

ANOTHER SUCCESSFUL YEAR FOR WALLEYE REARING POND

The Association's walleye rearing and stocking program has had another encouraging season -- the third in a row. Some 13,800 walleye fingerlings were taken from Jake's Pond in late September and transferred to Ten Mile Lake.

The actual number harvested was only about half of last year's take, but the fish were almost twice as big as those trapped from the pond a year ago, and that's important. The bigger the walleyes are when they are stocked, the better their chances for survival.

The small lake where our walleye fingerlings are reared was furnished through the courtesy of the U.S. Forest Service. We call it Jake's Pond in honor of one of our eminent past presidents, Jake Fleisher. John Kollar and his crew, consisting of Howard Centerwall and Chuck Yliniemi from the Department of Natural Resources, conduct a year-around program for us. During the winter they measure the oxygen content of the water in the pond to make sure there is a complete kill of the stragglers from the previous summer. Shortly after the lakes are free of ice in the spring they install a system of nets and pens in the Boy River near Woman Lake to collect spawning walleyes. Eggs are stripped (by gentle squeezing) from the females and spawn from the males. The eggs are fertilized and taken immediately to the DNR hatchery at Bemidji for incubation.

As soon as the eggs hatch, the fry are brought to our rearing pond, and of course to other rearing ponds in the area, where through the summer months they grow into fingerlings in relative security. If instead the fry should be introduced directly into Ten Mile Lake, they would not survive. For maximum percentage survival when the fingerlings are transferred into the lake, it is desirable that they be as large as possible, the bigger, the better.

To a considerable extent, the size of the fingerlings harvested from the pond in late September depends on how many fry were introduced into the pond in May, there being more food per fish if there are fewer fry. The DNR has experimented by reducing the number of fry each year. Our results over the past three years:

Year	No. of Fry Stocked	Lb. of Fingerlings	No. Fingerlings Harvested
1972	180,000	143 @ 130 per lb.	18,600
1973	160,000	196 @ 135 per lb.	26,500
1974	80,000	184 @ 75 per lb.	13,800

A preliminary test netting in the pond during July last year yielded an additional 2 1/4 pounds of fingerlings @ 150 per pound (333 fingerlings). The number of pounds of fingerlings per crop doesn't seem to vary tremendously. We appear to be going in the right direction by obtaining fingerlings last year that are nearly twice as large as in previous years. Next year the DNR plans to reduce the number of fry to be stocked considerably further.

Test netting conducted by the DNR in Ten Mile Lake during the summer yielded quite a few walleyes in the size range of one to two pounds, a real scarce item in recent years. It appears that at last we are getting some survival of stocked walleyes. This is a promising step in the long effort to rebuild the population of walleyes in Ten Mile Lake.

HELP WANTED

Two years ago this past summer an article on Ten Mile Lake in the Minneapolis Tribune began this way:

Hackensack, Minn. -- Talk to most anyone here about Ten Mile Lake and quicker than you can say "shoreland management" he will tell you about a long-ago article in the National Geographic.

It called the Cass County lake one of the world's purest . . . or bluest . . . or according to some, most beautiful.

The feature story, which went on to describe the impact of new and stricter zoning regulations on residents of Ten Mile Lake, appeared in the July 2, 1972, Tribune.

Our question is this: Where is this "long-ago article in the National Geographic"? Many of our members say they saw it and remember vividly what it said. Some even remember the month and year. After two years of looking, however, including searches by at least two professional librarians, we conclude reluctantly that no such article was published in the National Geographic. Did it appear in some other magazine -- or has our leg been pulled?

If you have any clues to help us solve this mystery, please drop a line to President Warren Goss, Ten Mile Lake, Hackensack, Mn. 56452. We have a nice prize for the first person who sends the correct reference or, alternatively, furnishes the best account of how this hoax -- if that's what it was -- originated.

