JESSIE LAKE WATERSHED ASSOCIATION

JESSIE JABBER

VOL. 2; NO. 1 Spring 1999

GREETINGS FROM PRESIDENT HAROLD GOETZMAN:

I hope you all have had a healthy and prosperous winter. As we embark upon a new summer season at the lake, I am reminded how fortunate we are to be associated with these natural resources. The eagles have returned, deer are moving about, and the creeks are opening up during the early spring period. We have just completed our first year as the Jessie Lake Watershed Association (JLWA), which I believe was a successful year. As you know, this was also a year for record low water in Jessie and Little Spring lakes with probably the greenest water from algae in history. On the other hand Spring and Peterson lakes appeared very normal and exhibited good water quality. Thus, we have decided to apply for a continuation grant to do more water sampling and start some demonstration projects for shoreline improvement. We also managed to get 25 wood duck houses from Ducks Unlimited and will be looking for help in putting them up. This is a head start on a project that we had planned for the coming year. The walleye-spawning habitat will be monitored this spring so let us hope for some success with that project. Plans are in progress for creating another walleye spawning bed in Spring Creek by additional rock placement this June. One of my major concerns for this year, however, is that we continue to grow as an association. Last year we had about 50% of the property owners as members so we have a way to go. Remember, we do not need the dues, but the support and opinions of all property owners. I know you all have ideas, interests and talents that can be used to make this watershed a better place to live or spend time. If you don't have the time to volunteer now, join anyway. On this note, I want to thank all who have come to the meetings and those who have contributed some extra time. We are blessed with a terrific group of officers and directors. Their talents and enthusiasm have been a major reason things have progressed so well this first year.

A final note relates to operation of the Association. As mentioned earlier we are partners in the maintenance of the watershed with the U. S. Forest Service (FS), Department of Natural Resources (DNR), Itasca County Soil and Water Conservation District (SWCD), and the Minnesota Pollution Control Agency (MPCA). An advisory board with these organizations has been meeting to keep our projects moving and setting goals for the future. During the past several months we have discussed the activities for 1999 and new things are in progress. Continued support from all these organizations is important, as they are public resources we can rely on for technical information, professional advice, and financial help. If you have any questions or need some information from any of them let me know.

Remember, "If we fail to make the necessary decisions, nature will make them for us." (Gaylord Nelson, former Governor of Wisconsin). Let's all work together to conserve our resources.

MEET YOUR DIRECTORS

Ken Albin

My wife Ardis and I live on Jessie Lake at 48398 Nest Rd. We previously resided in Austin, MN before moving here in 1990. I worked for Hormel and Co. meat processors for 35 years, retiring in 1987. At the time of my retirement I was in charge of sausage processing at the Austin plant.

While living in Austin I was involved in environmental and soil and water conservation projects as a member of the Izaak Walton League of America. Among other hobbies, I enjoy woodworking and am in the final stages of restoring an old wooden boat, which I plan on launching this summer to cruise the lake.

Anthony(Ed) Bick

I was born in St. Louis and grew up in Marion, Indiana before enlisting in the Air Force. I obtained a degree in Electrical Engineering at Indiana Tech and then did graduate work at the University of Florida. After working in the avionics and aerospace industry with Martin Marietta for 30 years, I retired in 1993 and bought a cabin on Jessie Lake in 1995. Divorced with no children I keep busy with garden, house and grounds maintenance, fishing, and beginning clarinet. Living here I enjoy the climate and lakes of the area, and the relaxed attitudes and pleasantness of the residents.

John Lichtscheidl

My wife Virgie and I moved into our retirement home on Jessie Lake in 1991. We came from the Taylors Falls area where we owned and operated a dairy farm and I later supervised the Sentence and Serve program for the Chisago County Sheriffs Department. We have five children and 11 grandchildren that keep us busy off and on during the year. I also like to work on small engines and lawnmowers, which has provided me the opportunity to meet so many nice neighbors in the community. We like to fish the year around, snowmobile in the winter, and go on short trips. I am very interested in keeping a healthy lake environment.

