



Lake Simcoe

The Lake Simcoe Protection Plan

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Introduction

The Lake Simcoe watershed has been placed under significant development pressures and will continue to be impacted by anthropogenic advances as growth occurs in the connecting municipalities. The lake and its watershed components are an essential part of the broader natural environment and are indispensable resources for the surrounding communities (The Government of Ontario, Lake Simcoe Protection Act, 2008). The Lake Simcoe Protection Act (LSPA) was put into place to mitigate detrimental effects on Lake Simcoe's health (The Government of Ontario, Lake Simcoe Protection Act, 2008). This act imposes numerous complimentary plans that are implemented to conserve and reestablish the ecological integrity of the watershed (The Government of Ontario, Lake Simcoe Protection Act, 2008). As part of these enforced undertakings, the Lake Simcoe Protection Plan (LSPP) was put into place to identify key natural heritage features and define targets, indicators and policies to achieve the end goal of the LSPA. The following will define the ecosystem features of the Lake Simcoe watershed. The Lake Simcoe Protection Plan will be articulated and an analysis of its components will be undertaken to determine where improvement is needed.

Ecosystem Features

The Watershed

The Lake Simcoe watershed covers approximately 3,400 square kilometers and holds 18 major rivers, with an additional 4,225 linear kilometers of creeks, streams and tributaries that feed into the central water body (The Government of Ontario, Protecting Lake Simcoe, 2016; Lake Simcoe Region Conservation Authority, 2016). The watershed crosses over 23 municipal boundaries and hosts a population of over 435,000 individuals (The Government of Ontario, Protecting Lake Simcoe, 2016; Environmental Commissioner of Ontario, 2009). Approximately one eighth of the residents within the Lake Simcoe watershed are seasonal visitors who come to the area to recreate (Environmental Commissioner of Ontario, 2009).

According to *Our Watershed* by the Lake Simcoe Region Conservation Authority (LSRCA) (2016), the major communities found within the watershed include Barrie, Orillia, Keswick, Newmarket and Aurora. The York and Durham Regions, as well as the Kawartha Lakes and Simcoe Country rest within the Lake Simcoe watershed. Furthermore, the Greenbelt covers a major part of the southern watershed area and acts as a connection to Lake Ontario and the communities of Toronto and Hamilton. All of such anthropogenic administrative boundaries as well as the related plans and acts have an effect on the watershed. The Lake Simcoe Protection Plan is one of the more influential of these enforcement tools and will be the primary focus of the following paper.

The Lake and Land

Lake Simcoe's surface ranges approximately 733 square kilometers and covers roughly 20 percent of the total watershed area (Lake Simcoe Region Conservation Authority, 2016). This water body provides clean drinking water for numerous surrounding communities.

As discussed in *The Naked Truth* (Chabot, et al., 2006), the southern lands in the watershed host deep fertile soils that are prime for agriculture while the northern lands contain thin sterile soils that rest upon limestone, shale and granite sub surfacing. The watershed is framed by the Oak Ridges Moraine in the south and the Oro Moraine in the north (Lake Simcoe Region Conservation Authority, 2016).

The areas land uses have drastically altered over the past decade causing noticeable decreases in agricultural and natural heritage lands. *The Naked Truth* (Chabot, et al., 2006) alongside *Our Watershed* by LSRCA (2016) states that approximately 13% of the watershed is wetlands, 12% is urban spaces, 36% is agricultural, 13% is forests or woodlots and the remaining 26% is scrublands.

The Flora and Fauna

Typical terrestrial flora includes species of Ash, Maple and Willow with threatened vegetation such as the Butternut being avidly protected. The watershed has been drastically effected by invasive flora such as the Eurasian Watermilfoil, Giant Hogweed, European Buckthorn, Norway Maple, Dog-strangling Vine and Garlic Mustard (The Government of Ontario, 2008).

