



SHORELINE GUIDE – TOWNSHIP OF TAY

The Township of Tay is almost 140 km² in size, with approximately 70 km of shoreline, only 5% of which is owned by the municipality. More than 1,000 properties are located along the shoreline in Tay - this means that property owners can do a lot to influence the health of the Tay shoreline.



The purpose of this guide is to provide information and education about interesting aspects of the Tay shoreline, and to improve awareness about the positive contributions waterfront property owners and lake users can make to enhance and sustain the health of the shoreline and lake.



The Tay shoreline is part of Severn Sound, a group of bays in south-eastern Georgian Bay, Lake Huron. The characteristics of the shoreline vary across the municipality, and include a mix of natural and altered shoreline: coastal wetlands, woodlands, limestone outcroppings, cobble beaches, the rocky coast of the Canadian Shield, as well as more populated areas of development and human-induced changes. Some of the shoreline is natural, but nearly half of the shoreline in the Township is significantly modified from its natural state.

The Township has two municipal water systems that take water from Georgian Bay: the Tay Area Water Treatment Plant, located in Victoria Harbour, services the communities of Waubaushene, Port McNicoll and Victoria Harbour; the Rope Subdivision Water Treatment System services the Rope Subdivision near Port Severn. Both systems have a surface water intake, located in shallow water in Severn Sound, and a water treatment plant that processes the water to ensure it meets provincial drinking water standards. Property owners not connected to these municipal water sources may have a private surface water intake, or a private water well with groundwater as the source.

Natural Shorelines

Natural vegetation along the shorelines of lakes, rivers, and wetlands plays a crucial role in providing habitat for a diversity of fish and wildlife, and maintaining healthy aquatic systems and water quality.

The *littoral zone* is the shallow water in the nearshore. The *riparian zone* is the land closest to the water's edge, and connects the lake to the surrounding uplands. The littoral and riparian zones are sensitive parts of the landscape. These two zones are very important for maintaining lake health and wildlife habitat, but are also where many human activities occur. Waterfront property owners and lake users can help limit impacts from damaging practices and shoreline development.



Marsh Marigold



Great Blue Heron



Canada Darter

Actions to protect and sustain a healthy shoreline



✓ Maintain at least 75% of your shoreline frontage in a natural state, and minimize water access points.

✓ Establish, expand or enhance a thickly vegetated, 'no-mow, no-chemicals' riparian buffer zone of native plants beside the lake. The ideal buffer is 30 m wide (or as large as possible on small sites), and includes a variety of native trees, shrubs, grasses and wildflowers.

✓ Keep your lot well treed: selectively prune branches to maintain a view, rather than remove the whole tree.

✓ Preserve and encourage native aquatic plants in the littoral zone. A natural nearshore zone supports spawning, nursery and feeding areas for fish.



✓ Leave natural debris such as fallen trees, branches, leaves and rocks along the shoreline - they provide nutrient inputs and habitat structures for fish and wildlife.

✓ Design water access and docks to limit negative impacts on the shoreline. If necessary, use a dock to bridge the weedy shallows rather than removing plants. Floating, cantilever or post-supported docks have a minimal impact on the shoreline because they do not disturb the lake bottom or restrict the movement of water close to the shore. Use environmentally-friendly building materials such as untreated cedar or hemlock, or plastic barrel floats free of chemicals for any structures in the water.

✓ Plan for a natural shoreline when building: maintain existing shoreline vegetation, and ensure buildings are appropriately set back from the shoreline and buffered by natural vegetation.

✓ Keep your beach above the ordinary high water mark. Sand, soil or fill that is dumped in the water can smother aquatic life, harm fish habitat, change water flows, and is likely to be carried away by water currents, waves and ice.



✓ During low water levels, leave newly exposed areas undisturbed rather than infilling or modifying them, so that the habitat is available to plants, fish and wildlife when water levels rise again. Shoreline plants have a natural ability to adapt to changing water levels. The amount and type of vegetation may change considerably with lake levels, depending on the slope and characteristics of the nearshore.

