WHITE LAKE PRESERVATION PROJECT

NEWSLETTER

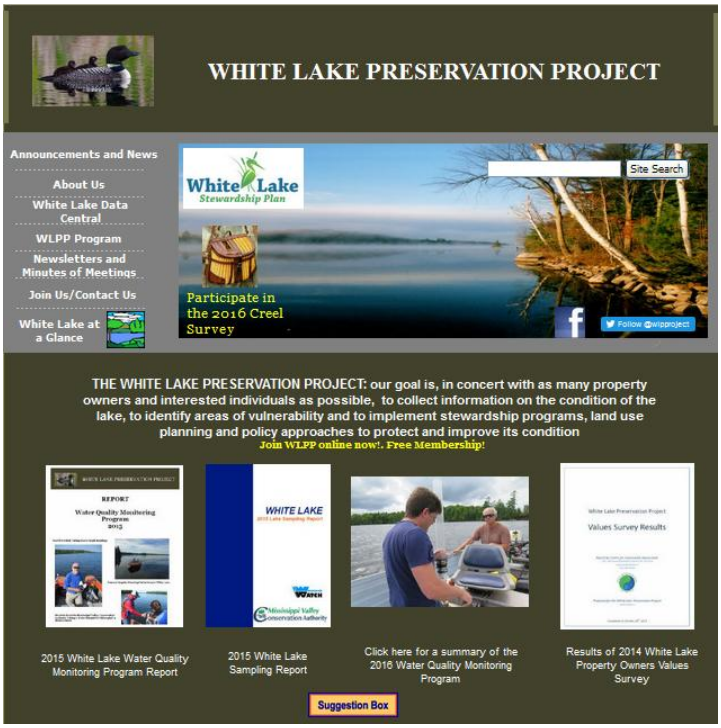
June, 2016

Since the publication of our last newsletter, WLPP executive and volunteers have been very busy with a wide range of activities. We have achieved much during this time and this newsletter summarizes progress on issues and events ranging from our recent Bioblitz to Zebra mussels!

The White Lake Preservation Project relies on volunteers to contribute their time, energy and enthusiasm in order to advance the goals of our organization. Although membership in the WLPP is currently free, we rely on donations of money and materials to carry out our work. We are especially grateful for the generous support provided by the Gottlieb Foundation, a philanthropic organization committed to supporting efforts to preserve and restore natural habitats in North America. *-Conrad Gregoire, interim Newsletter Editor*

Website – Conrad Gregoire

Data and reports continue to be added to the website which can be accessed at www.WLPP.ca Added features to the website include a *search engine*, links to our *Facebook* and *Twitter* pages and at the bottom of the home page, a *suggestion box*. The suggestion box is anonymous unless you give us your name or would like to be contacted with a response. A portal to the *White Lake Stewardship Plan* website was also added to the home page. Recent science and other reports are linked from the front page.



The website is evolving into an informal 'encyclopaedia' on White Lake containing information on all aspects of the lake. Research continues on obtaining any and all scientific papers and publications on White Lake. We welcome suggestions from you on how we can improve the website and its contents to enhance readability and impact.

Science Committee

Conrad Gregoire, David Overholt, Peter Raaphorst, Adam Pugh

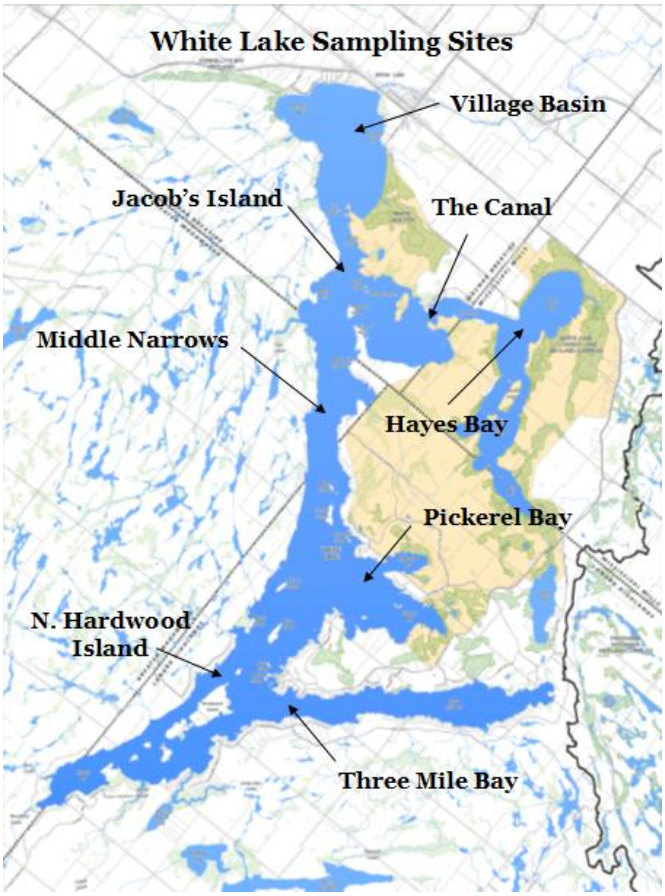
Water Quality Monitoring Report – 2015 – Conrad Gregoire

