

OUINTE CONSERVATIO



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Annual Report 2017

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613-968-3434 QuinteConservation.ca QuinteSourceWater.ca

This annual report is available online. Requests for printed copies can be made by calling the office.

About Quinte Conservation

Quinte Conservation is one of Ontario's 36 conservation authorities. We are a community based environmental protection agency. Located in eastern Ontario, Quinte Conservation provides cost-effective environmental expertise and leadership that develops and delivers programs to ensure the healthy coexistence between the community, environment, and economy.

Our 6,000 square kilometre area includes the drainage basins of the Moira, Napanee and Salmon Rivers and all of Prince Edward County and is home to over 117,000 people living in 18 municipalities. Quinte Conservation owns over 30,000 acres of land ranging from small parcels at some of our 39 water control structures, to large tracts of over 1,000 acres, many with significant natural features.

Our mission is to create a sustainable ecosystem where people and nature live in harmony. Our vision is to be the premier ecologically sustainable watershed. Our success is based on: local initiative, watershed jurisdiction and partnerships in resource management. We are a member of Conservation Ontario.



2017 Financial Report

2017 was a very productive year for Quinte Conservation. Staff started many projects which will be completed in 2018. We continued our efforts on our core programs and also added some new projects in our local municipalities.

Operations Budget - \$2,790,554

Where do our revenues come from?

| Authority Generated Revenue | 36 % |
|---------------------------------------|------|
| Ontario Ministry of Natural Resources | 12 % |
| Municipal Levies | 48 % |
| Special Municipal Levies | 3 % |
| Other Government Grants | 1 % |
| | |

Where do our expenditures go?

| Conservation Land Management | 9 % |
|------------------------------|------|
| Watershed Management | 66 % |
| Stewardship Services | 4 % |
| Corporate Services | 21 9 |

Capital Budget - \$2,464,870

Bay of Quinte Remedial Action Plan

| - | 11 | % |
|--------------------------------------|----|---|
| Quinte Conservation Capital Projects | 40 | % |
| Partnering Projects | 48 | % |
| Projects through Fundraising | 1 | % |

Unaudited summary of 2017 revenues and expenditures at Quinte Conservation.

Step Into Nature at QuinteConservation.ca

Executive Board 2017-2018

Quinte Conservation's Executive Board is made up of three watershed advisory boards from the areas we serve. The Advisory Boards represent the Moira River, Napanee Region, and Prince Edward Region Watersheds.

Janice Maynard, Quinte Conservation Executive Board Chair John Wise, Quinte Conservation Executive Board Vice Chair

Moira River Watershed Advisory Board:

| kie Denyes, Chair City of Belleville |
|--|
| ne Martin, Vice Chair Tudor and Cashel Townships |
| nry Hogg Addington Highlands Township |
| e Kerby Centre Hastings Municipality |
| ul Carr City of Belleville |
| ch Panciuk City of Belleville |
| an DeWitt City of Quinte West |
| ndy Fraser Marmora and Lake Municipality |
| nes Flieler Municipality of Tweed |
| le Grant Stirling / Rawdon Township |
| rrie Smith Township of Madoc |

Napanee Region Watershed Advisory Board:

Chair: John Wise, Township of Stone Mills Vice Chair: Heather Lang, Tyendinaga Township Steven Everhardus Town of Deseronto Roger Cole Town of Greater Napanee Phillip Smith Township of Central Frontenac Norm Roberts Township of South Frontenac

Prince Edward Region Watershed Advisory Board:

Chair: Janice Maynard, County of Prince Edward Vice Chair: Jim Dunlop, County of Prince Edward Jamie Forrester County of Prince Edward Ray Hobson County of Prince Edward John Hirsch County of Prince Edward Tom Livingston County of Prince Edward

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Flooding on the Bay of Quinte and Lake Ontario

The Flood

In 2017, the Bay of Quinte and Lake Ontario experienced the worst flooding in over 100 years. Shoreline residents with properties on the Bay of Quinte and Lake Ontario faced extensive damage to their waters edge. Residents experienced damage to docks, sump pumps, and in some cases, their home and other structures on their property.

Businesses such as restaurants, marinas, and campgrounds/RV parks were unable to operate (or had limited operation) and saw a loss of revenue as well as property damage.

Streets and residential roads had to be closed by municipalities. In some cases, homeowners had limited access to their homes and property.



