast of tropical South America.

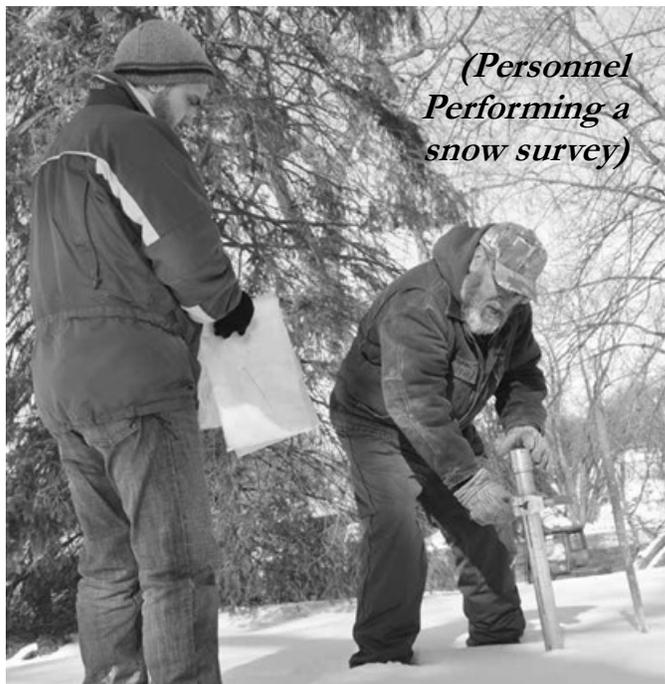
During winter, El Niño episodes feature a strong jet stream and storm track across the southern part of the United States, and less storminess and milder-than-average conditions across the North. La Niña episodes feature a very wave-like jet stream flow over the United States and Canada, with colder and stormier than average conditions across the North, and warmer and less stormy conditions across the South.



Typically during winter months Leech Lake is drawn down to make room for spring runoff of water occurring from snow melt in addition to normal expected rain. However during January and February 2016 we have been very cautious because of the El Niño episode.

Snow Surveys

Snow surveys are done by the US Army Corps of Engineers to keep track of moisture conditions throughout the watershed. The Leech Lake Watershed currently only has about 1.8 inches of moisture in the snow so far this winter. That compares to 3 – 4 inches or more during a normal winter at the end of February. Why do we monitor moisture content in the snow? If we draw-down too much Leech Lake will not fill back to the desirable summer level in May if there isn't enough moisture existing in the watershed combined with spring rain. Conversely; Leech will be uncomfortably high in



(Personnel Performing a snow survey)

May if we don't draw-down enough. Effective Leech Lake winter draw-downs rely on advanced planning because it takes many weeks for Leech Lake Dam to draw-down 6 inches or more during the winter, depending on inflow into Leech Lake. Winters, like our current offering from Mother Nature, can try our patience because a dry winter will influence us to minimize the draw-down but then might catch us higher than where we should be if we receive above normal precipitation in spring (when it is too late for us to release higher flows down river for an extended period to achieve an effective draw-down).

A Quick Review Of Our Operating Limits (NGVD 1929):