NOW WE KNOW! THEY ARE DWARF TULLIBEES

Ten Mile Lake is unique in many respects, including a fall herring run that has been observed (and netted but not widely discussed) by the year-around residents for as long as anybody can remember. The Ten Mile Lake herring are different from those in other lakes. Their exact identity and how they got here have been a mystery. Only in late October and November are they seen, swarming by millions along the shore to spawn.

Over the years a number of apparently incorrect identifications have been offered by experts, but now we have what appears to be the true identity furnished by an authority, Dr. James C. Underhill of the Zoology Department, University of Minnesota. They are dwarf tullibeas that presumably evolved in Ten Mile Lake. Dr. Underhill says that dwarf tullibeas exist in various sizes and forms in other lakes, but he has never seen any exactly like these, the closest resemblance being those in Burntside Lake.

In 1973 and again in 1974 John Kollar and his crew from the DNR studied the fall spawning run of these fish and the role they play in the overall ecology of the lake. In 1974 they transplanted several thousand to some other lakes to observe whether they would thrive there and provide a forage for trout. What we know about these particular dwarf tullibeas is still relatively scant. Dr. Underhill hopes he can conduct some research on them. We hope so too.

If you like smelt, you would love these. They are small, about 5 inches long and 27 per pound (40 to 45 per pound after cleaning). Any cooking method used for smelt works well with these, e.g. roll in flour and fry for a few minutes in butter, or deep fry. Connoisseurs rate them many times more delicious than smelt.

FAULTY SEPTIC SYSTEMS
BIGGEST LAKE POLLUTER

"One inadequate septic system may not be too important to the man who owns it or to his neighbor, but a hundred of them around a lake can turn an attractive, highly desirable permanent or second homesite of high value into a smelling, weed-choked nightmare of no value."

Those were the words of Commissioner Robert Herbst, Department of Natural Resources, as he spoke to an August workshop at Breezy Point Resort, Pelican Lake, on upgrading lakeshore septic systems. He and other speakers identified faulty septic systems as the number one lake pollution culprit.

The Breezy Point workshop, which was attended by Ten Mile Lake Association President Warren Goss and Past President John Veller, was organized as a training seminar in the proper design, operation and maintenance of septic systems. Approximately 100 county, state and private officials and individuals attended.

Conference participants were told that, in all likelihood, most septic disposal systems installed before 1970 do not conform to the requirements of new state legislation or to provisions such as those contained in the Cass County Zoning Ordinance. That ordinance, of course, applies to all properties on Ten Mile Lake.

With the new, more stringent regulations, both the design and installation of septic systems are becoming increasingly complex and should be undertaken only by experts. There isn't space to report all the details that were covered at the workshop, but it may be of interest to Ten Mile Lake residents to relate what one experienced installer of septic systems said a new installation would cost at that time:

"A concrete septic tank, delivered in the Nisswa area is \$291; a fiberglass tank is \$365. The drain field, including the tile and distribution box will cost \$3.50 per lineal foot. This includes 18 inches of rock, not 12 inches as some shown here today. If you have 180 lineal feet, you will spend about \$635. A cement septic tank is \$100 for installation. The (entire) installation, not including the price from the house to the septic tank, will cost about \$1,056.00"

The Ordinance for the Management of Shoreland Areas of Cass County, Minnesota, was adopted in September, 1972 and provides in part that:

--All sanitary facilities (not meeting specifications prescribed by the Minnesota Pollution Control Agency and the Minnesota Department of Health or located closer than 10 feet from any building intended for human occupancy, 10 feet from a lot line, or 50 feet from a well or other water supply source) shall be brought into conformity or discontinued within five (5) years from the date of enactment of this ordinance.

--However, the system must be changed within five (5) years from the date of enactment of this ordinance, if the system is functioning in an unsanitary manner or may be required to be changed sooner if requested in writing by the Cass County Zoning Administrator. The time limit specified by this and other pertinent sections of this ordinance shall not be deemed to apply to those systems which are functioning in a sanitary manner and which are

not substantially modified, replaced, altered or changed.