Lance Stradtmann

My wife Sue, our five-year-old son, and I live near Glencoe, which is about 50 miles west of Minneapolis. We live on a farm south of town and, along with my brother, own and operate a cabinet shop. I have hunted and fished in the Talmoon area for 18 years and we purchased our cabin on Peterson Lake in the summer of 1996. We really enjoy our lake place and the North Country but between the farm and our business find it difficult to get away as much as we would like.

PROJECT STATUS

Beaver Control

Efforts to control the beaver population continue for the purpose of ensuring spawning migrations of fish in the creeks are not blocked by dams. A trapper was engaged to trap beaver on Spring Creek from Spring to Jessie Lakes and on also on Jessie Lake. Through his effort, and that of local trappers, the beaver population has been reduced significantly. In addition, Itasca County removed a beaver dam from Spring Creek downstream of Spring Lake and a second dam was removed by the DNR from Spring Creek downstream from Little Spring Lake. To the best of our knowledge no beaver dams have been removed below Jessie Lake. Therefore, the low water level on

Jessie Lake last summer was not caused by removal of any beaver dams, but was the result of below average precipitation. Trapping will continue this fall to maintain the flow in the creeks.

Watch for the Orange Buoys

By Karl Koller, Fisheries Specialist

As many of you may have heard, the DNR Grand Rapids Area Fisheries Office will be assessing fish populations on Jessie, Spring, and Little Spring lakes this summer. (Peterson Lake had a recent winterkill and was restocked in 1997 with largemouth bass, black crappie and bluegill. Populations have probably not sufficiently recovered at this time to make an assessment worthwhile.) Many questions arise when the orange buoys, which mark the ends of our nets, are seen on a lake. Some people come and ask questions when they see our crews out, but I am sure many questions are left unanswered. In this brief article I hope to answer many of these questions by explaining how our survey program works, what exactly we are looking for, and how we use the information gathered.

Lake surveys are the backbone of our fisheries management. The data we gather from our surveys are used to establish management strategies (e.g., stocking or habitat improvement) and evaluate their effectiveness. Our office surveys about 25 lakes a summer; out of about 1,100 in our management area. The lakes we focus on are those that are stocked with walleye.

When we do a population assessment on a lake, we set gill and trap nets. Gill nets are set in depths ranging from 8 to 30 feet to capture the fish that inhabit deeper waters, such as walleye, perch, northern pike, and tullibee. They are 250 feet long, 6 feet deep and are made up of five, 50 foot panels of mesh that ranges from 3/4 inches to 2 inches wide. Fish are captured when they get stuck trying to swim through the mesh; the mesh catches around their gills and prevents them from backing out. Occasionally, larger fish get caught by their lips and teeth. The assorted sizes of mesh allow a range of fish sizes to be captured. To sample fish that inhabit shallower water, especially panfish, we use trap nets which are similar to a giant minnow trap. A trap net has a lead made of smaller mesh that runs to shore. Fish that are swimming along the shore will often follow the lead out in an attempt to swim around it. At the end of the lead the fish encounter a rectangular (6-feet X 2 1/2-feet) metal frame that has a narrow, funnel-like opening which allows the fish to enter. Once they swim through the funnels they are unlikely to swim back through, and are trapped.

On a lake the size of Jessie we will set three or four nets of each type each day, for a total of 15 each. On the smaller Spring and Little Spring lakes a total of up to nine trap nets and six gill nets will be set. The nets are left in place overnight and are lifted the following day and the fish removed. Typically we will measure and weigh all the fish we capture in the nets. Length and weight data gives us an idea of the size structure of the various fish populations in the lake. We also remove some scales from species of special concern. Scales form annual rings on them much like the growth rings on a tree so we can tell the age of the fish. Once we know the fish's age, we can determine how well the fish are growing. Also, aging fish gives us a clue as to the effectiveness of our stocking programs since from their age we can tell in what year they hatched. Generally, lakes are not stocked every year. If all the fish sampled turn out to be from years in which we stocked, then it is likely that stocking is maintaining the population and we will continue to stock. On the other hand, if we see as many fish in a lake from non stocked years as those from stocked years, then our stocking in that lake is probably not effective since natural reproduction is occurring and capable of supporting the population so stocking maybe discontinued. Unfortunately, things are rarely as clear as this sounds and more than one assessment is often needed before we can determine the best level and frequency of stocking for a given lake.