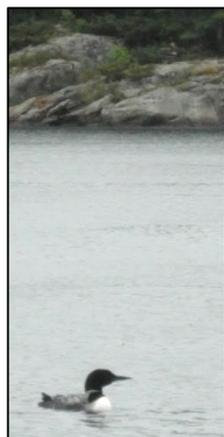
✓ When water levels are low, consider mooring boats offshore, sharing docks, or other alternatives to dredging the lake bottom to provide boat access. The negative effects of dredging on aquatic life and water quality are considerable.

✓ Replace existing or failing retaining walls with a more natural shoreline, or stabilize shoreline erosion using bioengineering (engineering techniques using live plants or natural materials). Vertical retaining walls provide limited riparian and littoral habitat, and wave action can cause scouring below the water line, causing the wall to deteriorate.

- ✓ If your shoreline has a groyne (a breakwall or man-made structure that extends out from the shoreline into the nearshore), investigate the feasibility of removing it. Groynes were historically built as a shore protection measure, but can impede water circulation and movement of lake sediment, change the flow of water along the shoreline, and negatively affect water quality at the shoreline where people play and swim.



- ✓ If your property has a septic system: conserve water, avoid using harsh chemicals that kill bacteria, keep solids (grease, food waste) out of the system, have the tank pumped regularly (every 3-5 years), keep activities and heavy objects off the leaching bed, and pursue necessary repairs as they are discovered.



Common Loon

- ✓ Use phosphorus-free, non-toxic soaps, detergents & cleaners, and avoid using chemicals near the water. Do not use any soap around water: even biodegradable soaps can harm aquatic life if they enter water directly, since they require soil and bacteria to properly break down the chemicals.

- ✓ Minimize runoff on your property: divert roof water into rain barrels, and use permeable materials (e.g., woodchips, gravel or interlocking bricks) on walkways and driveways where possible, to allow rainwater to infiltrate into the ground. Runoff can contain pollutants such as excess lawn fertilizer, pet waste, and salt, which can degrade the lake.

- ✓ Refuel your boat carefully to avoid gas and oil spills.

- ✓ Watch your boat's wake - it can cause shoreline erosion and destroy fish and wildlife habitat.

- ✓ Learn to identify invasive plants and animals to prevent their spread. Where necessary, remove or control non-native species, using the most up-to-date best management practices.

Benefits of a natural buffer and natural shoreline

- 🦋 Provides valuable habitat and corridors for wildlife movement.
- 🦋 Improves water quality by intercepting surface runoff, sediment, contaminants and excess nutrients before they enter the water.
- 🦋 Protects the shoreline by anchoring the soil, reducing erosion from wind, waves and ice.
- 🦋 Requires limited maintenance: native plants are adapted to their environment and do not depend on chemical application or frequent watering to survive.
- 🦋 Deters nuisance geese from congregating, since they prefer to graze on mowed turf where they can see predators and they have easy access to water.



Leopard Frog

Working Around Water

There are a variety of rules and regulations to help ensure that work in or near water has a minimal impact on the environment. Before starting any work around water, investigate what agencies need to review and approve your plans and issue permits. Approval may be required from more than one jurisdiction (municipal, provincial and/or federal); it is the responsibility of the property owner to comply with all existing laws, rules and regulations. Working without a permit where one is required can result in substantial fines and/or prosecution. Be sure to contact agency staff well in advance of your planned work.

For more information:

Township of Tay

705-534-7248 www.tay.ca

Ministry of Natural Resources and Forestry, Midhurst District

705-725-7500 www.ontario.ca/page/crown-land-work-permits

Fisheries and Oceans Canada

1-855-852-8320 www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html

Transport Canada, Navigation Protection Program

519-383-1863 www.tc.gc.ca/eng/programs-621.html

Ministry of Environment and Climate Change, Spills Action Centre (to report a pollution spill)

1-800-268-6060 www.ontario.ca/page/report-spill



Water Levels

Water levels in Severn Sound fluctuate with changes in water levels in Georgian Bay, Lake Huron and Lake Michigan. The changes can be observed on a short- and long-term basis: hourly, daily, seasonally, and yearly. There is a water level gauge installed in Severn Sound, in Midland Harbour. This gauge is operated and maintained by the federal government through the Canadian Hydrographic Service, and water level information can be obtained online at www.tides.gc.ca/eng/find/zone/42 (select the Midland location) or by telephoning 705-526-6413. Historical monthly and yearly water level information for the Great Lakes is also available, by visiting: www.tides.gc.ca/C&A/historical-eng.html (look for the “Graphs of Network Mean Water Levels” link).