--Sewage systems in existence prior to the adoption of this ordinance shall be considered as conforming to this ordinance, provided, however, that if a complaint is received and validated by the Cass County Board of Commissioners showing that such system is polluting the lake or is otherwise causing a public nuisance such system shall be considered non-conforming and shall be corrected within the time limit established by the Cass County Board of Commissioners. Provided, further that no existing system shall be modified or expanded unless the entire system conforms to the requirements of this ordinance.

As was indicated earlier, most systems installed before 1970 do not conform and will have to be replaced or modified to conform if they malfunction.

FIRST CLARITY TEST SERIES SHOWS
DEPTHS RANGE FROM 9 TO 21 FEET

Association officers have completed their first series of water clarity tests on Ten Mile Lake and found that, over the period studied, it was possible to see to depths ranging from 9 to 21 feet.

Testing began in mid-August and continued regularly thereafter until late November, just prior to the annual freeze-up. The testing project is part of a statewide program being carried out by state and university officials to monitor water clarity and alga levels in Minnesota lakes.

Clarity is determined by lowering a white plate, called a Secchi disc, into the water by means of an attached cord. When the disc disappears from view, the operator records the depth by reading markings that have been spaced every six inches on the control cord.

Purpose of the program is to provide information on how clear the water is in individual lakes and, over several seasons, what the trends seem to be. This information, in turn, will suggest relative levels of pollution and indicate whether conditions are getting better or worse.

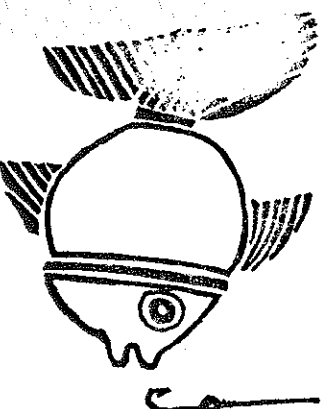
Here are last season's findings for Ten Mile Lake:

<u>Test Date</u>	<u>Open Lake</u> (Depth in Feet at which Disc Disappeared)	<u>Long Bay</u>	<u>Kenfield Bay</u>
August 11-17	13		
August 18-24	9		
August 25-31	10		
Sept. 1-7	12		
Sept. 8-14	13		
Sept. 15-21	14.5		
Sept. 22-28	16		
Sept. 29-Oct. 5	15		
Oct. 9	17.5	16.5	
Oct. 12	20	18	
Oct. 18	21	19	
Oct. 22	20	16.5	
Nov. 7	21		
Nov. 9	21		
Nov. 16	19.5		15
Nov. 17	19.5		
Nov. 24	19		

Although it is much too early to draw conclusions, you will note that, as the weather cooled, the water became progressively clearer until mid-November, when there was a slight reversal of the trend. You also will see from the data that Long Bay was consistently less clear than the open lake and that Kenfield Bay, on the one reading taken, was similarly less clear than the open lake.

Next season, Association officers plan to take weekly readings throughout the spring, summer and fall. Test locations will be in the open lake, Kenfield Bay, Lundstrom's Bay, Flowerpot Bay, and Long Bay.

Ten Mile Lake Association
Wackensack, Min. 56452



THE BRAINERD DAILY DISPATCH

"CENTRAL MINNESOTA'S DAILY NEWSPAPER"