Sandbagging efforts

What caused the flood?

The primary reason of why flooding occurred was because of extremely wet weather from January - May across the Lake Ontario and St. Lawrence River basin. With record high inflows from the Ottawa River, above average inflows from Lake Erie, and unusual ice formations on the St. Lawrence River, and temporary outflow reductions from Lake Ontario took place throughout January and March. To make matters worse, through the months of April and May, 346 millimetres of precipitation were received which is 220% of the average, or over double for that time of year.

Lake Ontario's average water levels peaked at 75.88 metres near the end of May which is within centimetres of the Lake Ontario and the Bay of Quinte regulatory floodplain. Water levels exceeded the highest water levels recorded since the records began in 1918. Further, in an effort to drawdown Lake Ontario water levels, record outflows were also experienced when allowable and possible.

How did QC respond

Quinte Conservation staff developed resources to provide information to the public and improve local knowledge of flood conditions. Frequently asked questions were posted to the Quinte Conservation website and provided information on where to find current and forecasted water level information, the factors that influenced Lake Ontario and the Bay of Quinte water levels, how to protect shorelines from erosion and homes from water damage. Additionally, water level updates were added to the Quinte Conservation website. A web-based form was developed to allow residents to submit their observations of high water conditions and request a follow-up e-mail or phone call from Quinte Conservation's knowledgeable staff.



Floodwaters



Road Closures

Quinte Conservation used their floodplain mapping and geographical information system technology to provide information to municipalities on what areas may be impacted by the high water levels. Quinte Conservation coordinated media releases with

Planning and Regulations

There was a significant increase in amount of permit applications during the high water events of 2017. QC staff issued 302 permits to shoreline residents, 75 of those permists were directly related to shoreline erosion caused by flooding events on Lake Ontario, There were 255 requests for site visits, however, 210 of those requests had staff visiting the property.



Dam at Second Depot Lake

Dams

Quinte Conservation owns and operates over 40 water control structures. The purpose of the dams varies by structure but may include flood control, low flow augmentation, seasonal recreation and water supply. The dams were constructed between 25 years ago to well over 100 years ago and are made from concrete, earth, rock and/or timber. The control structures include valves, gates, obermeyer weirs, stop logs and panels. In 2017, Quinte Conservation worked with an independent Erosion

member municipalities, attended emergency control group meetings and provided sandbags to some municipalities while they awaited their sandbag orders to be delivered.

In order to keep up with the public's concerns and comments, an online form was created so that residents could easily reach out to staff with their questions. This form was also helpful in documenting the areas and properties that were effected during the flooding and high water events that took place throughout 2017.

consulting engineering firm to inspect all of the structures following industry standards to review the structural integrity and condition; the embankment, headpond and tailwater condition; the condition of the operating components; and the safety of the structure for operators and the public. The findings will help guide Quinte Conservation's capital maintenance planning for the next ten years.

Water Protection

Helping the Bay

Stormwater Management by: Mark Boone, Stormwater Project Coordinator at Quinte Conservation Most of us think little of rain unless there is too little or too much of it. Have you ever wondered what happens to a rain drop as it makes its journey from the sky to the earth? When rain falls to the earth some is absorbed by the soil to recharge the underground aquifers and keep plants living. The balance runs over land to replenish our streams and rivers. Disruption of this natural cycle happens when towns and cities are created and cover the ground surface with buildings, roads, and parking lots. These hard surfaces prevent the infiltration of rain into the ground which results in an increase in runoff called stormwater.

What is stormwater?

Stormwater is rainwater and melted snow that runs downs streets, through storm drains, and into a network of pipes which eventually lead to local waterways and river systems. As stormwater moves, it picks up contaminants along the way. These contaminants can be extremely harmful to the health of our water. In our case, these contaminants end up draining into the Bay of Quinte



A Stormwater drain with contaminated water.

During periods of rainfall and snow melt, high levels of stormwater runoff can result in flooding and erosion problems. This runoff can also create water quality problems as rain travelling over parking lots and urban areas can pick up nutrients from fertilizer and animal waste, as well as other contaminants such as heavy metals and road salt.



Delhi Park Stormwater open house 2017

Historically the development of towns and cities has been through the installation of pipes below our roadways that are able to quickly drain the water away from built up areas. This practice can help alleviate localized flooding problems but does not help address water quality issues. Increased awareness of this problem has resulted in a change to how stormwater is dealt with. New developments are now required to build proper stormwater facilities that address both water quality and flooding control.

