BLACKSTONE LAKE PLAN - DISCUSSION DRAFT

RECOMMENDATIONS AND ALTERNATIVE ACTION PLANS ARE ONES TYPICALLY IDENTIFIED IN LAKE PLANS AFTER SURVEYS , CONSULTATIONS, WORKSHOPS ETC. THOSE DESCRIBED HERE ARE ONES WE THINK MIGHT APPLY TO BLACKSTONE BUT ARE SUGGESTIONS ONLY UNTIL VETTED AND APPROVED BY OUR MEMBERS.

SOME MAY BE TOO AGGRESSIVE, SOME MAY NOT BE ENTIRELY APPLICABLE AND OTHERS MAY BE WISHFUL THINKING. MAYBE WE'VE MISSED SOMETHING.

LOOKING FOR ANY THOUGHTS, SUGGESTIONS OR CONCERNS YOU MAY HAVE.

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The Blackstone Lake and Area Management Plan

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1 INTRODUCTION

1.1 THE PURPOSE OF A LAKE & AREA MANAGEMENT PLAN

The purpose of a Lake & Area Management Plan is to recognize and protect the unique character of a watershed and the lake or lakes contained therein. Ways to ensure the long-term protection, maintenance and restoration of natural, social and physical features are recommended.

Lake Planning is a community –based process that considers the interests of all stakeholders with the watershed surrounding a particular lake. These stakeholders include the shoreline owners and residents, any commercial operators, private and crown land managers and lake users.

1.2 BLACKSTONE LAKE & SURROUNDING AREA

The Blackstone Lake watershed occupies a unique location in Central Ontario. Readily accessible by major highway but far enough from it to be relatively secluded with limited water access. Blackstone Lake is located in the Township of the Archipelago, Ontario, 15 km south of Parry Sound, 8 km west of Highway 400 and 10 km east of Massassauga Provincial Park. Blackstone Lake is labeled on the official Ontario Road Map (n-250).

Blackstone is a clean body of water , about 5 km by 3km, with 35 km of shoreline, 40% of which is crown land. Containing nine islands, the lake covers 515.6 hectares, approximately 2 square miles. The lake is relatively contained with navigable river access to Crane Lake as well. The maximum depth of the lake is 58 meters. Blackstone is a lake populated primarily by seasonal cottagers. There is only one commercial enterprise on the lake and Angler's Inn has been tremendously supportive of lake stewardship efforts. Similarly there are only a handful of year round residents.

To quote from Section 10.37 of the official TOA plan:

> Blackstone Lake is an inland lake neighbourhood with a number of important qualities. The lake is characterized by high water quality, moderate densities of development and low boat traffic. The lake is an important sports fishery maintained by the Ministry of Natural Resources for lake trout, small mouth bass, large mouth bass, pickerel, muskelunge, northern pike, and ciscoe. In order to maintain the high quality environment and the character of the neighbourhood, further development will be discouraged in the Blackstone Lake Neighbourhood. The Ministry of Natural resources has identified a limited capacity for new development on Blackstone Lake in order to sustain the cold water fishery. Only limited new development can be supported on the lake.

Based on existing zoning and bylaws, Blackstone lots could potentially increase by as much as 1/3. ie. There is "capacity" to grow from 125 occupied lots to about 165 if every "opportunity" were taken.

1.3 THE BLACKSTONE LAKE & AREA MANAGEMENT PLAN

The Blackstone Lake and Area Management Plan focuses primarily on Blackstone Lake, but also addresses immediately adjacent lands and surrounding lakes. Surrounding lakes include Forget Lake and Third Lake to the north, Oldfield Lake to the south, Oak Lake to the East and Traves Lake and McEachren Lake to the west, as well as linking waterways.

Section 2 of the Blackstone Lake & Area Plan describes a series of principles and targets that are important in order to ensure the health and sustainability of our lakes, streams and rives for future generations. These in turn lead, in later sections of the Plan, to the identification of a series of issues, options and recommended actions.