In the Heart of the Lake Region

Dial
829-4705

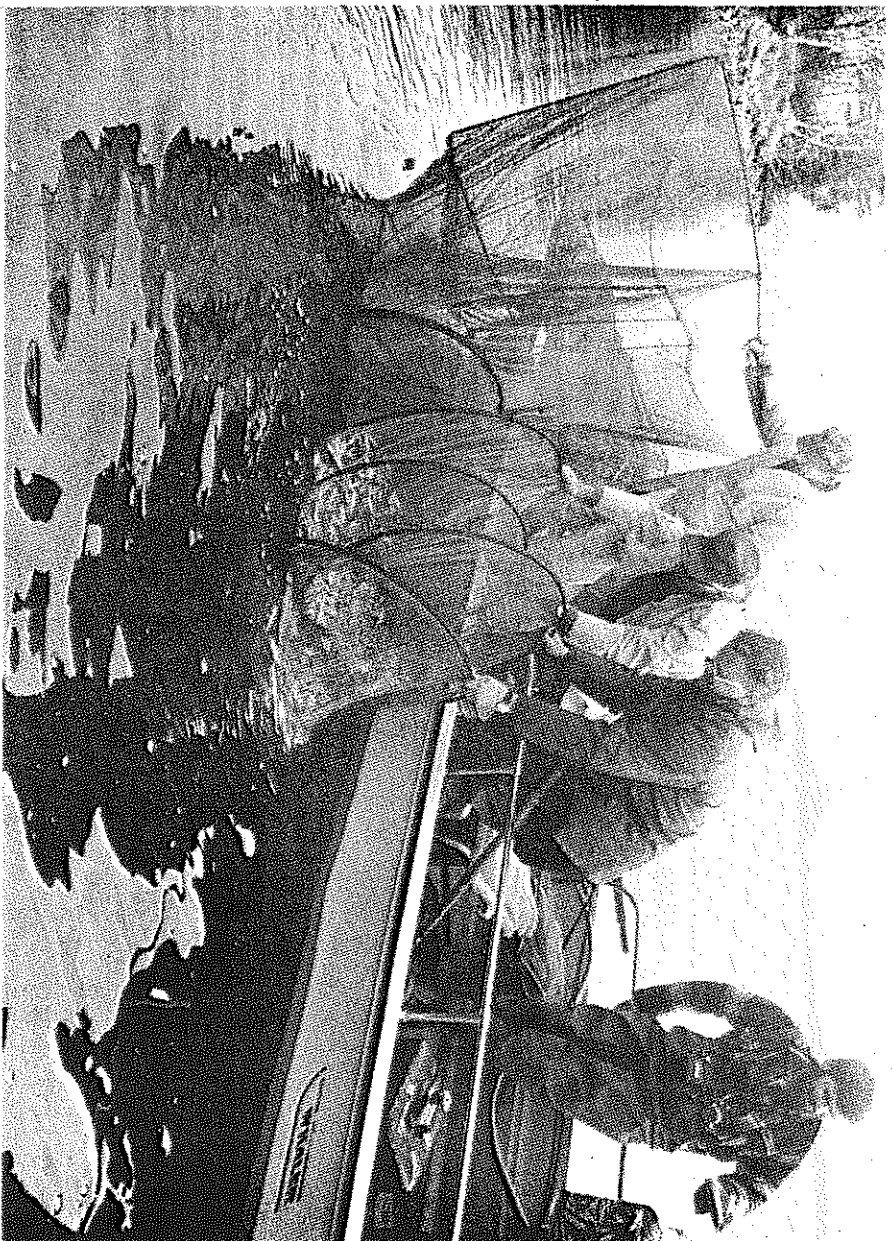
Member of The
Associated Press

United Press-International
Telephone Service

BRAINERD, MINNESOTA, 56401, TUESDAY, NOVEMBER 11, 1975

SINGLE
COPY 15 CENTS

VOL. 99C—NO. 84



NETS FILLED — The tiny fishes shown being brought aboard a boat in Ten Mile Lake in the above photo are dwarf tullibees. The tiny fish are being studied to learn how they happen to be in Ten Mile and just what their ecological impact might be.

Shimmering Dwarfs Of Ten Mile Lake

By CAROL BUCKMANN

A three-foot wave smashed over the bow of the Boston whaler, its great liquid force driving hard against the five already-drenched occupants of the boat.

Another wave from a 40-mile-an-hour gust of wind sent Jim Erickson, a PhD candidate, University of Minnesota, off his seat and landing amongst tubs filled with hundreds of tiny fishes — dwarf tullibees, a variety that may be unique to Ten Mile Lake, Hackensack.