Invasive Species: Aliens Among Us

There is a growing concern about alien (non-native) invasive species and the negative impacts they can have on the environment and native species, the economy and society. Non-native species often become well established before their invasiveness is recognized. Many invasive species can be found in shoreline areas, both onshore and in the nearshore. They can spread quickly, crowd out native plants and reduce biodiversity, restrict access to water, get caught in boat propellers, and impact recreational activities.

Typically, an alien species becomes invasive because of a lack of natural controls such as predators or disease that would be present in their home range to help regulate the population. Without these natural controls, invasive species have a competitive edge over native species, and can become a problem through rapid spread and increase in numbers.

There are many types of invasive species, including plants, animals, and micro-organisms. Some have been accidentally introduced, for example: weed seeds mixed in with imported soil or crop seeds, and insects, diseases or fungi that are present on imported materials. Other species were introduced intentionally, such as agricultural crops, landscape and ornamental plants, or plants for medicine and research.

Shoreline property owners and lake users can help by:

- Becoming familiar with native and non-native plants and animals found in shoreline areas.
- Reporting invasive species to www.eddmaps.org/ontario or the Invading Species Hotline (1-800-563-7711).
- Supporting local invasive alien species control or management activities.

Examples of invasive species present in Township of Tay shoreline areas:



Zebra and Quagga Mussels
(*Dreissena polymorpha* and *D. bugensis*)



Japanese Knotweed
(*Fallopia japonica*)



Phragmites / Common Reed
(*Phragmites australis* ssp. *australis*)

For more information:

Severn Sound Environmental Association

www.severnsound.ca/programs-projects/wildlife-habitat/invasive_species

Ontario Invasive Plant Council

www.ontarioinvasiveplants.ca

Ontario Invading Species Awareness Program

www.invadingspecies.com

Species at Risk

In the Township of Tay, there are nearly 40 'Species At Risk' (SAR) – rare species of native animals and plants that are at risk of disappearing, and are in need of conservation. There are three categories of SAR: Endangered (most at-risk), Threatened, and Special Concern. The status of SAR and the official lists of Species At Risk in Ontario and Canada are periodically updated as new information becomes available. Federal and/or provincial legislation or policy may protect SAR and their habitat.



Monarch Butterfly

Species At Risk may be found in shoreline areas in the Township of Tay. For example:

Birds:

King Rail (Endangered)

Barn Swallow, Chimney Swift, Least Bittern, Eastern Whip-poor-will (Threatened)

Bald Eagle, Black Tern, Common Nighthawk, Eastern Wood Pewee, Olive-sided Flycatcher (Special Concern)



Snapping Turtle

Reptiles:

Blanding's Turtle, Eastern Foxsnake, Eastern Hognose Snake, Massasauga (Threatened)

Milksnake, Eastern Musk Turtle / Stinkpot, Eastern Ribbonsnake, Common Five-lined Skink, Northern Map Turtle, Snapping Turtle (Special Concern)

Bats:

Little Brown Bat, Northern Long-eared Bat, Eastern Small-footed Myotis (Endangered)

Plants:

Butternut Tree (Endangered)

You can help SAR by reporting them to the Ministry of Natural Resources and Forestry (MNR):

www.ontario.ca/page/report-rare-species-animals-and-plants

Midhurst (Huron) District MNR office: 705-725-7500

For more information:

Ontario government SAR main web page

www.ontario.ca/page/species-risk

Provincial Endangered Species Act

www.ontario.ca/laws/statute/07e06

Federal government SAR main web page

www.ec.gc.ca/nature/default.asp?lang=En&n=FB5A4CA8-1

Federal Species At Risk Act

www.ec.gc.ca/alef-ewe/default.asp?lang=en&n=ED2FFC37-1

Reptiles At Risk On The Road

www.reptilesatrisk.org



Butternut

Shoreline Phenomena



Water Brains / Bryozoans / Moss Animals

Jelly-like or moss-like blobs are often found underwater attached to docks, tree branches or other hard surfaces. These are colonies of tiny creatures called bryozoans or Water Brains. These animals are filter feeders that remove algae and bacteria like *E. coli* from the water, and are an important component of the aquatic food web as a food source for snails, worms, crayfish and insect larvae. A developed Water Brain colony indicates good water quality.