Sections 3 through 5 of the Plan provide a general description of the Blackstone Lake area and identify the significant natural, physical and social characteristics that make our lake and the surrounding watershed desirable places to live, work or visit. A key influence is the well established 'cottage owners community' which brings with it a rich history of concern for the lake and an array of aspirations and expectations.

Section 6 deals with land-use planning, current or potential 'public use' lands and the regulatory aspects of zoning and waste disposal. In Section 7, the Plan attempts to consolidate and summarize the information in the preceding sections into a coherent set of issues and recommended actions. We have identified 8 broad priorities that are specifically applicable to Blackstone, plus a few topics that may not be directly applicable but need monitoring just in case.

Subject to stakeholder agreement and approval, some of the recommended actions will be presented to the Township of the Archipelago with regard to enhancing land-use policies and tools to protect the special features of the Blackstone environment. However, the majority of recommended actions are for everyone to consider because they are focused on Stewardship and Education actions designed to protect the area's superb quality of life.

1.4 WHAT THE BLACKSTONE LAKE AND AREA PLAN IS NOT

Every effort has been made by the Blackstone Lake Plan Steering Committee to ensure that the production of this document is NOT a self-serving exercise to advance the special interests of those lucky enough to already own a cottage on Blackstone Lake. Indeed, there are divergent interests amongst cottage-owners themselves. Instead, the community of cottage owners has tried to rise above any special interests and consider the broader issues that impact the natural environment and the overall health of the local ecosystem. In this effort they have been aided by a wide array of stakeholders that includes local businesses, all levels of government, and others who visit the region for a variety of recreational opportunities.

There has been some tremendous work done in recent years on building our community capacity to respond to fire and health emergencies. While this too is an important element of overall stewardship, we have excluded detailed reporting in this "Lake Plan" document. We may well choose to add such information to the final document.

1.5 HOW THE BLACKSTONE LAKE AND AREA PLAN WAS DEVELOPED

The Blackstone Lake Cottagers Association (BLAC) has a well established tradition of lake stewardship and focus on maintaining the ecosystem we have had the privilege of enjoying all these years.

Back in the early eighties, just after the Township was formed, Dave Harvey, then president of the newly formed BLAC, convinced us all to put up the money to hire a consultant to examine all the septic systems on the lake because neither the township nor the province would do it! The two Selover brothers from Ohio, Peter and Ted, who have an old family cottage on one of the islands, rigged up a device they called the Molsometer (you can imagine what the container was) to take samples of water to test for acidity. Consider too the number of people on the lake that have purchased fire pumps and who have risen to the occasion a number of times including 7 pumps on one cottage fire at 2 a.m. in the morning. Actually, the greatest danger to the participants was the possibility of being drowned by the water pouring in all directions. Health safety too has been a community focus. Tom Hewitt was telling the story the other day about the time Doc Goldberg sewed up Darcey Coon on the dock after he fell over the end of his boat with the motor running. More recently we have focused on CPR and defibrillator training.

In the summer of 2005, BLAC initiated discussion of the need for a Lake Plan as an essential tool and framework for ongoing stewardship.

A mini-survey was conducted in 2007, and an initial meeting held of potential steering committee members in late 2007. Based on the professional experience of several of cottagers, the considerable work done by other nearby cottage associations on this topic and the somewhat more homogeneous nature of lake stakeholders, it was decided that a full 'bottom-up' consultation process might not be necessary and that stakeholder discussion might be most fruitful if people had 'something to react to'. In 2008, it was agreed that a small group would work on such a discussion document, perhaps concurrent with an expanded survey. Both would be available in early 2009. This has been done. For the moment, we have decided against a detailed survey, although we have one ready to go should we collectively decide to do so.

If you are reading this, you are being consulted on the first draft. We imagine an iterative process, adding more Blackstone specific content and updating the document for feedback from all stakeholders. It is hoped that after allowing 10 months for feedback, a final document might be ready for endorsement by BLAC and others by the 2010 Annual General Meeting.