These little four to five-inch long tullibees are different from those in other lakes and their exact identity and how they got into Ten Mile Lake have been a mystery. Only in late October and early November do they leave the depths of Ten Mile to be seen swarming by the millions along the shore to spawn.

Erickson had accompanied Professor James C. Underhill, noted fisheries expert, University of Minnesota, to the

home of Warren Goss, president of the Ten Mile Lake Association, to net the tullibees during the spawning run. Professor Underhill wants to learn more about the tiny fish and the role they play in lake ecology.

Professor Underhill and a drenched, but smiling Merle Johnson, cold water fisheries biologist, Minnesota Department of Natural Resources (DNR), hung onto the boat's gunwales as mighty waves splashed faces and rain gear.

Even under the expert navigation of John Kollar, area fisheries manager, DNR, and crewman Howard Centerwall, keeping the boat upright and on course was a difficult chore as the men pulled trap nets bulging with little shimmering, silvery tullibees.

Six nets had been set by Kollar and his crew. Professor Underhill was notified by Goss when the run began and he and Erickson drove to Ten Mile Lake from the Twin Cities.

However, after rocking and rolling in the wind, it was decided by unanimous proclamation to return to Goss' home and pull the other four nets when the wind subsided.

"We can't predict for sure just when these dwarf tullibees appear in shallow water — usually it's during the last 10 days of October or early November," said Goss.

"Some of us here on the lake watch for the first appearance of the run and then notify John Kollar," added Goss. Kollar then promptly brings the DNR equipment (work boat, nets, traps, etc.) to Goss' dock and proceeds with his crew to place nets for the dwarf tullibees, whitefish and game fish on a daily or nearly daily basis for several weeks.

The run of the tiny fish has been observed by the year-around residents of Ten Mile for as long as anyone can remember, but not widely discussed. According to Goss the locals have known about them for many years, probably for generations.

"They had been telling about the 'herrings' and how good they were to eat, but would never say which lake they were in. It's like an old recipe that's been in the family for years, but nobody gives it out to anyone outside the family," related Goss.

Over the years, a number of apparently incorrect identifications have been offered by experts, but now there is what appears to be the true identity furnished by Professor Underhill.

These dwarf tullibees have presumably evolved in Ten Mile Lake. Underhill wants to find out if this is a single variety of tullibee or if they represent a specific genetic population of small fish that were left behind when the glaciers retreated.

After the strong winds of the day before, the following morning broke in windless

relief. The morning sun set the shallows alive with waves of tightly-packed schools of tiny tullibees.

"It looked like the entire lake was a sea of fish. It was a continuous parade of fish, swimming leisurely in a westerly (counter-clock) fashion. When we saw the swarms out there, we were tremendously impressed by the dense populations," recalled Goss.

Because Ten Mile is extremely clear, it was easy to see the actions of the little fish. The water was smooth and it gave the opportunity to see them easily.

"It was an endless river of these little fish. They did not come into water less than knee-deep. They spooked easily, but when we stood real still (with waders on), they swam around our legs. I got the impression there were millions of fish out there," stated Goss.

That evening under the lights on Goss' dock, a school of about 100 stayed and swam back and forth in the lights.

According to Professor Underhill, small tullibees exist in various forms in other lakes, but, "I've never seen any exactly like these. The Ten Mile dwarf tullibees are the smallest I'm aware of," said the professor.

The opposite extreme exists at Lake Krasa where tullibees grow to 20 inches and more and weigh over five pounds.

The closest resemblance to Ten Mile's dwarf tullibees are those in Burnside Lake in northeastern Minnesota, a lake similar to Ten Mile in depth, size and temperature.

In 1973 and again in 1974, Kollar and his crew from the DNR studied the fall spawning run of these fish and the role they play in the overall ecology of the lake.

In 1974, they transplanted



TINY FISHES — Shown here are the dwarf tullibees that inhabit Ten Mile Lake.