The data collected during the 2015 sampling season has been collated, graphed and interpreted. Data were collected on 6 sites on the lake covering most of the important areas. Work was also done on contract with the Mississippi Valley Conservation Authority to collect detailed measurements on such parameters as oxygen saturation, temperature, chlorophyll-a and Secchi depth. The results show that although similar trends in data are observed throughout the lake, each part of the lake is slightly different one to the other. For example, Three Mile Bay had the highest phosphorous concentrations when compared to other locations on the lake reflecting the fact that this area is perhaps the most heavily used by both permanent and seasonal residents. Another finding of this study indicates that the sediments may play a significant role in increasing phosphorous concentrations during the summer months. The low volume turnover of the lake essentially means that most of the phosphorous entering the lake, from all sources, eventually becomes trapped in the sediments. Increases in phosphorous input resulting from human activity will increase the concentration of the element in the sediments, which can later be mobilized back into the water column as conditions change. The data indicate, in accordance with many published reports, that White Lake is mesotrophic (moderately productive) bordering on eutrophic (very productive – filling-in) and is a lake sensitive to both human activity and other factors such as climate change and the presence of Zebra mussels. For more information on the 2015 findings, please visit the webpage and click on the report icons on the Home Page at www.WLPP.ca for either reading or download.

Water Quality Monitoring Program – 2016 – Conrad Gregoire

The WLPP, in cooperation with the Lake Partners Program of the Ministry of the Environment and Climate Change, will complete a significant water sampling program for 2016. Water samples will be taken at eight locations (two more than last year) once a month and every month during the spring, summer and fall and analyzed for total phosphorous and calcium. Secchi depth and temperature readings will also be taken. Additionally, Secchi depth and temperature measurements will be taken every two weeks. The locations of the sampling sites will cover most sections of the lake and include all of the sites shown on the map below. This year's analytical work will build on the research done in 2014 and 2015 and will begin to determine if there are any year to year trends in phosphorous (P) concentrations throughout the lake. We will also gain important information on the relative sources of P including contributions from sediments.

Two new initiatives will be added to our program this year. These involve collaboration with Professor Vermaire from Carleton University. The first is a measurement of lake-bottom biomass. This study is aimed at monitoring any changes in the amount (volume) of aquatic plants in the lake and to track changes which could be related to human activity, climate change and the presence of zebra mussels. The second project involves field testing of new inexpensive portable spectrometers which measure algal concentrations in the water column. In addition to testing lake water with this device, samples will also be analyzed for concentrations of chlorophyll a. The object of this work is to determine the usefulness of this device as an aid to water quality monitoring programs.



The north shore of White Lake (left side of the map shown) is underlain by acidic rocks (Precambrian Shield) whereas most of the lake body and the south shore are underlain by carbonaceous rocks (limestone or calcium carbonate). This difference in geological setting for the north and south shores of the lake may alter the water chemistry differently for water entering the lake from either of these two shorelines. If so, the measurement of the water chemistry parameters mentioned above (pH, conductivity, etc.) may help in determining if this is a factor which can be used to explain differences in P concentrations at different sites on the lake.

Repeating this work for at least three seasons will determine if there are any trends in P concentrations over time. We will know if P levels are increasing, decreasing or remain the same during the study period or if results vary in a non-predictable way due to weather or other factors. We will also have the knowledge needed to determine the most effective Water Quality Sampling Program to be used in the over the long term to ensure that we are collecting the required data to accurately measure the condition of the entire lake and any emerging trends.