1.6 SPONSORS AND SUPPORTERS OF THE PLANNING PROCESS

The Blackstone Lake & Area Management Plan was developed with the support of the local cottagers associations who provided volunteer support. Significant in-kind support was provided by the MNR and TOA staff.

Mapping was obtained free of charge from the Ontario Ministry of Natural Resources(MNR) under the terms of an Interim Data Sharing Agreement and customized for the Lake Plan. We acknowledge the support of the MNR's Geographic Information Branch with thanks **.**

1.7 SOURCES OF PUBLISHED INFORMATION

A list of references is provided at the end of this document. Many individuals, businesses, not-for-profits and government organizations provided both encouragement and valuable information regarding one or more aspects of the Lake Planning exercise. They included:

- The Township of the Archipelago
- The Township of Seguin
- The Ontario Ministry of Natural Resources
- The Ontario Provincial Police (Marine Unit)
- Fisheries and Oceans Canada
- The Georgian Bay Land Trust
- The Georgian Bay Association
- Georgian Bay Forever (formerly Georgian Bay Association Foundation)
- Nature Conservancy of Canada
-

1.8 THE LAKE PLAN IS JUST THE BEGINNING

Lake Planning is a process and so the production a Blackstone Lake & Area Management Plan is only the first step in an on-going community effort to maintain and enhance the natural, social and physical environment that is the Blackstone experience.

1.9 DISCLAIMER

The maps and figures presented in this document are for reference purposes only. No representation is made or warranty given as to the accuracy or completeness of any content. The user assumes all risks of use. Neither the Lake Planning Steering Committee (when there formally is one) nor BLAC nor BERA assumes responsibility for any loss resulting from such use. Maps are produced by the Steering Committee based on data provided under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2008.

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2 VALUES, VISION & PRINCIPLES

2.1 COMMUNITY VALUES

The purpose of this Lake Plan is to identify, protect and improve the important natural, physical and social values and characteristics of Blackstone Lake and area.

The planning process and the execution of the Plan are designed to find common ground for the diversity of needs and interests that exist among those who have a stake in, and an impact on, the continuing health of Blackstone Lake. The Plan will also assist the various stakeholders, including the appropriate levels of government, in determining land use policies that will protect the special properties of the lake that attracted many of us to Blackstone Lake in the first place.

The Lake Plan is a cornerstone to protecting what we, in common *value*. More than anything else, the vast majority of our community values the preservation and improvement of the natural environment. This is almost unanimous at present, but might be less so for any landowner contemplating an exit strategy.

Our mini-survey and ongoing discussions have determined there is a strong consensus with regard to the things that people value. We will need to decide whether more detailed surveying will be need to provide a quantitative basis for certain of our recommendations.

2.2 VISION FOR THE FUTURE

Three questions influenced the development of the Lake Plan:
What will Blackstone Lake look like 50 years from now?
What do we value sufficiently that we feel it is worth protecting?
How can we ensure that future generations will be able to enjoy what we have today?

The answers to these questions led to the following vision statement:

Figure xx Vision Statement

Our Community Envisions Blackstone Lake and area to be a place where:

The beauty of the landscape, the tranquility of the surroundings and the quality of the water are protected and preserved;

Precedence is given to activities that maintain the natural and social qualities of the lake over activities that have the potential to degrade environmental sustainability;

A healthy, viable cottage community is fostered

Wildlife, fish and plant habitat are safeguarded;

The lake is a shared experience, where respect and dignity are shown to others and expected in return;

Our community balances the needs of those that desire tranquility with the needs of recreational users; and

The community is actively involved in stewardship ; and promotes education as a way to ensure respect for their neighbours and the law.

2.3 GUIDING PRINCIPLES

A set of guiding principles was established to focus the Lake Plan on several key values and start the process of making the Vision a reality.

Protect Lake Character
The natural, social and historic character of the lake is to be protected, enhanced and, if necessary, rehabilitated.

Focus on Results
The Plan will focus on realistic actions to achieve results that respond to high priority issues.

Implementation
Implementation of the Plan will favour stewardship and educational approaches with voluntary compliance over legislation and regulation.