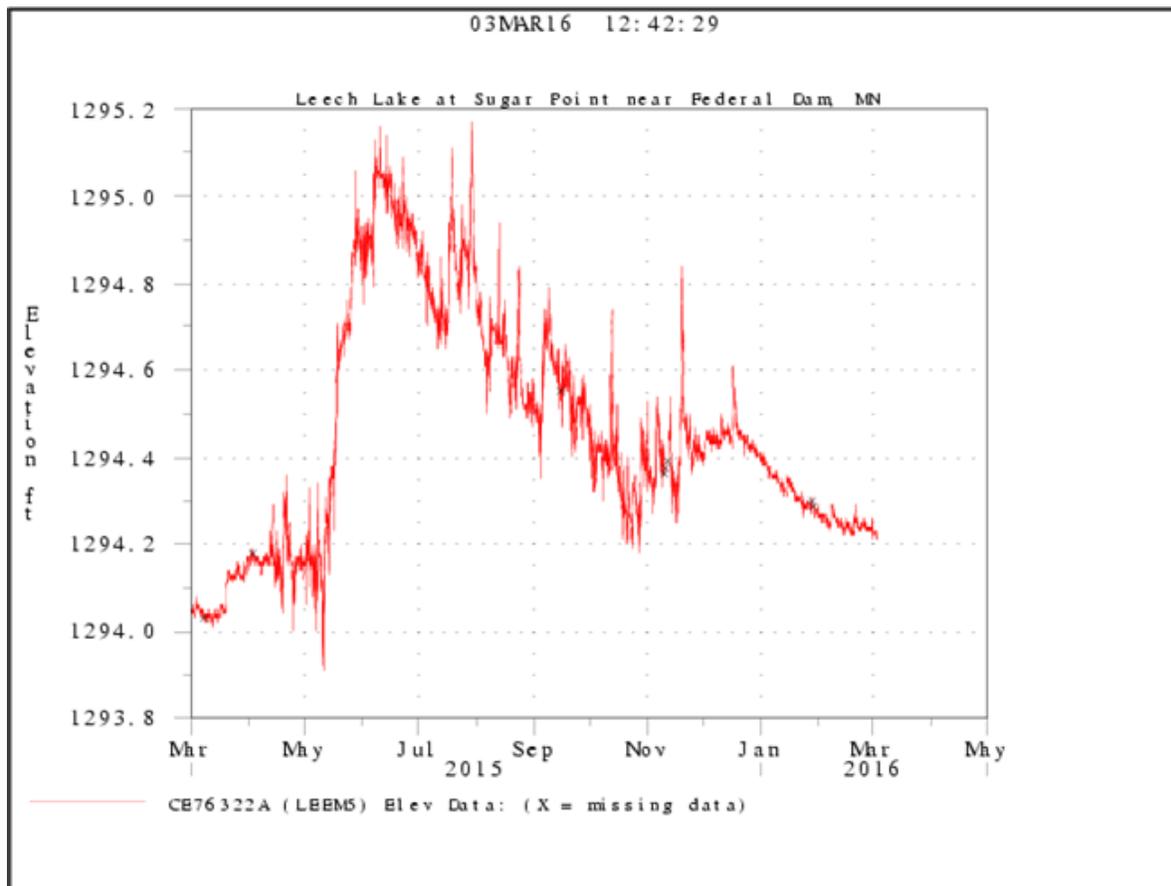
- Leech Lake desirable summer range: EL 1294.50ft - 1294.90ft.
- Normal winter drawdown target: EL 1293.20ft – 1293.80ft.
- Normal operating levels: EL 1293.20ft - 1295.70ft.
- Total operating limits: EL 1292.70ft - 1297.94ft.
(This is an operating plan limit not capacity limit of the dam).

(US Army Corps of Engineers continued on page 9)

(US Army Corps of Engineers continued from page 8)

- Leech Lake Dam is operated for several purposes; Flood Damage Reduction, Tribal Trust, Environmental Stewardship, Recreation, and Navigation.
- Mississippi River channel capacity in the Ball Club/Deer River area is only about 2200 cfs. The total combined outflow of Winnie and Leech cannot exceed that without causing flooding.

See The Leech Hydrograph Below From Mar 2015 To Current:



Operation Summary Correlating to the Leech Lake Water Level Hydrograph:

**** Note the difference in daily fluctuations in summer months from wind and waves compared to winter months when the lake is frozen.**

*** Mar 2015:** Winter drawdown concluded at EL 1294.05 due to low winter moisture conditions.

*** Apr 2015:** Leech Lake only rises to EL 1294.18 from snow melt moisture runoff.

*** May 2015:** Leech Lake rises slightly above desirable summer range due to above normal rain.

*** Jun - Oct 2015:** Leech Lake slowly recedes while in its desirable summer range.

*** Oct - Dec 2015:** Leech Lake rises due to late fall rain.

*** Jan – Mar 2016:** Slow draw-down occurring; waiting to see how much spring precipitation occurs.

(US Army Corps of Engineers continued on page 10)