Probably the most important information we gather is the net "catch rate," or the average number of a given species caught per net. These data are compared to past assessments to see if the abundance of a given species is declining or increasing. These data often affect our management of a lake. For example, changes in relative abundance of walleye or yellow perch (the main food for walleye) may cause us to adjust walleye stocking rates or frequencies.

When winter comes and our field season has ended we begin counting the rings on the scales collected and analyzing and interpreting all of the other data collected. We then prepare a final survey report based on the results and update the lakes' management plan. A management plan is our document that spells out all the past management on the lake, sets goals for the lake, and establishes a plan for achieving these goals. Given the number of surveys and time it takes to complete the analysis, we often don't get the management plans completed until the winter after the survey was conducted. This means I will be writing the management plan for Jessie, Spring, and Little Spring lakes during the winter of 2000-2001. We welcome public input in the procedure and if you wish to read the latest management plan or survey on a lake stop in our Grand Rapids office.

When you see us out lifting our nets next August, please feel free to pull along side our boats, observe our operation, and ask us any other questions you might have.

Water Quality Studies

By Justin Watkins, Itasca County Soil and Water Conservation District.

With the aid of local volunteers the Itasca County SWCD conducted a water quality study of the lakes in the watershed. Jessie Lake was sampled from April to October, Spring and Peterson lakes from June through October, and Little Spring Lake from June to August. Water transparency, nutrients, and algal growth were monitored since they are associated with a lake's productivity.

Phosphorus, a vital nutrient for plants and animals, exists naturally in soils, igneous rocks and the atmosphere and is transported to lakes by rainfall and land surface runoff. Phosphorus is relatively insoluble and readily attaches to soil particles. Therefore, it will typically stay in the soil unless erosion carries soil into lakes and streams. Concentrations of phosphorus on land typically range from 10,000 - 100,000 parts per billion (ppb) but for lakes in this region concentrations typically range from 14.0 - 27.0 ppb. Jessie Lake's average phosphorus concentration in 1998 of 57.3 ppb greatly exceeds this range and more than doubled the level of 24.4 ppb obtained in previous studies conducted by the SWCD on the lake in 1992 and by Jeffrey Goetzman in 1987, Table 1. Phosphorus concentrations measured in the other three lakes were more typical of levels usually measured in area lakes.

Chlorophyll-a is a measurement of the amount of algae in a lake. Typically, algae exist only in the epilimnion (the water above the thermocline) of a lake. However, when algae dies, it settles into the hypolimnion (water below the thermocline) where it decays. This process consumes the oxygen in the hypolimnion, causing anaerobic conditions, leading to additional internal loading of phosphorus, which promotes more algal growth. Mean chlorophyll-a concentration in Jessie Lake was 18.7 ppb, which is well above that measured in the other three lakes and the normal range of <10 ppb for lakes in this region. Similar to phosphorus, the chlorophyll-a concentration in Jessie Lake has increased considerably from the levels measured in the 1992 and 1987 studies, Table 1.

Table 1. Mean concentrations (ppb) of phosphorus and chlorophyll-a, secchi disk measurements (ft), and Trophic Suitability Indices (TSI) based on phosphorus (TSIP), chlorophyll-a (TSIC), secchi disk (TSIS) for Jessie, Little Spring, Peterson, and Spring lakes, 1998.

Lake	Phosphorus	Chlorophyll-a	Secchi	TSIP	TSIC	TSIS	TSI
Spring	19.0	2.2	10.8	47	38	43	43
Peterson	29.0	3.8	8.5	53	44	46	48
L. Spring	35.7	3.9	6.6	56	44	50	50
Jessie-1998	57.3	18.7	6.6	63	59	50	57
Jessie-1992	24.4	4.7	13.8	49	44	41	43
Jessie-1987	26.0	7.1	7.5	51	50	48	50

Secchi disk measurements estimate water clarity; a white eight-inch disk is lowered into the water and the depth that the disk can no longer be seen is recorded. This simple measurement is relatively sensitive to changes in water quality, which is normally a direct function of algae concentration, which is dependent upon nutrient availability, specifically phosphorus. With adequate baseline information, secchi disk readings can be used to estimate chlorophyll-a and phosphorus levels without the expense of chemical tests. Jessie Lake secchi disk readings in 1998 averaged 6.6 feet, down from the 13.8 feet and 7.5 feet measured in the 1992 and 1987 studies, respectively.