>>>>>

Water Quality

Fish & Wildlife

Shorelines

Trees & Vistas

Development

Character

Access

Community life

Typical implications of the guiding principles for each key element are as follows:

Water Quality – That the water of Blackstone lake not contain contaminants in excess of the natural historic levels (ie. The level of contaminants that would occur in nature prior to human habitation) nor in excess of current officially regulated standards;

Water Access – That provision is made for assured docking and parking capacity for water access cottagers. Ideally we marina facilities would remain available within reasonable proximity.

Fish and wildlife – That Blackstone Lake and area support a sustainable fish population including optimum habitat for sports fish and maintain stability in the bio-diversity of wildlife species and their habitat. That the further introduction of "invading species" such as zebra mussels be prevent;

Natural shorelines – That the protection and rehabilitation of the lake shoreline and river banks, described as the "ribbon of life" that supports a diverse range of fish and wildlife species, be promoted to increase the amount of natural shoreline;

Significant natural features – That significant natural features, including but not limited to wetlands and habitat for rare species, be protected from use and development.

Trees and vistas – That the natural vista from Blackstone Lake be maintained and that the building and structures have a minimal impact on the natural appearance of the shoreline and on the viewscape from the lake;

Economic and property development- That a cooperative working relationship exists between residential, recreational and commercial members of the community to ensure that any proposed development and activities respect the environment and character of the area, as well as maintain property values;

Historical , cultural and natural character – That the historical, cultural and natural character of the lake area is recognized, protected and restored, where appropriate; and

Community life – That a range of volunteer support services (such as fire prevention and shared medical emergency programs), as well as social and recreational activities are promoted consistent with the natural character of the lake, thereby preserving the health and ambience of Blackstone Lake, and fostering a sense of community.

2.4 PERSONAL AND COLLECTIVE ACCOUNTABILITIES

To protect the things we value and to achieve our vision, we all have important roles to play, both as individuals and as a community:

Cottagers have an obligation to protect the natural environment and demonstrate those community values which will help the community to realize its Vision;

BLAC and BERA need to joint together to work on overall stewardship matters, monitor changes and respond promptly to environmental and social needs;

Commercial Operators and Land Owners need to respect the environment and the desires of the community to ensure that any further commercial development, construction, and change to the environment is respectful of the community's stated values and vision;

Government organizations need to listen to the community, respond to its needs and protect the environment as a public trust;

Recreational Users, Visitors, Landlords & Renters need to be aware of, and encourage to act in accord with the values of the community; and finally

All of us need to be open to learning how best to be good stewards of Blackstone Lake and Area and to be willing to coach, mentor and train young people to be the future custodians of this wonderful resource.

3 LAKE DESCRIPTION & PHYSICAL ELEMENTS

3.1 CLIMATE

Blackstone Lake is located in Humid Cool Temperature Ecoclimatic Region, experiencing cold winters and generally warm summers. However, the proximity of Georgian Bay has a significant impact on weather. Compared with areas to the east and north snowfalls are higher, but winters are a bit warmer and summers cooler, thanks to the moderating effect of Georgian Bay. High snowfall helps protect plants and some animals from cold temperatures and may play a role in the continued existence of

some rare reptile species (see below). The climate is largely responsible for the lake area's relative lack of boreal trees such as white spruce and jack pine, which may be found more commonly further east in Algonquin Park or just to the north. The prevalence of rock outcrops affects microclimates, as rocks become heated during the day and retain heat at night. This may support the survival of some cold-blooded reptiles and amphibians during the spring and fall, when temperatures would otherwise be too cool.

3.2 BEDROCK GEOLOGY

The lake is located in the Grenville Province of the Canadian Shield. The Grenville Province, formed 1.3 to 1.1 billion years ago, is further sub-divided into the Central Gneiss Belt, on which Blackstone Lake is situated, and the Central Metasedimentary Belt, located further east.