(US Army Corps of Engineers continued from page 9)

LOOKING FORWARD

The 90-day precipitation outlook for Feb to April, 2016, provided by the National Weather Service (NWS) Climate Prediction Center (CPC), tilts toward slightly below normal conditions across north Central Minnesota:

The 90-day temperature outlook for Feb to April, 2016, provided by the National Weather Service (NWS) Climate Prediction Center (CPC), tilts toward above normal temperatures:

The Climate Prediction Center/NCEP/NWS and the International Research Institute for Climate and Society provides weather predictions and information that affects our weather in North Central Minnesota:

On 11 February 2016 the following was released:

ENSO Alert System Status: The chance of El Niño gradually decreases into the spring and ENSO-neutral is favored by May-June-July (MJJ) 2016. The chance of La Niña increases to 50% in September-October-November (SON) 2016.



LEECH LAKE DAM

Leech Lake Dam is located on the North East corner of Portage Bay and forms the Leech Lake River. The Leech flows into the Mississippi south of US HWY 2 downstream of the MN DNR Mud/Goose Wildlife Management Area. The Corps of Engineers provides recreation facilities such as boat ramps, campgrounds, picnic areas, trails and other services within the grounds at Leech Lake Dam. Check us out and click on “recreation” at www.mvp.usace.army.mil

MORE INFORMATION

You can visit the Corps of Engineers Water Control, Web site at <http://www.mvp-wc.usace.army.mil> and <http://rivergages.mvr.usace.army.mil/WaterControl/shefdata2.cfm?sid=LEEM5&d=7&dt=E> for more information on the regulation of Leech Lake Reservoir. For questions or if you would like to comment regarding how lake levels are affecting you please email: tim.v.rennecke@usace.army.mil.



COMMONLY ASKED QUESTIONS



WALLEYE

When the DNR was compiling public input regarding the 2015-2015 Leech Lake Management Plan, some recurring questions were asked by responders. The DNR compiled some of the more common questions, and a few of these will be included in this and future newsletters. All of the questions are available on-line at the Walker DNR Fisheries Office.

Why shouldn't Walleye be stocked annually?

The DNR recognizes stocking is a valuable management tool when used to meet specific management objectives. In general, stocking has not been necessary to sustain Walleye populations in Minnesota's large natural Walleye lakes. Stocking OTC-marked (oxytetracycline-marked) Walleye fry was one of four tools used to increase Walleye abundance in Leech Lake following a decline in the fishery during the early to mid-2000s. Oxytetracycline is a chemical that adheres to bony structures, allowing biologists to differentiate between stocked and naturally produced individuals. Annual fry stocking rates for Leech Lake from 2005-2014 ranged from 7.5 to 22.5 million. The use of variable densities of marked fry allowed for an evaluation of the effects of fry densities on first-year Walleye growth and survival to the fishery.

These analyses have determined that:

- Higher fry stocking rates resulted in slower growth rates for young-of-the-year Walleye.
- Slower growth rates of young-of-the-year Walleye result in fewer Walleye surviving to catchable sizes.
- Higher Walleye fry densities increased predation on young-of-the-year Yellow Perch, resulting in lower abundances of Yellow Perch surviving to catchable size.
- Since Yellow Perch are the primary prey of Walleye, lower Yellow Perch abundances resulted in below average walleye condition (plumpness) and growth rates).

Are there any genetic concerns with the Leech Lake Walleye population?

No. A genetic evaluation was performed comparing Walleye in Leech Lake prior to 2005 (pre-Boy River strain Walleye fry stocking) with Walleye sampled after 2005. Changes in the genetic makeup of the population were assessed using three common measures of genetic health. Tests demonstrated no declining trends in genetic diversity, no increasing trends of relatedness (inbreeding), and similar genetic diversity of the population before and after 2005 compared to other Minnesota Walleye populations. Growth rates were also compared between stocked and naturally produced individuals, and no statistical differences in growth rates were observed.