However this practice didn't start until the 1980s and as a result there are many stormwater pipes that drain the untreated water directly into receiving water bodies. The Bay of Quinte Region is no exception considering urban areas around the Bay were historically developed without stormwater controls. Sampling of a select number of these stormwater drains have shown that they are a significant source of phosphorus to the Bay of Quinte. Such inputs are of concern to the Bay as it is sensitive to these inputs, and with too much phosphorus, deteriorates its health.

To help with this problem Quinte Conservation has been working with local municipalities where urban areas front directly on the Bay. With support from municipal, federal, and provincial levels of government, studies have been completed on select stormwater outfalls to determine the most appropriate solution for treating and improving water quality. To date, projects have been completed in the City of Belleville, the Town of



Stormwater Outfall

Deseronto and the Town of Picton. One new project has been started in the City of Belleville and more are being planned for local municipalities. Watch for notices in your local newspaper of upcoming public open houses to learn of these projects and have your say in choosing the right solution!

Untreated stormwater is a significant source of contamination to receiving water bodies. New development that occurs in the Bay of Quinte region is required to meet a standard for stormwater quality and quantity control.



water sources.

The Quinte Region Source Protection Plan came into effect of January 2015. The Plan directs local efforts to protect and keep our sources of municipal water clean. It includes 63 policies, based on science and developed with public consultation.

In 2016, the Quinte Region Source Protection Authority continued to provide policy interpretation, implementation tools and other support to municipal staff responsible for implementation of the Quinte Region Source Protection Plan.

Municipalities and various ministries responsible for implementing policies in the Plan submitted their 2016 annual reports by February 1, 2017. These annual reports indicate that the implementation of the Quinte Region Source Protection Plan is progressing well.

Quinte Conservation's Risk Management Officials continued to mitigate risks to drinking water sources.

Source Water Protection

The Source Water Protection program helps to implement a multibarrier approach to strengthen the protection of municipal drinking

Historically such requirements did not exist for the majority of the urban settlement areas around the Bay. Over the past few years Quinte Conservation has worked in partnership with Municipalities, Environment and Climate Change Canada and the Ontario Ministry of the Environment and Climate Change to retrofit designated areas with proper stormwater treatment.

To date Quinte Conservation has worked with local municipalities to successfully complete Environmental Assessments and detailed designs for the following three projects:

- 1. Herchimer Ave Project (City of Belleville)
- 2. Delhi Park Project (Town of Picton), and
- 3. Millpond Outfalls (Town of Deseronto)

Projected Future Stormwater Projects

We have secured funding through the Environment and Climate Change Canada – Great Lakes Sustainability Fund program to continue this work and have applied to the Ontario Ministry of the Environment for additional funds to support new projects. These projects include: the Foster Ave project (City of Belleville), the Picton Harbour Master Drainage Plan, and are working with other municipalities on other projects.

In 2017, eight risk management plans were negotiated to manage existing threats and 45 application reviews were completed to ensure no new threats were created in areas adjacent to municipal water supplies.

The Source Protection Committee met three times in 2017; in January, March, and November to discuss the implementation of the Source Protection Plan, technical rules changes and the upcoming 2018 Annual Progress Report and Work Plan



The Relationship between inflow and outflow of water in a watershed.

QuinteSourcewater.ca

Amy Dickens, Source Water Protection Project Coordinator and **Risk Management Official/Inspector** adickens@quinteconservation.ca (613) 968-3434 ext. 132



GIS

Geographic Information Systems (GIS) at Quinte Conservation provide a solid foundation for the distribution of authoritative geospatial data sets within the Authority. GIS applications are relied on each day to assist the public services offered through Quinte Conservation programs.

QC's GIS department supported many projects throughout the year. Updates were made to our web-based GIS application to provide staff with better access to Quinte Conservation mapping data and historical permits. Close collaboration with the Conservation Lands Management department provided an opportunity to input the Authorities Managed Forest Plan data into an easily accessible GIS format.



This oblique aerial photograph along the shores of Lake Ontario during the high water events of 2017 was taken to document high water conditions for future reference.