The Mississippi Valley Conservation Authority (MVCA) has been contracted again this year to measure the temperature, alkalinity, pH, oxygen, oxygen saturation and chlorophyll-a at all of our sampling sites. Measurements will be taken at one metre intervals from the surface of the lake to the bottom. This work will be done simultaneously with the WLPP water sampling for phosphorous concentration levels.

In collaboration with the MVCA and the Ontario Federation of Anglers and Hunters, WLPP will once again participate in the invasive species monitoring program. Samples will be taken at a minimum of three locations on the lake.

Fisheries – Adam Pugh

Although I am the owner of Adam's Outfitting on the lake, and specialize in guided fishing trips, my background as a Fish and Wildlife Technologist has led me to start a project concerning the fishery of White Lake. I have created a volunteer creel survey for White Lake anglers. This is a tool used to record fish population average sizes which can then be applied to create a Catch per Unit Effort (CPUE) which is a measure of the number of fish you can expect to catch on White Lake in a given amount of time. I have also started a calcified ageing project. This is where one takes spine and scale samples from a fish (this does not harm the fish). From there the samples are sent out to a lab where they can be age dated. This study along with the creel survey will allow us to see how fast the fish grow in our lake, and which age classes are most abundant. I then hope to present this data to our local Ministry of Natural Resources and Forestry (MNRF) in order to help better regulate the fishery of White Lake. The slot size we currently have for walleye does not represent White Lake well and could have a detrimental impact on certain age classes; I fear we may end up fishing out certain age classes which will severely decrease recruitment rates in the future. Please pick up your creel survey at www.adamsoutfitting.ca or www.WLPP.ca, or at the White Lake General Store or the Hillside Bait Farm. Your cooperation is much appreciated.

Zebra Mussels – Conrad Gregoire

Last fall, the WLPP reported the first documented presence of adult zebra mussels in White Lake. Zebra mussel veligers (larvae) were previously detected in 2008 and again in 2014, but no adults, as shown in the photograph, were found at that time. We first observed adults clinging to the submerged portion of a floating dock on the north shore of White Lake located opposite McLaughlin's Island. Inspection of other docks in the area also showed the presence of zebra mussels. Positive identification of the collected sample was done by the the Ontario Federation of Anglers and Hunters. The chemistry of White Lake provides ideal conditions for the growth of zebra mussels. The water has a high pH, and contains adequate dissolved minerals, including calcium for shell formation. At this time, we do not know the complete distribution of zebra mussels at different locations around the lake. Large clusters of zebra mussels were not found at the north shore locations. None of the boats moored at the docks which were sampled have ever been in any body of water other than White Lake. To date we have received

reports of the presence of Zebra mussels in almost every part of the lake. It would be helpful if anyone at their cottages or lakeside homes could please examine the underside (submerged) part of their docs for the presence of zebra mussels. I initially found them as small isolated 'lumps' as I passed my hand through the algae clinging to the underside of my dock. These lumps turned out to be zebra mussels. If anyone finds zebra mussels, I would be grateful to receive a photo and location of the finding. I will then collate this information and have it added to the Provincial database. I can be reached by email at WLPPmail@gmail.com or cjgregoire@sympatico.ca

Update on the Trailer Park at Hayes Bay – *Janet Taylor*

The last newsletter to report on the proposed trailer park at Hayes Bay was distributed during the summer of 2015. A lot has happened since then. The WLPP spent many hours reviewing the scientific reports presented in support of the proposal for the trailer park, in assessing the reviews of those scientific reports that were carried out by a private contractor for the Municipality, and reading correspondence from the Ministry of the Environment and Climate Change (MOECC) and the Ministry of Natural Resources and Forestry (MNRF). We also spent a lot of time sharing our views and findings with the Mississippi Mills Council and found them very receptive.

Probably the most important event was the Committee of the Whole (COW) meeting of April 5, 2016 where the public was invited to speak to their concerns regarding the park. Council organized this because of changes to the proposed development that the public had not been given the opportunity to comment on. We really appreciated having this opportunity and spent a lot of time preparing for it. There was a wonderful turn-out of concerned people at that meeting and we received many compliments on the comments people had and how they handled themselves. We got positive feedback from Council on this effort.

To review: the current trailer park has been in existence for many years and accommodates approximately 40 trailers catering to vacationers. The new trailer park was originally proposed for 200 sites for essentially full-time residents for 6 months the year. Apparently the developer has now agreed to 100 sites, the maximum number permitted in the By-laws. The developer still does not want to observe the 30m setback as outlined in

the by-laws, official plans, and the provincial policy statement.