By establishing an angler harvest objective threshold for Walleye of 190,000 pounds in the management plan, does this infer a lake shutdown will occur if the threshold is exceeded?

No. Because Walleye are a harvest-oriented species, including a harvest oriented objective in the management plan is important. This threshold represents a harvest level below which angling quality is protected or enhanced. Exceeding this threshold on an infrequent basis will not result in changes to population characteristics (e.g., abundance, growth, age at maturity). However, sustained annual harvest over this threshold may result in changes to population characteristics and indicate a need for a more restrictive regulation.

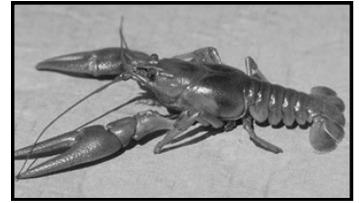
(Commonly Asked Questions continued on page 12)

(Commonly Asked Questions continued from page 11)

RUSTY CRAYFISH

Numbers appear high. How is relative abundance monitored and what impact do rusty crayfish have on Leech Lake?

Rusty crayfish are native to the Ohio River drainage basin and were first sampled by the DNR in Leech Lake in the late 1980s. Catch rates of native and rusty crayfish are recorded annually in both gill net and bottom trawling assessments. Rusty crayfish expansion likely had the greatest influence on lakewide declines in 'cabbage' beds. Increases in the abundance of adult Yellow Perch correspond with declines in rusty crayfish abundance. Juvenile rusty crayfish are frequently consumed by adult Yellow Perch. Research conducted by Bemidji State University concluded that the potential impact of rusty crayfish on Walleye reproductive success is minimal.



CORMORANTS

What is the current cormorant management strategy on Leech Lake and what effects do current population levels have on the fishery?

The Leech Lake Band of Ojibwe, Division of Resource Management will continue annual culling operations targeting returning cormorant adults each spring to maintain abundances below a fall population target of 2,000 birds. The DNR contributes \$33,000 annually toward these efforts. Diet studies conducted in 2004-2007 and 2010 concluded that total feeding effort and fish consumption was reduced by nearly 90% due to culling efforts. Overall, diets of adults and chicks consisted of Yellow Perch (61.0% and 77.4%), Cisco spp. (12.3% and 9.4%), minnows *Notropis* spp. (9.9% and 2.2%), Trout-perch *Percopsis omiscomaycus* (4.1% and 0.4%), and Walleye (4.6% and 3.6%), though considerable variability was observed. An additional diet study is being proposed.

Research concluded that consumption of juvenile Walleyes by cormorants was high enough during 2000-2004 to impact the number of juvenile Walleyes surviving to catchable sizes. The 2000-2005 year classes of Walleye were five of the worst year classes observed since 1983, and this trend was most prevalent in the main lake basin where cormorants fed almost exclusively. Statistical differences were observed in Walleye recruitment, growth, and maturity rates and Yellow Perch growth rates between the pre-colonization, colonization and expansion periods and the cormorant management eras. The differences across these time periods supported the diet study that cormorants were responsible for the reduced walleye populations in the mid 2000's.

HABITAT

'Cabbage' beds have declined in abundance on Leech Lake. Can they successfully be replanted or rehabilitated?



Replanting native submerged aquatic vegetation is difficult and likely cost prohibitive on a lake the size of Leech Lake. There are several native plant vendors that sell aquatic plants, but sales are typically for small scale shoreline restorations and wildlife ponds. Understanding why declines in aquatic vegetation occurred should be determined prior to initiating replanting efforts to maximize rehabilitation success. For local vendor information and planting and shoreline restoration questions within the Leech Lake Watershed, please contact the DNR Ecological and Water Resources Shoreland Habitat Program in Brainerd at (218) 203-4345. Additional DNR information is available at: <http://www.dnr.state.mn.us/grants/habitat/shoreland.html>.

What programs are available for private lake shore owners to protect their shoreline habitat and reduce property taxes while maintaining private ownership? What programs are available for private lake shore owners to sell property so it remains protected?