In 2017, Quinte Conservation secured funding and provided its commitment to the Ministry of Natural Resources and Forestry to partner in the 2018 digital orthophotography in south-central Ontario project. This partnership with the province and other participating agencies ensures that Quinte Conservation staff continues to have subsidized access to the best available aerial photography for our watersheds. The 'imagery' captured is a critical base mapping dataset for many of the Authorities day to day operations.

The 2017 high water levels in Lake Ontario prompted Environment and Climate Change Canada (ECCC) to meet with Conservation Authorities and determine the impacts of these above normal levels. Using GIS tools and analysis procedures, staff were able to develop a methodology to accurately describe the number of shorefront and residential dwellings affected under a given high water threshold scenario.

Prior budget planning provided the GIS department with an opportunity to replace aging wide-format plotters and scanners with some of the best hardware on the market today. Hardcopy GIS based maps remain a relevant and important communication tool. The speed and quality at which these maps can be generated or digitized has now been vastly improved.

With its Information Management background, the GIS department at Quinte Conservation has responsibilities in maintaining and administering the Eastern CA WISKI Hub. A five-year strategic hardware planning proposal was developed in early 2016 by the GIS department. By 2017, the necessary steps taken to refresh aging hardware were implemented, and an established management strategy was in place.

What is a Geographic Information System (GIS)?

A geographic information system (GIS) is a framework for gathering, managing, and analyzing data. Rooted in the science of geography, GIS integrates many types of data. It analyzes spatial location and organizes layers of information into visualizations using maps and 3D scenes. With this unique capability, GIS reveals deeper insights into data, such as patterns, relationships, and situations-helping users make smarter decisions. - Source, ESRI



Wetland Ecology Boardwalk at the Frink Centre

fall of 2018.

The original Wetland Ecology Boardwalk was built between 1994 and 1997 in order to make wetlands studies accessible to visiting school groups. Thousands of students visit the boardwalk in a year, and many more as public visitors.



The re-build was made possible through the generous support of private donors, the community, and foundations. Quinte Conservation has also hosted a few events where admission and event donations supported the cause.

The third phase of the boardwalk re-build can be done only if sufficient funds/donations are acquired. You can help by donating online at quinteconservation.ca!

<u>NG Projects</u>

Construction started in 2017 to re-build a second section of the cherished boardwalk at the Frink Centre. Construction is still underway and it is hopeful that the project will be completed by the

In order to keep the boardwalk in service, Quinte Conservation began fundraising to replace the sections in 2015.



Wetland discovery

Bridge Replacement at Depot Lakes Conservation Area

The Rowely's Rapids Bridge is located halfway between Third Depot and Second Depot Lakes.

The previous bridge was over 25 years old and needed to be replaced. The bridge was completed in the fall of 2017.

This bridge is part of the 9 km of hiking trails at Depot Lakes Conservation Area and Campground.



Workers replacing the bridge at Depot Lakes.

<u>communications</u>

2017 marked the 70th anniversary of conservation throughout the Quinte Conservation Watershed. In order to commemorate this special occasion, a 70th anniversary logo was used throughout the year, and a number of special events took place.

Family Day at the Frink took place during the family day long weekend in February. This outdoor event had over 1,000 participants, some driving as far as Oshawa. This family friendly event was to help support the re-construction of the Frink's Wetland Ecology Boardwalk. Just under \$3,000 was raised through the cost of admission and donations. Families participated in outdoor activities like shelter building, painting using forest found items, and ecosystem jenga. Guests enjoyed harvest soup that was made over an open fire, hotdogs, and marshmallows.



Family Day at the Frink. Over 1,000 individuals attended this outdoor event.

Another event that took place was the 70th anniversary photo contest. This contest started on February 1st and ended on October 31st. 300 photos taken at Quinte's conservation areas featuring landscape, wildlife, and people were submitted. Through a judging process, 12 of those photos were selected to move into the next round of judging. There were 6 finalists and 6 runner ups. All 12 photos were made into blank note cards which are available for purchase at the Quinte Conservation Office. The grand prize winner received a travel voucher from VIA Rail. This event wouldn't have been possible without the generous donations and support from local businesses.



1st place was awarded to Jess Mulholland - Suddard (right) for her photo taken at Little Bluff CA.

The Rain Barrel Sale was moved back a few weeks so that QC summer students would be available to help during the event. Around \$4,000 was raised, increasing the sales from the year previous. Proceeds from this event went to support the Adopt an Acre Program.