Bedrock in this Central Gneiss Belt was created more than 1.1 billion years ago when two crustal plates collided, resulting in an era of mountain building known as the Grenville Orogen. Mountains were created as existing rocks buckled and folded. This process was similar to what is happening today as the Indian sub-continent collides with Asia, creating the Himalayan Mountains. The rocks now exposed at the surface of the Blackstone Lake area were formed during the mountain-building process when existing sedimentary rock was re-heated, melted and crystalized under tremendous pressure at a depth of 25 to 30 kilometers below the earth's surface. Temperature reached 750º Celsius. Over time erosion – involving both leveling of the mountains and a long period of crustal uplift – removed the overlying rock, exposing the bedrock we see around us today.

At various times magma was intruded into this rock during episodes of faulting and volcanic activity. Black Rock in Lawson's Bay is an example of such an intrusion. These intrusions affected surrounding rocks, causing minerals to crystallize, and may be responsible for some of the mineral deposits found in the area.

3.3 SURFACE GEOLOGY

The present form of the land can be attributed partly to erosion of the bedrock over the course of a billion years. However, the primary influence is considered to have been recurrent glaciation starting about 2.5 million years ago and ending about 11,500 years ago.

Glaciers ground down and smoothed bedrock, and carried off loose rock when they expanded; when glaciers receded huge quantities of flowing meltwater caused erosion, while the glaciers themselves and associated lakes and rivers left behind deposits of sand, gravel and clay.

The most recent period of glaciation, termed the Wisconsinian, ended 15,000 to 10,000 years ago. In the Georgian Bay area the Wisconsonian glacier was about 1,500 metres thick. As the glacier melted a series of lakes were created. One of these, glacial Lake Algonquin, covered the Blackstone Lake area for a time. Further melting opened a

channel and allowed water to flow away to the northeast, via what we now know as the Mattawa and Ottawa rivers. Water levels dropped, creating a series of glacial lakes. The present configuration of Blackstone Lake probably became recognizable about 8,000 yeas ago. About 2,000 years ago the Great Lakes reached their current water levels, as the earth's crust rebounded from the weight of more than a kilometre of ice.

Today a portion of the land around the lake, especially the ridges, is bare bedrock with only thin and discontinuous soils. The largest portion of the land around the lake has a significant amount of exposed bedrock with a partial (under 50%) cover of glacial till less than 1 metre thick. There are some areas where there are deeper soils left behind by glaciers, their meltwaters, and the glacial lakes described above. These include silt and clay, and deposits of sand and gravel. The largest area of this deeper soil is the land between the main part of the lake and McRobert's Bay (the former Tolpt farm). Sand deposits are exposed where pits have been created along the Blackstone – Crane Lake Road near the Tolpt Road. There are also pockets of organic soil formed in wetlands (swamps, marshes or bogs) around the lake.

An abandoned mica mine is located east of Lawson's Bay. This has not been actively mined for many years and is likely not commercially viable.

Along the Blackstone – Crane Lake Road and Joe Koran Road there are a number of small private and public borrow pits from which small amounts of sand are removed. These are distant from the lake and unlikely to have any appreciable effects on water quality.

What are the implications of the lake's geology for cottagers? There are several:

- The bedrock, and soils derived from the bedrock, are generally acidic. Consequently the lake's water is somewhat acidic and the lake is vulnerable to the effects of acid rain. This is not the concern it was 20 years ago, but the vulnerability is real.

- Lack of soil cover, and the steep slopes found along much of the lake's shoreline, together have the potential to exacerbate the impacts of infrastructure development. It is difficult to construct septic systems that comply with building code requirements. Any spills or contaminants, such as chemical pesticides or fertilizers, are likely to leach almost immediately into the lake in most locations, with potential deleterious effects on water quality.

- A unique combination of climate, soil and moisture regime has created conditions suitable for a number of significant natural features, which are discussed below.