The common terrestrial fauna includes species such as the White-tailed Deer, Raccoon, Skunk and Brown Squirrel. Human burdens on the Lake Simcoe area have caused over 33 fauna species to be considered at risk including the Red Shouldered Hawk, Jefferson Salamander, Southern Flying Squirrel and Hog-nosed Snake (Lake Simcoe Region Conservation Authority, 2016).

According to *Protecting Lake Simcoe* by the Government of Ontario (2016) and *Our Watershed* by LSRCA (2016) the lake hosts roughly 50 species of fish and over 75 living in the greater watershed area. These reports alongside *The Naked Truth* (Chabot, et al., 2006) state that some of the common species include Yellow Perch, Whitefish, Walleye, Pike, Bass, Black Crappie and Lake Trout. The *Lake Simcoe Protection Plan* (The Government of Ontario, 2008) and *The Minister's Five Year Report on Lake Simcoe* (2016) states that invasive aquatic species such as the Zebra Mussel, Rusty Crayfish, Spiny Water Flea and Round Goby have been introduced into the watershed.

The Lake Simcoe Protection Plan

The Objective

The Lake Simcoe Protection Plan was put into place to protect, improve and restore key hydrologic and natural heritage features and their functions within the Lake Simcoe Watershed while achieving the following outcomes (The Government of Ontario, 2008).

- Restore self-sustaining fish communities
- Reduce nutrient and pollutant loads
- Reduce and prevent impacts of invasive species
- Improve adaptiveness to climate change
- Monitor and research ecological health
- Promote environmentally sustainable development, activities, recreation, as well as land and water usage
- Build on alternate protection plans related to the watershed
- Pursue every component of the LSPP possible

The LSPP takes precedent over other acts and plans if conflicts arise, unless another document provides greater protection for the ecological integrity of the lake and its components (The Government of Ontario, Lake Simcoe Protection Act, 2008).

The Life

The LSPP by the Government of Ontario (2008) states that the development of fish communities and the prevention of new invasive species into the Lake Simcoe watershed is one its primary objectives. The

document looks at these objectives specific to the Lake Simcoe watershed and any adjacent areas which may impact existing fauna and introduce new species. Such objectives are used to inform policies that will positively impact land use planning and management to mitigate negative outcomes related to aquatic and terrestrial life.

The Water

The enhancement of water quality, mitigation of quality impairment, provision of water supply for ecosystem usage and restriction of human water consumption are all essential components of the LSPP. The policies implemented by the plan aim to conserve and use water more efficiently, while imposing stricter controls on sewage treatment, storm water management, septic, construction and agricultural activities (The Government of Ontario, 2008). Furthermore, it aims to enforce a reduction of phosphorous loads throughout the watershed.

The Nature

The protection, enhancement and restoration of the shoreline, key natural heritage features and hydrologic components of the watershed are other essential parts of the LSPP. The plan attempts to avoid overlap with the Greenbelt Plan and Oak Ridges Moraine Conservation Plan (ORMCP) (The Government of Ontario, 2008). The LSPP implements policies associated with aquatic and terrestrial habitat regulation. Furthermore, these policies regulate the activities and components of the most critical natural heritage and hydrologic found within the watershed while also looking at areas of concern (The Government of Ontario, 2008).

The Support

In conjunction with numerous other plans, the LSPP provides regulatory devices that relate to matters of recreational and tourism practices, as well as climate change outcomes. The policies set out within the plan aim to regulate the linkages and directionality for protecting and developing recreation and tourism within the Lake Simcoe watershed (The Government of Ontario, 2008). The plan provides devices to control land uses and development related to these community support systems. Furthermore, the LSPP policies also build off the previously defined Province's Climate Change Action Plan to provide a more thorough response to climate change within the watershed area (The Government of Ontario, 2008).