There are a number of myths about the development contained in official documentation. We have tried to get corrections on the record but so far without much success, so we are providing a sort of 'myth buster' list below for your consideration. Each myth starts with the statement which we consider misleading which is followed by our interpretation of the same issue. In each case we can quote source and exact wording if anyone would like more information. There are more myths than those cited below, but we are keeping the list short in the interest of brevity.

Myth #1:

Because of the proposed central sewage system the enlarged trailer park will be a" net environmental improvement for the lake"

The above assertion seems to have stemmed from a statement from the MOECC that there will "be a net improvement in phosphorous loadings from this site". The MOECC had no information on which to make a comparison between sewage from the original site, and what is expected from the new site as there was no study completed of the original site.

However, the population of the trailer park will likely be more than doubled. The number of days people will be at the trailer park is estimated to be approx 7 times what it is now (6 months full time for approximately 200 people as opposed to weekends and vacation e.g. 60 days for approx 80). There will be enhanced services (laundry, dishwashers, swimming pool etc.) and therefore a higher demand for water and significantly more sewage produced. The concentration of phosphorous in the sewage effluent coming from the communal septic system, which will reach the lake, will be about 66 times higher than what is normally found in that part of the Lake. (Calculated from MOECC figures on the concentration of phosphorous in the sewage leaving the treatment plant.) There will be two storm water pipes leading directly into the Lake and it appears one will be directly emptied into the Provincially Significant Wetland. The plan includes an enlarged docking system for perhaps another 60 boats, resulting in greatly increased boating activity in a shallow part of the lake (1.6 metres) which is officially classified as an Environmentally Sensitive Wetland. Increased boating activity in such a shallow area will promote the release of phosphorous from easily stirred up bottom sediments which generally contain very high amounts of phosphorous. ***How can this be claimed to be a "net environmental improvement"?***

Myth #2:

The Lake Capacity Assessment, approved by the MOECC, concluded that the Lake can accommodate the proposed increase in campground lots.

The MOECC did comment on the Lake Capacity Assessment but only to agree with the author (consultant) that the assessment using the phosphorous (P) concentration model for the calculation of lake capacity did not work for this lake because of the lake's chemical and physical characteristics. After the sophisticated P modelling was found to be

inappropriate for White Lake, an older method was used which merely divides the number of "lots" into the lake surface area. This method was used by some municipalities in Muskoka, who (arbitrarily) concluded that 1 lot per 1.62 hectares of lake surface area was acceptable. This number is referred to as the social density or "crowding" factor. It has nothing to do with the science or the characteristics of the lake e.g. its shallowness and low turn over rate, or what environmental pressures any lake can truly tolerate. In fact, the origin of the 1.62 is unknown. The MOECC made no comment on the validity of this calculation. However, using much more accurate figures than those presented by the developer for the number of "lots" currently developed on White Lake, the WLPP demonstrated that even this calculation was not correct and that the lake is already at or beyond capacity even when using their preferred model for calculating capacity. The new more accurate data used for the number of homes, cottages, trailers and campsites on the lake were obtained independently as part of the 'State of the Lake' report being prepared for the ongoing White Lake Stewardship Plan. (see appropriate section in this newsletter for more information on the Plan)

Myth #3:

The Environmental Impact Assessment (EIA) has been peer reviewed and approved by Hutchinson Environmental Consultants. The EIA has been reviewed by MNRF and they are in agreement with the conclusions of the report.

The EIA was reviewed by MNRF. Their focus was endangered species or species at risk. No endangered species were identified on the site, but because of possible species at risk, they required that the eroding shoreline at the south eastern extremity of the property be "left in its present state", presumably because of the snapping turtles nesting in this area.

Otherwise MNRF did clarify in a letter that they have "no responsibility for approving or denying the application" and that the MNRF neither "approves nor opposes an application" and that the "municipal approval authority has the responsibility of approving or denying the application". The EIA was also reviewed by Hutchinson Environmental Services for Mississippi Mills. The following is a direct quote from that review: **"The aquatic assessment focussed on fisheries issues while water quality issues were largely ignored." and "The preliminary storm water management report included a brief description of pre- and post-development conditions but did not alleviate concerns with water quality."** As far as we know no new information has been provided on either subject.