For more information: www.severnsound.ca/Pages/Bryozoa.aspx

Mayflies / Shadflies / Fishflies

Mayflies clinging to walls and windows of shoreline buildings are a sign of a healthy ecosystem. They begin life in the water, living in the soft sediment of lake bottoms for several years before developing into terrestrial adults. The winged adults have no mouth-parts, so they do not eat or bite - they mate and die soon after emerging from the water. Mayflies are an important food source fish and birds, and indicate well-oxygenated sediments.



For more information: www.severnsound.ca/Pages/Mayflies.aspx



Foam on the Water

Foam on the surface of the water in Severn Sound is generally a natural occurrence. Organic compounds present in water, such as those naturally produced by decomposing algae and aquatic plants, can create foam bubbles when wind and waves stir up the water. Foam can wash up on the shoreline, accumulate in sheltered areas, or be seen floating in long bands on the open water on windy days.

For more information: www.severnsound.ca/Pages/Foam.aspx

Floating Pollen

During spring and early summer, it is common to see a yellow film on the water along shorelines and in sheltered bays in the Township. It is pollen from pine trees and other high pollen-producing trees that has drifted onto the water, and is a common phenomenon in areas with a large amount of forest cover. The pollen may accumulate along shorelines, form clumps, or become waterlogged and sink to the lake bottom. It is often mistaken for cyanobacteria, which has a distinct blue-green colour and is more common in late summer.



For more information: www.severnsound.ca/Pages/Pollen.aspx

Water Quality

During the ice-free season, the Severn Sound Environmental Association monitors water quality at stations throughout Severn Sound in an effort to detect long-term changes. There are several sampling locations in coastal areas off the Township of Tay, such as Hogg Bay and Sturgeon Bay.

At each location, a range of physical variables are measured, such as water clarity, temperature, dissolved oxygen, and conductivity. Chemistry samples are sent to a laboratory for analysis of nutrients such as phosphorus and nitrogen, and samples of algae and zooplankton are collected.

Overall, water quality in Severn Sound has improved since monitoring began in the early 1970s. Through the Severn Sound Remedial Action Plan, hundreds of projects were implemented that reduced nutrient loading in the watershed, and there has been a corresponding decrease in the amount of algae in Severn Sound as a result. Continued monitoring is essential in order to understand the effect of multiple stressors such as climate change, water levels, land use practices and invasive species, which continue to impact water quality through warmer temperatures and the shifting balance and availability of nutrients.

For more information: www.severnsound.ca/programs-projects/monitoring/open-water and www.severnsound.ca/resources/reports-publications (report on Sturgeon Bay)

Become a ShoreWatch Volunteer

ShoreWatch volunteers supply data and information to the Severn Sound Environmental Association (SSEA) to help monitor water quality along the shoreline in Severn Sound. Typical observations include ice on/off dates, air/water temperature, water colour, odour and clarity, particles floating in or on the water, and algae growing along the shore. To participate, or for more information, contact the SSEA at 705-527-5166.



About the Severn Sound Environmental Association

The SSEA was founded in 1997 to support the completion of the Severn Sound Remedial Action Plan and to provide a local, community-based environmental office in the Severn Sound area. The SSEA is a Joint Service Board under the Municipal Act (Section 202), a partnership between the Township of Tay and the other eight municipalities in the Severn Sound Watershed. The SSEA also receives support from the federal and provincial governments.

The SSEA's mission is to sustain environmental quality and ensure ongoing protection of Severn Sound and its tributaries through wise stewardship - keeping water clean so it supports healthy terrestrial and aquatic ecosystems.

For more information: www.severnsound.ca or 705-527-5166

© Severn Sound Environmental Association, 2015.

Photos in this guide are the property of Severn Sound Environmental Association.