Opinions and Perspectives

The Positives

The Lake Simcoe Protection Plan has been able to effectively alter actions that may have subsequent impacts on the watershed's ecological systems. One of the strongest movements created by this plan was the prohibition and regulation of activities that may adversely affect important hydrologic components within the watershed (Environmental Commissioner of Ontario, 2009). The LSPP has also achieved an outstanding cohesion with other plans such as the ORMCP and the Greenbelt Plan.

Succeeding objectives within this plan attempt to reverse negative ecological historical influences. Positively, the plan has achieved many milestones in relation to these undertakings. There has been a reduction of phosphorous levels found in the lake, an increase of deep water oxygen and continuing recovery of aquatic animals and native fish (The Government of Ontario, Protecting Lake Simcoe, 2016). Obviously other factors may have been in place to encourage these changes. However, it is evident that the LSPP has in fact played a key role in these positive outcomes. Post-implementation evaluations are

continually being undertaken by the Lake Simcoe Region Conservation Authority (LSRCA) to see if desired objectives are being met.

The Negatives

Even with the LSPP being enforced, there are still numerous problems that continue to negatively impact the watershed's ecological integrity regardless of the plans mitigation objectives. Things such as population growth, excessive agricultural practices, chloride road salts and runoff, as well as reduction and deterioration of wildlife habitat are continuing issues that haven't been properly considered by this plan (The Government of Ontario, Protecting Lake Simcoe, 2016). Moreover, regulatory devices such as pollutant reduction credits negate the LSPP objectives and provide loopholes for individuals to work the system to their advantage. These ongoing negative impacts show that the plan has holes in its system that must be mended and that the plan is not being enforced as strongly as intended.

In addition to this, the plan also seems to view the watershed components as separate entities which do not interact with one another. An ecosystem is a complicated mechanism which requires intricate relationships between its different features. When you impact one you change the others. Such relationships have not been considered extensively within the plan and the regulatory policies are not as effective due to this oversight.

Another primary concern towards the Lake Simcoe Protection Plan is that it only acts as a reactionary planning tool to regulate issues on a specific basis rather than creating proactive implementation strategies (Environmental Commissioner of Ontario, 2009). It could be argued that the lake needs to heal before it should be protected from potential future harms. However, the healing of the watershed cannot truly be impactful until mitigation of further damage has been created.

The Suggestions

When a plan is put into place to create positive ecological change it is hypocritical and biased to continually ignore the loopholes that can be found within the system. The LSPP is one of such tools that showcases potential to improve on these flaws by appropriately filling gaps in its policies and enforcing its regulatory devices to achieve its objectives.

It would also be beneficial for the plan to consider the ecosystem as a sum of its parts rather than its components as separate entities. Further insight into how these relationships work would provide a stronger basis for development of regulatory policies and would create more influential outcomes.

Additionally, proactive undertakings must be created for the government to effectively mitigate the issues that are brought up throughout the LSPP. Natural features found within the Lake Simcoe watershed should act as a guiding point for producing planning systems that sufficiently weight environmental impacts and provide planning authorities with the necessary power to restrict action that is ecologically inappropriate (Environmental Commissioner of Ontario, 2009). Even though the LSPP does in fact hold some of this authority, such planning action has seemingly been sidestepped time after time to accommodate for undertakings that do not appropriately consider the impacts they have on the lake and its components. If this planning device maintains its reactionary trends, then the issues that the watershed is facing will continue to affect the lake and will never truly be dealt with.

Conclusion

The Lake Simcoe watershed is host to key ecological features that help sustain nature and human life alike. With the implementation of the Lake Simcoe Protection Plan, the watershed region has some hope of maintaining its ecological integrity to provide for all components within the area. However, the plan and its policies will need to be thoroughly reviewed and changed before it can become an appropriate biocentric regulatory device. The plan must provide strict and impactful policy that does not allow for side stepping of its regulations. The policies must also consider the intricate interactions between ecosystem components while developing in a way that is proactive instead of reactionary. Until such changes are made, the plan and its policies may not truly provide the positive outcomes that are desired from its implementation.

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