One way of interpreting the relationship between phosphorus, chlorophyll, and secchi disk measurements is Carlson's Trophic Status Index (TSI), a method to evaluate the trophic status or productivity of a lake. Values for TSI range from 0 (ultra oligotrophic) to 100 (hyper eutrophic). With this index, each increase of 10 units represents a doubling of total phosphorus or a reduction in water transparency by half. Because algae grow in relation to the availability of phosphorus and directly affects water clarity, chlorophyll-a, which estimates the abundance of algae, can be related to phosphorus concentration and secchi disk measurements. In this way, the index ties the three independent measures of the trophic status of the lake into a single measure. Ideally, the indexes developed from the three parameters will be similar, indicating that the lake is responding to phosphorus loading as most other lakes. The individual trophic indexes and means in Table 1 indicate Jessie Lake would be classified as eutrophic, while Spring, Little Spring and Peterson lakes fall in the mesotrophic range. Compared with about 60 other lakes studied in Itasca County from 1991 to 1996 Jessie Lake ranked 59th, Little Spring 47th, Peterson 44th and Spring 28th. Trophic status indexes for the lake's increase as you move "down" the watershed when considering each lake's geographic position and their positions in the flow path. This is typical of many watersheds as water moves "down" the watershed it acquires nutrients and carries them to the next lake or basin in the flowage. Causes for the decline in water quality from previous studies cannot be determined until additional sampling is conducted. *(The disturbing results from this first year of study highlight the need for all property owners to maintain their septic tanks in good working condition and NOT fertilize their lawns. Bill Nelson)*

Who Are Our Neighbors?

By Chantel Cook, Forest Fisheries Biologist, U.S. Forest Service

With all the discussion about managing the Jessie Lake Watershed to maintain water quality and healthy fish communities, have you ever wondered just who the major landowners in the watershed are? Or what the major land uses are? Do you know what portion of the watershed is wet

(wetlands, lakes, streams)? These are questions that the Chippewa National Forest is working to answer. Through the use of Geographic Information System (GIS) computer analyses, we have been able to calculate acreage for wetlands, lakes, and streams, ownership, and forest composition and age across all ownerships. Our goal is to be able to describe: current and historical land uses and past, present, and potential forest vegetation across all ownerships; point and non-point sources of erosion; soil erosion potential; condition of stream crossings, and fish habitat. With help from the JLWA Technical Committee, we will assemble this information by the end of the summer into a report that describes the watershed condition. Here are a few of the facts we have gathered thus far:

Who are the major landowners in the Jessie Lake Watershed?

Land Owner	Acres	Percent
U. S. Forest Service	8,451	47
Private	7,132	40
State of Minnesota	1,800	10
Itasca County	581	3

Did you know that more than 37% of the watershed is wet?
Total Watershed Acreage: 20,467
Stream Miles: 14
Lake Acres: 2,429
Wildlife Impoundment Acres: 69
Wetland Acres: 4,997
Emergent Wetland acres: 515
Forested Wetland acres: 2,740
Scrub/Shrub Wetland acres: 1,742

WOOD DUCK BOXES

By Bill Nelson

A big bonus for attending the JLWA meeting on May 29 (10:00 A.M. at Bowstring Town Hall) is 25 wood duck boxes will be available to participants **free of charge**. In fact, Jim Anderson has even provided cedar shavings and a lag bolt for mounting the boxes. These boxes are an excellent example of the cooperative efforts by a variety of groups. The Grand Rapids Chapter of Ducks Unlimited provided the materials, school kids cut out the pieces, and a church group constructed the boxes. All that we ask from people that take the boxes is that they let us know if wood ducks or goldeneyes used their boxes. If you place a box in a location where you cannot see if the box is being used you can examine it in the fall for eggshells. Wood duck eggs are a dull to creamy white in color whereas goldeneye eggs are pale to olivaceous green.