Myth # 4

"**MNRF supports the reduced setback from the water provided the existing and future trailers are no closer to the water"**

With respect to the MNRF position on the 30 m setback, they indicated that if the existing structures are considered "legally non-conforming" by Mississippi Mills, then they could remain. However no more structures could be constructed within the 30 metres. This follows the principle that structures that were legally on a site according to the laws of the

time do not have to meet the requirements of new laws i.e. they are legally non-conforming. Also these structures may undergo repairs or even be replaced but they must be made no larger than the original structure.

The developer wants to replace the original trailers with the large park models with add-ons i.e. porches etc. within the 30 m setback and preferably as close to the water as the old trailers. A 30 m setback has been documented as important to shading of the water, to the maintenance of woody debris, for removal of sediment from storm water run-off, removal of nutrients, coliform bacteria, controlling bank erosion and protecting aquatic invertebrates, salmonid fish, reptiles and amphibians.

There is a proposal that the new trailers be set on the back half of the lots, but there is no information on exactly how far back from the water that would be. Because this is still an intensive development, more like a subdivision, we feel that the 30 m setback should still be observed and that would in no way diminish and could enhance the value of the site to future residents.

White Lake Stewardship Plan

The initial objective of the *White Lake Stewardship Plan Steering Committee* is to prepare a comprehensive *State of the Lake Report*. This report will take into account the scientific data related to White Lake which has been produced over many years dating back to the 1950s. The data will be compiled and interpreted by experts on lake and drainage basin ecology. This process started in the fall of 2015 and will be completed by the fall of this year. The document will also contain up to date information on land ownership and usage and will give guidance to municipalities concerning the capacity of White Lake to accept new development. The *Stewardship Plan Steering Committee* will be meeting over the summer and into the fall in order to complete and publish this report. The report will be made available on the WLPP and other websites and will be presented to the general public at open meetings. Feedback and suggestions from the general public will be reflected in the final version of the report. Yearly monitoring of White Lake water quality and other inputs will be used to revise this report and bring it up to date when required.

The State of the Lake Report will then be used as a guide to produce the *White Lake Stewardship Plan* and will indicate the direction of future research and lake water quality monitoring activities. The Stewardship Plan will include actions needed to be taken in order to improve and/or preserve the quality of the waters of White Lake as well as to

preserve the integrity of its shoreline and surrounding watershed. This process will take an additional one and a half to two years to complete.

Input into *the State of the Lake Report* and the *White Lake Stewardship Plan* is being coordinated by a Steering Committee of the primary partners. These partners include local lake associations (WLPP, WLPOA), representatives of the four municipalities, the Ontario Ministry of the Environment and Climate Change, the Ontario Ministry of Natural Resources and Forestry, the Mississippi Valley Conservation Authority, a number of local business owners and the Algonquin First Nation.

Facilitation services for the Steering Committee are being provided by French Planning Services Inc. with the assistance of Watershed Canada. Funding is being provided by a generous grant from the Gottlieb Foundation and private donors.

Lake Coordinators – *Doug Smith*

When we started the White Lake Preservation Project we reviewed how other organizations, like ours, successfully engaged their community in participating in their programs. The best results happened when a core group of members positioned in key geographic areas of the district got advanced and detailed information and passed it on to their neighbours through a local area network.

We have asked about fifteen individuals in the White Lake area to act in this capacity for the promotion of the WLPP initiative, and this has been successful in enlisting over 190 people to our contact list. The proof of how well the network is capable of mobilizing members on an issue affecting the lake was the tremendous turnout of over 100 people for the April 15t, 2016 public meeting and open discussion held at the Mississippi Mills Council Chambers on the proposed new trailer park at Hayes Bay.

Issues affecting water quality and the preservation and protection of wildlife and lake shoreline will dominate the activities of the WLPP for many years to come. We must keep these issues in the public eye and encourage all those who use and enjoy the many diverse activities that the lake provides, to become active in maintaining the health of White Lake. I would like to congratulate the current coordinators for the tremendous job they have done so far and hope that more will join us.

There is still a **need for coordinators** on Three Mile Bay, Sunset Bay, Keith's Ridge, Centennial Lane and Donolley Bay. Anyone interested in becoming a coordinator, please contact Doug Smith at windsup@sympatico.ca or call at 613-225-8345.