Numerous agencies provide both short-term and long-term programs to protect shoreline habitat. Locally, information on DNR shoreline protection program options within the Leech Lake Watershed is available by contacting the DNR Ecological and Water Resources Shoreline Habitat Specialist in Brainerd at (218) 203-4300. Information on shoreline protection programs within the Leech Lake Watershed are also available by contacting the Leech Lake.

LEECH LAKE 2015 WATERCRAFT INSPECTION RESULTS



The Leech Lake Association received an AIS prevention grant in May 2015 for up to 404 hours of watercraft inspection time on Leech Lake during the 2015 boating season. The contract dates were May 22 through September 15 of 2015. Three DNR watercraft inspectors were hired in Cass County and were assigned to work at Leech Lake as part of their duties. Inspectors were scheduled during peak times as much as possible. The data in this report will be based on all hours and inspections done at Leech Lake in the 2015 season. In instances where two inspectors were working together, only one set of hours was used to analyze the data to prevent generating artificially high or low results. The result of these inspections are described below.

In addition to the Leech Lake Association inspection hours, the MN DNR in total spent 707 hours at various accesses on Leech Lake, completing 2693 watercraft inspections (see table below). This yielded an average of 3.80 inspections per hour throughout the season. The month of May had the highest rate of inspections/hour (4.19) while the month of August had the lowest (1.70). Inspectors inspected 1272 watercraft entering Leech Lake and 1421 watercraft exiting the lake. Of the entering watercraft inspected, 29 (2%) arrived at the access with a drain plug installed. A total of 120 watercraft inspected had last used a waterbody that is designated as infested with zebra mussels. Of those, 26 (22%) were from Lake Winnebigoishish, 14 (12%) were from Lake Mille Lacs, and 10 (8%) were from Lake Minnetonka. Also, 361 boats came from out of state with 80 (22%) coming from Wisconsin.

During the inspection process inspectors look for plants, water, mud, zebra mussels, and any other items that could pose a threat to the waters of Minnesota. Of the 1272 entering boats inspected, only 8 (0.6%) were found to have a threat in, or on, their watercraft. Three of these items were plants, which can pose a significant risk as invasive plants can be spread by fragments, but also because zebra mussels can be attached to plants. Zebra mussels were also found on two entering watercraft. Both watercraft were denied launch until they had been properly decontaminated. It isn't uncommon for exiting boats to have plants attached to the boat or trailer. Often time winds can blow weeds that are no longer attached to the substrate into the access areas. These boats are cleaned off prior to leaving the access.

Summary of Inspection Results at 7 Leech Lake Accesses

Access	Number Inspection Hours	Boats Entering	Boats Leaving
Shingobee	16	16	23
Federal Dam	175.5	309	391
Walker	249.5	417	557
Stony Point	30.25	29	23
Ericksons Landing	212.75	495	420
Sugar Point	7	3	3
Sucker Bay	16	3	5
Totals:	707	1272	1421

Data taken from "2015 Summary Report of Watercraft Inspection Results at Leech Lake," by Mike Bolinski, Regional Watercraft Inspection Supervisor, MN DNR Region 1, Ecological and Water Resources, January 16, 2015.

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Leech Lake Association

Leech Lake Association
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Walker, MN 56484

Check Us Out At: <http://www.leechlakeassociation.com/>

<http://www.leechlakeassociation.com/>

We are so pleased to offer you this enhanced website where we are able to share our mission, committee reports, area calendar of events, current news, membership information, our history, photo's, area maps, links, meeting minutes, feedback and contact information. In the future we will be adding fishing reports and other valuable area information.

As part of the Association's efforts to communicate to our members we have also created a Facebook site. For those of you using Facebook you can go to <https://www.facebook.com/groups/LeechLakeAssociation/> and request to join. As soon as you are approved you will have full access to the site. We look forward to seeing you there!

Leech Lake Association

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Leech Lake

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members, and
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the years as the
walleye fishery
has recovered.



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