Our Adopt an Acre program was just shy of reaching the 250 acre goal in 2017. However, it exceeded last years goal of 200 acres by 45. A new Adopt an Acre 2017 promo plush mascot (right) was added to







The Fall Festival on October 28, 2017 at the Frink Centre had 136 participants and raised almost \$500 for the Wetland Ecology Boardwalk.

Adopt an Acre proceeds supported the new water monitoring and research facility. Proceeds are currently being raised to help build the facility at Quinte Conservation's home base located at Potter's Creek Conservation Area.

Another successful event took place at the Frink Centre on October 28, 2017. The Fall Festival was well received by participants and raised almost \$500 to support the re-build for the Wetland Ecology Boardwalk. This event was another collaboration between the Education and Stewardship, and Communications Department at Quinte Conservation. Participants enjoyed a harvest soup made over an open fire, and activities like rattle making, live music, drumming circle, shelter building, bird watching with the Quinte field naturalists, and building a pine cone bird feeder to hang on the trails.

Outreach

Over 100 individuals attended Quinte Conservation's tick information night hosted at the organization's head office in Belleville on Tuesday, May 30 2017.

Public Health Inspector Aptie Sookoo gave the hour and a half presentation with the goal of informing the public about the dangers associated with blacklegged ticks, also known as deer ticks, and Lyme disease.

On January 19, 2017, QC welcomed Salamander Conservationist, Matt Ellerbeck and Snake Conservationist, Kenny Ruelland for a free informational event about salamanders, snakes, and other reptiles. Live native reptile species were at the event for participants to meet and interact with.



Free Events & Community

The event started with two short presentations about salamanders and snakes, discussing the topics of habitat, diet, and endangerment. The speakers were available to debunk myths surrounding these gentle creatures and to answer any questions that attendees had.

Like in previous years, this event was widely popular and quests were asked to RSVP in order to attend.



Event participants at the Salamander and Snake Night spent some quality time with a rescued Snaping Turtle.

Spend time in Nature! ttike, Camp, Play Quinte-CONSERVATION QuinteConservation.ca

Education and Stewardship

Tree Planting

2017 saw quite a few tree planting events throughout Quinte's Watershed. Through sponsorship from 8 Wing CFB Trenton to plant 2,000 trees across the watershed, Quinte Conservation was able to purchase 1,800 seedlings for the Seedlings for Shorelines program as well as 200 trees to be planted at QC's Longwell Property in Foxboro.

8 Wing CFB Trenton staff, local scouts and their families, and QC staff participated in a tree planting day on May 12, 2017.



8 Wing CFB Trenton staff with Scouts and QC Staff.

In addition to the tree planting day, 8 Wing CFB Trenton presented a plaque to Quinte Conservation commemorating the planting of 200 trees.

In October Quinte Conservation partnered with the Association for Canadian Educational Resources (ACER) and Loyalist College to naturalize river front on Loyalist College Property. This project was made possible by funding received through the Great Lakes Guardian Community Fund. Over the course of two weeks, 1,000 trees and shrubs were planted along the Potter's Creek riparian

zone. 100 of the trees and shrubs were tagged and measured. Those 100 trees and shrubs will be monitored for survival success and growth rate.





(L) Tree tag from the ACER tree plant. (R) QC Education and Stewardship Coordinator, Maya Navrot, meets with Dan Macdonald, Township of Greater Napanee, to discuss the shoreline planting event at Selby Creek.

In September 2017, QC's Education and Stewardship Coordinator met with the Township of Greater Napanee staff to discuss naturalizing a portion of the shoreline along Selby Creek. In early November, a group of local scouts met at the municipal park to plant a variety of native wildflowers, trees, and shrubs. This project was made possible through funding by the Bay of Quinte Remedial Action Plan and their Habitat Enhancement Program.

Education

For the past few years Quinte Conservation and Family Space have partnered to bring a free educational program to Potter's Creek Conservation Area that focuses on environmental early learning with free outdoor play. Due to popularity, this program expanded to offer an additional day one Saturday per month.

With cutting edge outdoor programs offered throughout the year, The H.R. Frink Centre remains a popular destination for schools and groups.

A donation was made on behalf of the Belleville chapter of ADK - Womens Educators, for educational programing at Quinte Conservation. The donation was split up and supported the free Wild About Wildlife events and the Stream of Dreams program.