LAKE

Continued from Page 1

several thousand to Hazel Lake, an 11-acre reclaimed trout lake eight miles east of Ten Mile; and also to Deep Lake, a northern pike lake near Bemidji to observe whether they would thrive there and provide forage food for trout and northern pike.

The simplest way to study the inherent growth traits, according to Underhill, is to transfer them into different lakes and observe the consequences.

Kollar's experiment produced astonishing results. His test netting in Hazel last week proved the little fish do grow. Those taken in the test nets, the same as those transferred from Ten Mile, had more than doubled in size. A few were also found in Deep Lake during Kollar's netting and they, also, had more than doubled in size.

Obviously the environment in these lakes produces changes in the small fishes. Whatever it is that causes these fish to mature at a small size in Ten Mile is obviously different in Hazel Lake.

Food habits, distribution and competition with whitefish may be part of the overall difference, according to Professor Underhill.

Tullibeas are found throughout North America, Europe and Siberia and almost all species show tremendous variability. "I'm inclined to think that this variability is related to the food types, but I can't be sure. If the dwarf tullibeas in Ten Mile are a specific species, it is a very versatile one," said Professor Underhill.

It could also be that whitefish are occupying the same position in Ten Mile as the larger tullibeas would normally occupy.

Merle Johnson said he is interested in the dwarf tullibeas

at Ten Mile because similar but not identical varieties have been found in lake trout lakes; this species has potential for being a good forage food for trout.

"We want to find out if immature trout will feed on these fish. If so, there is the possibility of transplanting them into some of our trout lakes for experimental feeding," said Johnson.

He added that they might also alleviate depletions of immature trout by predatory birds such as loons and mergansers.

"These little tullibeas might be more attractive to predators than the trout," said Johnson. Kollar and Johnson agreed that it's a little premature to know how valuable they are for trout forage. But if they reproduce in Hazel and Deep lakes, they could be a real advantage to trout.

The most important reason for the increased growth of the tullibeas planted in Hazel and Deep Lakes is believed to be related to water temperature and food.

Hazel Lake is shallow compared to Ten Mile, about 30 feet with Ten Mile running well over 100 feet deep. The deepest known spot is 208 feet.

Contrary to what happens in Ten Mile in the summer growing season, the little fishes cannot retreat to deep water in Hazel and are forced to stay in shallower water where it is warmer and there is more food.

Professor Underhill says he's especially interested in the inherited characteristics of the fish and the environmental factors that determine the various characteristics.

Tullibeas are among the only cold water fish found in typical northern pike, walleye, bass-panfish lakes.

"What enables them to survive in warm water lakes and what causes big tullibeas not to survive in Ten Mile are important, unanswered

questions," said Professor Underhill.

Almost every lake is unique and these little tullibeas are a reflection of the uniqueness of Ten Mile Lake. The tiny, silvery fishes are part of the population complex in this particular lake.

Professor Underhill said there is little research on non-game fish such as tullibeas; there are no regulations on the number that can be taken.

It would be a real tragedy if this unique population of fishes were damaged because of lake regulations, the fisheries experts say.

"We're a long way from knowing the role of these fishes in the ecology of our lakes. We know a lot about the walleye, northern pike, some about bass in Minnesota and a little about sunfish. Then when we get to species like these dwarf tullibeas and other non-game fish, we're at rock bottom," said Professor Underhill.

One thing for sure, many big game fish are down deep in Ten Mile and it is thought to be because they feed extensively on the dwarf tullibee. (Northernns have been netted at 90-foot depths.)

The tullibeas have the potential for feeding on anything available. Other fish follow them to greater depths than in many lakes.

Ten Mile is the source of the Boy River and accordingly is one of the sources of the Mississippi River. It has an area of about 5,000 acres and a shoreline of 25 miles.

Because it is much deeper than the downstream lakes, the chemistry and biology are unique in this area. In its depths, the temperature and the adequate content of oxygen clear to the bottom provide an unusual environment and undoubtedly contribute to the reasons why these unique little fish have evolved in Ten Mile Lake.

x