It is necessary to properly install and maintain the boxes for them to be used by ducks. Wood duck boxes should be placed 6-10 feet high in trees or poles; for best results the boxes should not be placed within sight of each other. Boxes can be placed on trees well back from the lake or streams edge but a clear flight path through any branches is needed for the hens to fly into the boxes. Early

each spring the boxes need to be cleaned and about 6-inches of wood (preferably cedar but any wood will work) shavings placed in them. That is all that is required of you to obtain hours of enjoyment watching the birds and the satisfaction of increasing our local duck population.

SECCHI DISK VOLUNTEERS

By Bill Nelson

As a part of the water quality study we need volunteers to obtain secchi disc readings on Peterson, Spring, and Little Spring lakes. The readings are simple to obtain and entail submerging the disk in the water and recording how deep in the water you can see it. Ideally, the readings should be taken weekly, but if this is impossible less frequent readings would still be better than nothing. In addition to our use, the results will be used by the MPCA, which presently has nearly 700 volunteers monitoring lakes throughout the state, and the SWCD, which has a goal of adding 150 lakes to the 65-70 presently being monitored in Itasca County. If you are interested, contact Bill Nelson (218-832-3120) for additional information on obtaining a free secchi disk.

DID YOU KNOW?

By Harold Goetzman

The fish kills we had on Jessie Lake last summer were primarily suckers. This was due to the warm temperatures and loss of oxygen in the bottom layers of the water. Jessie Lake had a period when the cooler bottom water had low oxygen and the fish were forced into warmer water. Their metabolism speeds up leaving some of the older and weaker fish in stress and they end up dying. What seemed like a lot of fish in reality probably wasn't that bad. Still not good, but on the positive side it provided a lot of food for the bald eagles.

The pelicans that we have on Jessie Lake are relatively latecomers to this area. They are officially American White Pelicans and often referred to as the Common Pelican of the North. The ones we see are the non-breeding young as they nest in only a few places in large rookeries. My recollection of the first sighting of them on Jessie Lake was in 1990 or 1991. Not sure why they pick certain lakes other than we probably have a good supply of perch in the shallows for feeding. They are interesting to watch anyway, especially when the fish aren't biting.

The University of Minnesota has a new person aboard in our area who is a Shoreland Vegetation and Landscape Educator. Mary Blickenderfer covers the Northeast District and thus will be a busy person. We are fortunate enough to have Mary coming to our Spring JLWA meeting to give a talk on shoreland restoration. We plan to have a couple of demonstration projects starting in the watershed this year as that kind of activity will help improve and maintain water quality.

The area of Jessie Lake is 1760 acres (2.75 square miles) and has 26% of its area in the littoral zone, or area with weed growth, which general does not extend beyond 11 feet. It is 4.1 miles long and 1.2 miles wide with 9.3 miles of shoreline of which about one-third is public land. The maximum depth is 42 feet with a mean depth of 21 feet. While this is the average depth (volume/surface area), in reality about 73% of the water is contained at 21 feet or shallower.

The Itasca County (SWCD) consists of five permanent staff, including both professionals and technicians; they also normally employ a summer intern. The office is funded by Itasca County and the State and is responsible for protecting the quality of land and water by minimizing soil erosion and pollution caused by land management practices and development. The SWCD recently moved to offices in a new building on Highway 2 east of Grand Rapids.

EAGLE CATCHING

By Bill Nelson

Last July while touring around Jessie Lake to record stream flows, my wife Sarah and I had some rather unique experiences. Since we recently had some heavy rains, I decided to obtain water samples for chemical analysis as well as simply read the staff gauges. Sarah volunteered to collect the water samples. When she waded into Spring Creek, she sank up to her knees in muck, lost her balance, sat on her butt in the ooze, and began screaming for help. Naturally, being a male chauvinist idiot, I laughed my tail off and debated whether I should drive home and get a camera to record the view for posterity, or give her a hand. Sarah quickly straightened me out on which option to select and I helped her out of her predicament. However, I did insist she remove her foul smelling shorts before sitting in my nice clean pickup.