Public School.

There were 6 free Wild about Wildlife events during July and August of 2017. These events are are offered at public locations throughout Quinte Conservation's Watershed. There were approximately 2,000 people that attended these events. Each year these events are accompanied by a live native snake and reptile



Stewardship

Once again the Seedlings for Shorelines program was a huge success. Quinte Conservation partnered with lake and cottage associations to offer this popular program to waterfront property owners across Quinte's Watershed. The Seedlings for Shorelines program is a great opportunity for waterfront property owners to naturalize their shorelines to help reduce erosion, protect water quality, and create fish and wildlife habitat.

In 2015, Quinte Conservation partnered with 16 organizations to

ADK Member, Kathryn (L), shakes hand with Education and Strewardship Coordinator, Maya Navrot, by the Stream of Dreams fence at Foxboro

display, live birds of prev. and a traveling puppet show that features environmental based stories and songs. In addition to those displays event goers can participate in handson out-door learning activities. Some of these include:



Participants from the 2017 Wild About Wildlife event held Belleville

ecosystem jenga, the watershed model display, water bugs, biodegradable planters for native wildflowers, and a mud kitchen.

lead the development of an informational guide on the Napanee Plain. The Guide to Alvar and Grassland Species of the Napanee Plain was made possible through funding received by the Ministry of Natural Resources and Forestry, The Government of Ontario, and the Governement of Canada. Although the Guide was published in 2017, a revision will be made in 2018. Copies of this guide book will be available online after the revision.

The Stoco Lake Stewardship Plan was completed in the spring of 2017. The plan discusses possible improvements that once implemented, would help improve the the health of Stoco Lake.



It's been almost a year since Quinte Conservation received delivery of a brand new electric car. Originally purchased in 2017, this vehicle was a way for QC staff to reduce their carbon footprint while attending functions that did not require long distance driving. The majority of staff have driven the vehicle and report that they are pleased with how the car drives and the ease of charging. Almost everybody that drives the car remarks on how guiet and smooth the drive is.



Mark Boone, from Quinte Conservation, using the electric car charger.

The vehicle can travel approximately 200 kilometres before it requires charging; however, staff reported the main drawback for not driving, was the fear of limited range and being unable to recharge. Now that staff have driven the car more, and have a better understanding of the vehicles range, that initial fear has gone away. The growing network of charging stations in the Quinte region also helps calm range anxiety. You can find a charging station installed at Quinte Conservations Head office (Potter's Creek Conservation Area) in Belleville. Quinte Conservation's charging station is open available to the public. Fast charging stations, which can charge your car in 20 minutes, can be found in Belleville, on Bell Blvd. and another in downtown Picton.

In comparison to gas vehicles, the electric car requires less maintenance as it doesn't need oil changes and there are fewer parts requiring maintenance like transmission and exhaust systems. One of the largest benefits of driving the car is that there is no emission of greenhouse gases from the burning of fossil fuels.

To date the car has been driven almost 5000 km and in accordance with the vehicle manufacturers website this translates to a savings of approximately 3300 kg of CO2 (enough to fill approximately 8 mid-size houses) and saved approximately 375 litres of fuel.

The largest benefit occurs when the car is charged in the evening when electricity prices are lower and energy sources are non-carbon emitting. Preliminary figures indicate our electricity costs to drive the car are approximately 2 cents per km versus an estimated 10 cents per km for a similar gasoline powered vehicle. All in all, the benefits are big in that driving the electric car saves both money and the environment.

Help Keep Our Lakes and Rivers Healthy

- Shorelines with grasses, wildflowers, and shrubs filter rain runoff and remove nutrients that may lead to algae growth.
- Planted shorelines reduce erosion and deter Canada Geese.
- Minimize fertilizer use to reduce algae and aquatic plant growth off shore.
- Pumping your septic every 3 to 5 years will help to avoid leaks into your lake and well water. An inspection of your septic tank can stop leaks before they happen.
- Test your well water regularly for harmful bacteria.

- It is best to drain pool and hot tub water away from the lake. Treated water can alter the lake chemistry.
- Use a floating dock as it will rise and fall with changing water levels.
- Excessive noise can disrupt and startle wildlife.
- Outdoor lights disrupt night life like flying squirrels, bats, and moths.
- Boat wakes lead to shoreline erosion, the breakdown of shorelines.