Featured Activities

White Lake Fish Habitat Project – Melissa Dakers; Watersheds Canada

In late June 2015, Watersheds Canada staff, White Lake Preservation Project representatives, and Lanark County Stewardship Council members assessed potential walleye spawning sites on White Lake that were previously assessed in September 2014 and that were identified by the Ministry of Natural Resources (MNR). The Department of

Fisheries and Oceans funded the Fish Habitat Enhancement Project through the Recreational Fisheries Conservation Partnership Program. During this last field assessment, a number of potential walleye spawning sites were identified. The majority of the sites previously mapped by MNR were no longer suitable as potential walleye spawning sites, but new sites were identified. Suitable sites require rocky substrate, low vegetative cover, and sufficient water flow to oxygenate the fertilized eggs. Sites suitable for habitat enhancement with woody debris (protective cover for fish fry) were also identified and mapped. Sites deemed suitable for the addition of woody debris were carefully selected so that they would not interfere with boaters, which was an important consideration given White Lake has a mean depth of 3 metres and has heavy boating traffic. Special thanks to Laventure Construction and Sullivan & Son, Ltd. for their contribution to the project. The final report on the project, which includes detailed maps of the spawning enhancement sites as well as other information, can be accessed on the WLPP website: http://wlpp.ca/linked/christie_and_white_lake_2015_final_report_ver.2_.pdf

Shoreline Naturalization Program – Mekissa Dakers, Courtney Allison; Watersheds Canada

The Natural Edge is a shoreline naturalization program for waterfront property owners to help them restore their shorelines by planting native trees, shrubs, groundcovers, wildflowers and grasses along the water's edge. The program provides an opportunity for homeowners to restore their shoreline to a natural state, while still allowing water access and a lovely view. Courtney Allison, the Natural Edge coordinator, explains: "Native species have adapted to regional environmental conditions and are preferred by local wildlife for shelter and food. Planting along shorelines enhances local ecosystems, stabilizes shorelines from erosion, and improves water quality by filtering runoff." By participating in the Natural Edge program, you can ensure our water bodies remain healthy so they can be enjoyed by others for generations to come. The Natural Edge program provides: • A free site visit with landowners to discuss shoreline concerns, provide recommendations and assess planting conditions; • A personalized planting plan is created, which includes photos of selected planting areas and ideal plant species; • The ordering, delivering, planting, and mulching of plants; • A free Stewardship Manual to help property owners care for their newly planted vegetation; and • Ongoing support in subsequent years. • Cost to landowners is only 25 per cent of the total costs for their site.

Approximately 15 property owners on White Lake participated in this program. Last fall the plantings took place and over the years, these plants will grow and protect the shoreline in those areas. Boaters can spot the locations of these planting by the small sign in the shape of a fish, which is located along the improved shoreline.

BioBlitz

For a 24 hour period, local experts and attendees got together to identify as many species as possible of plants, animals, birds, trees, insects and aquatic creatures. Hence the term 'Bioblitz!'. The event was hosted by the White Lake Preservation Project and organized by Watersheds Canada under the guidance of Melissa Dakers. The event was funded by the generous contribution of the G^2 Gallery.

The event started off with registration starting at 3 pm on Friday May 27th. Participants were mainly families with children as well as interested adults. The first event was a forest walk with a tree expert retired from the MNRF and who is a current Board member of Watersheds Canada. The local tree species were identified and their place in our forest ecosystem discussed. We were surprised to find a black cherry tree in amongst the mixed hardwoods and pine. Later in the afternoon we had a bird walk with an ornithologist who able to identify many species of song birds by ear and by sight. Barred owls and a Sandhill crane were heard later in the evening, just after dark.

Once night fell, we turned our attention to moths and other flying insects. Some locals may have been alarmed to see a number of white sheets set up in the woods reflecting an eerie shade of ultraviolet. These had been set up by three 'moth-ers' (as they call themselves) and were designed to attract moths, flies, beetles and attendees of the

Bioblitz. Those present were treated to an enthusiastic group of experts who could literally identify hundreds of species of moths, big and small.

The next morning, there were forest walks led by a plant expert. Over a hundred species of plants were identified. There was time only to point out the more interesting plants and discuss their natural history. After a BBQ lunch, we enjoyed a marshland walk led by a scientist from the Canadian Wildlife Federation. We identified different frog and salamander species as well as some turtles who were sunning themselves on semi-submerged logs.

This event was enjoyed by all in attendance including the mosquitoes and deer flies who found our presence most satisfying. The event wrapped at 3:00 pm on Saturday afternoon.