When we drove up to the next creek a bunch of crows were making a big fuss over what I initially thought was a porcupine, and Sarah thought was a bear cub, up in the top of a birch tree. However a better view quickly revealed it was a bald eagle hanging upside down. I couldn't see any sign of life so we decided to drive back to a U.S. Forest Service vehicle parked about a mile down the road and let them deal with turning the carcass into the powers that be for an autopsy, or whatever they do with dead eagles. It turned out that the forester was Garry Frits, the District Ranger, an individual we had met previously. After explaining the situation to him, while Sarah attempted to stretch her T-shirt into a miniskirt, we headed back to where the eagle hung. Upon our return we immediately realized the eagle was alive. After a brief discussion to determine our strategy, Garry began to saw the tree down and Sarah and I drove home to get some gloves, a gunnysack, and pants for Sarah. Upon our return Garry had the tree down and the eagle was perched on the culvert. The eagle appeared to favor its left wing and was unable to fly more than a couple of yards before crashing. Garry thought the best option was for us to catch the eagle and he would ship it to the Raptor Center at the University of Minnesota where the Forest Service has a contract for this type of instance. So the roundup began; two retards chasing a flapping eagle through the woods. Finally, the bird tired and Garry told me "just throw the sack over his head." Upon examining the needle-sharp talons, and huge beak, which appeared capable of removing three fingers in a single chomp, I was tempted to tell Garry where he could put that sack. Instead I tried to slip it over the eagle's head. I did manage to get it over the head, but the eagle spread his wings so the sack couldn't go down very far and the struggle continued. We finally folded up the bird's wings and get him further in the sack, but it then would sink his huge talons in the cloth so we couldn't get him more than about half way in. For a supposedly sick bird it was amazing how difficult it was to pry open those talons and slowly work him into the sack. After about a five minute battle we finally "bagged" the eagle and tied the top shut; Garry did not want that eagle escaping in his van as he drove to the Grand Rapids airport.

A week later I checked with Garry on the eagle's fate. It turned out the eagle made the trip just fine, passed his physical in flying (pun intended) colors, was returned, and released where we captured him. According to the veterinarians it was just a young bird that had not learned to fly very well and was exhausted and dehydrated from hanging upside down in the tree. I still wonder if such a poor flyer caught enough food to survive. At any rate it was quite an experience handling such a magnificent bird.

A MYSTERIOUS BIRD

By Harold Goetzman

Early last September I spotted a strange, rather large, all white bird swimming in front of our dock that did not look familiar to any I had seen on Jessie Lake. I quickly called my wife to come and identify it as she usually is quite good at birding. However, this time her reply was I am not very good at ducks. About then it dove and as it came up we noticed the long neck and hooked beak, which we both remarked, looked like our not so popular all black cormorant friends. Diane went for the bird book and as he swam off we paged through all the white waterfowl without success of a positive identification. I went to the phone and called Jeremy Cable at the FS in Marcell since he is a wildlife biologist. There are not many diving type white birds of that description around here was his reply. Was it possible there could be an albino cormorant? He agreed there could be, but it would be rare. After checking at the Fall JLWA meeting if anyone else had observed it, which they had not, we went back to the cabin hoping for another chance to get a picture of the bird. Several days later we again saw the bird and I ran for the camera, but only had the point and shoot camera along. On return he was sitting on Abe's raft for a perfect shot except for being a little far out. It is not the best but I do have a picture of that albino cormorant. Strange but true and in the words of Diane "that's what I love about being out here on Jessie Lake - you never know what you might see." Hopefully, one of you will also observe it this year and get an award-winning photo!

SPRING MEETING

The spring meeting of the Jessie Lake Watershed Association will be held at the Bowstring Town Hall on May 29. The meeting is scheduled for 10:00 A.M., a new time for us, to cause the least inconvenience to fishermen. Mary Blickenderfer, landscape architect with The North Central Experiment Station, will be our guest speaker. Mary will talk on methods to restore natural vegetation and stabilize shorelines, subjects that will be of interest to all our members. We will also have an update on all projects and distribute the wood duck boxes so please join us.

If you have not as yet paid your dues please pay at the meeting or send a check to Neil Gustafson, H.C. 1, Box 180, Talmoon, MN. 56637

Name_____

Lake Address_____Phone_____

Other Address_____Phone_____

Please indicate with an asterisk (*) which of the above addresses is your primary residence and check the address at which you prefer to receive JLWA mailings.