Report on <u>THE LAKE FISHERIES MANAGEMENT WORKSHOP</u>, October 24, 2015 hosted by Watersheds Canada - David Overholt

This was the 14th workshop hosted by Watersheds Canada. The workshop had 3 components- a series of talks specific to fish management strategies, followed by talks on financial resources that are available to various organizations and a third component on the opportunity to network with the many organizations present. The workshop was well attended with more than 100 people registered and with representatives from all levels of government. These included two representatives from Manitoba who manage grant applications for funding from Fisheries & Oceans.

The Presenters:

Lisa McShane: Fisheries biologist with MNR-Kemptville, ON

<u>Fish Anatomy 101</u>

Lisa discussed the various game & forage fish in Eastern Ontario, how they are identified and their habitat preferences.

Anne Bendig: Fisheries biologist (retired), works with the Lanark County Stewardship Council.

<u>Habitat Tool Kits for Fish</u>

Anne prepared the technical reports for Watershed Canada regarding fish habitat enhancement. She described two 'Habitat Tool Kits- brush bundles and spawning beds

and gave local examples of their employment. Note that this was the basis for the recent spawning bed work carried out on White Lake. Spawning beds and brush bundles must be monitored for several years. Walleye beds are observed at night in the spring when water temperatures range from 5-8C. High intensity lights are employed- the fish count is derived from the beady little eyes gleaming back at you! The Lanark Stewardship Council offers an instructional video on habitat restoration on their website.

Jennifer Lamoureux: Aquatic biologist with the Rideau Valley Conservation Authority - Jennifer described 2 of the 1600 projects completed to date by the RVCA

The Otty Lake Smallmouth Bass Project

A three year project just completed that saw the creation of 224 bass spawning beds and 325 brush clusters. Second year monitoring showed a 43% success rate, which is considered to be good. A successful bed is one in which nests are observed being guarded by males. Incorporated with the beds are corner stones which act as blinds. These prevent guarding males from attacking the young of their neighbours.

The Jock River Wetland Embayment Creation Project

This project involved the excavation of a 1000 square metre embayment in the bank of the Jock River and adding habitats for forage and game fish. Within 8 months after completion daily monitoring showed counts of 30 to 40 walleye and an abundance of forage fish. This project was 1 ½ years in planning, required 384 volunteer hours and 9 days to complete at a cost of $80,000. Some of the funding came from fishing associations as well as Fisheries & Oceans. This project won the 2014 Canadian Fishing Industry Award.

David Browne: biologist, Director of Conservation with the Canadian Wildlife Federation

Big Fish or Many Fish? Keeping Fish Populations Healthy

The speaker presented a generalized discussion on what is a healthy fish population, and the ramifications of the removal of the largest sized fish from a population. Invasive species pressure can quickly reduce the numbers and weight of fish. Spiny Water flea predate zooplankton causing it to crash to 50% to 75% of their normal levels. Fishing pressure can cause some populations to become stunted when large fish are removed. Bass populations show dwarfism when stressed. Removing the largest members of a species can also invert the food web as in the case of trout and perch. It was pointed out that the Fisheries Act has protections for habitat, pollution, and fishing pressure with the use of catch limits, but it does not provide protection from the pressure of the sheer numbers of participants.

Dr. Jesse Vermaire - Professor of Paleolimnology, Department of Environmental Studies, Carleton University

The Algae Project: The 20 Lake Study

This study was conducted in partnership with the Rideau Valley Conservation Authority and the Friends of the Tay Watershed. The focus was on 3 environmental stressors: invasive species; eutrophication and phosphorous; and climate change. Lakes act as natural archives of environmental change expressing such things as excessive plant growth, blue green algae and sedimentation. Monitoring programs for such conditions are new and are less than 10 years old. By measuring the species and numbers of preserved

diatom species in sediment cores, it is possible to determine the environmental conditions existing they lived.

The 20 lake study selected lakes with different phosphorus gradients. A 30cm bottom sediment core reflects conditions existing over the past 150 years. A top/bottom core comparison count of the 20 most dominant diatom species can be used to indicate environmental changes. When the sampled lakes have low nutrient values, large changes in diatom numbers and populations are not expected. The primary change over time is an increase in lighter planktonic diatoms in present day waters which seem to be the result of warmer temperatures. This suggests warmer water stratification is causing diatomic changes. An example was also given of a Whole Core Study done on White Lake in 2014. White Lake is one of a few lakes that exhibit a significant increase in nutrient enrichment levels over the ice free season, in part due to its shallow nature. Sampling at the top of the sample core shows diatom species that do well under low light and high nutrient conditions. Another whole core study for Otty Lake showed that signs of nutrient enrichment dropped off in more recently laid sediments. It is suspected that this may be due to the introduction of zebra mussels.

A new study using macrophytic mapping is now under development. This technique measures the photosynthetically active radiation (light) present with depth. It is designed to study how Zebra mussels affect plant cover in a lake. Thus far the 2 years of records available shows that year over year changes in bottom plant biomass could be caused by seasonal water level fluctuations and the duration of ice cover on the lake. This is an ongoing project.

Kristina Inrig Executive Director of Sustainable Eastern Ontario
Raising Money for Lake Associations and Lake Projects
This networking organization runs the National Capital Environmental Non-profit Network (NCENN).
This presentation was on capacity building and helping an organisation with fund raising, legal issues, and governance. The program matches funding resources to partnership programs. Funding success depends on fund diversification, the internal capacity of your organization and prior experience. Budget size matters as does the number of available funding streams you should focus on. There are over 5000 public foundations in Canada and almost the same number that are private. Foundations are charities and only charities can fund other charities. Partnerships allow for access to funding. A Perth branch of Sustainable will be in operation by next spring.

Lorraine Jeffron: Co-ordinator of Recreational Fisheries Program, DFO
Brendan Spearin: Guidelines Biologist DFO
The Recreational Fisheries Conservation Program
Key to their address was the need for organizations to be partnered. The Department of Fisheries and Oceans targets the nuts and bolts of a program but does not fund promotion, liaison or coordination.

Two representatives from lake associations spoke about work done on their respective lakes:
Eagle Lake Representative: **Combating European Frogbit**

This aquatic plant was an unfortunate introduction by the Experimental Farm in 1939. It spread to the Rideau System by 1967 and to New York State by 1993. Somehow it has even made an appearance in the State of Washington! It is a small rounded leafed free floater that crowds out our native water plants. Volunteers on Eagle Lake have suppressed the population for the past several years by manual harvesting. It was noted that it is very slow to return once it has been removed.

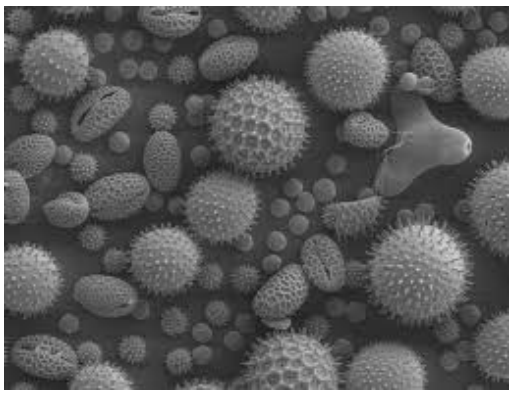
Karen Hunt: Otty Lake Association
The Otty Lake Bioblitz; July 17/18 2012
Karen described a 24 hour biological inventory conducted by Otty Lake volunteers. The objective was to add to the 2007 State of Otty Lake Report. It employed the use of both experts and 110 volunteers. Funding came from many groups.

Following the presentations a **discussion panel** was convened to address questions related to the effect of Zebra mussels on fish populations. Even though there was a lively discussion on the matter, no clear statement could be made regarding the affect of Zebra mussel on the health of fish populations.

This Just In…in the lake, that is! – *Conrad Gregoire*

Anyone at the lake during the second week of June most certainly noticed the annual pine pollen storm. This year it seemed to be particularly intense with everything covered in yellow dust. The situation was even worse for anyone suffering from allergies, in particular pine pollen.

Pollen contains significant amounts of protein, which in turn contains phosphorous. I have often wondered what the contribution of pollen is to the total phosphorous budget of a lake. Although we do not have numbers directly calculated for White Lake, published reports of research done on similar lakes revealed that approximately 10% of the phosphorous entering the lake was derived from pollen. The pollen entering the lake is, of course, natural and small lake creatures such as fish fry and smaller aquatic animals depend on this fallout as a source of food.



The vast majority of the pollen entering the lake eventually sinks, and becomes part of the sediments at the bottom of the lake. Very little of the pollen is immediately converted to free phosphorous, which is the form of phosphorous that we measure in our water samples, and also the form of phosphorous which can result in unwanted algal blooms. So enjoy the yellow snow in the knowledge that it is part of a healthy ecosystem. AHHHHchoooo!