3.4 **THE LAKE**

Blackstone Lake is in one of several small, independent watersheds that flow into Georgian Bay. The head of the watershed is east of Highway 400 where a number of smaller lakes and streams contribute water to Horseshoe Lake. The Blackstone River flows southeast from Horseshoe Lake, under highways 400 and 69, through First, Second and Third lakes into Blackstone Lake. Forget (Portage) Lake also flows into Blackstone Lake from the northwest; Oak Lake from the east; Oldfield Lake from the south, and some other small lakes and bogs from various quarters.

Water flows out of Blackstone Stone via the Blackstone River through Crane Lake and Little Blackstone, entering Georgian Bay at Blackstone Harbour in The Massasauga Provincial Park.

Blackstone Lake has a surface area of 516 hectares (1274 acres) and a mean depth of 20.1 metres (66 feet). The lake's maximum depth is 58 metres (XX feet). The total volume of water is estimated to be XX cubic metres (84,025 acre-feet). The lake is characterized by large areas of open water; compared with other area lakes such as Crane, Otter and Healey the lake is broad relative to its length. There are some wetlands that, while small in total area, are of high quality and critical to functioning of the lake ecosystem (see below).

Ecologists have developed a classification system for freshwater lakes based on clarity, temperature, depth, dissolved oxygen levels, nutrient loading, and other factors. On this basis Blackstone Lake is classified as an oligotrophic lake. This means it is relatively clear, cold and deep, and has high levels of dissolved oxygen and low nutrient levels. It also means the lake has a low level of biological productivity – it does not grow a lot of plants or animals. However, it is suitable for coldwater fish, including lake trout. Oligotrophic lakes are relatively rare and are highly valued as cottage environments and as cold water fisheries. Blackstone Lake is a particularly good example of an oligotrophic lake because it is deeper than most lakes and not heavily developed.

Nutrient loading is the primary threat to oligotrophic lakes. Nutrients such as phosphorus and nitrogen in various forms have the potential to encourage growth of algae and other microscopic plant life. When they decay these plants deplete oxygen, especially when they sink to the bottom in deep water, and they also provide food for microorganisms. The algae and microorganisms together impair water clarity and prevent sunlight from reaching deep water. They also cover rocks and gravels that serve as spawning areas for fish. Nutrient loading can harm an oligotrophic lake, making it inhospitable to cold water fish species and less desirable for cottage activities.

What are nutrient levels and water clarity like in Blackstone Lake? Provincial Water Quality Objectives call for total phosphorus levels below 10 grams per litre to protect aesthetic values and below 20 grams per litre to avoid nuisance concentrations of algae. Limited testing has been done, but the Blackstone Lake Association has participated in the Lake Partners program sponsored by the Ministry of the

Environment. Under this program total phosphorous and water clarity are measured annually. For the 2000 to 2006 period Blackstone test results for total phosphorous have generally been in the range of 3.3 to 7.8 grams per litre (with the exception of a few anomalous test results, which may not be representative). Clarity tests are undertaken using a Secchi Disk lowered below the water's surface until it is no longer visible. Results have ranged from 3.9 to 6.0 metres. Thus, limited testing has shown Blackstone to have relatively low phosphorous levels and a high degree of water clarity. Our collective thanks to Valerie and Digby Sale, who are once again volunteering on water sampling this year. The results are comparable to those found in the open waters of Georgian Bay and somewhat better than other lakes in the area and narrow bays within Georgian Bay.

The most recent independent testing was conducted by Dr Karl Schiefer, Principal Ecologist for the Township of the Archipelago ("TOA") in September 2008. The print report was issued in March 2009 and is available on the township website. Water quality measures were good relative to other lakes, but it is especially worth noting that this study also offered a cautionary note and concluded that :

1. The water quality of Blackstone Lake should be protected as a township priority.
2. That no further (new) building lots be created
3. Any further development should be based on a comprehensive long-term vision of the ecosystem, landscape and human environmental factors to be protected on the lake.
4. Those residing on the lake should be directly involved in developing this vision through a Lake Plan or Community Plan process.

In association with a survey of wetland communities on the lake (see below) water quality was sampled and tested at three shallow water locations adjacent to wetlands. It was reported that the tests demonstrated "no human-induced pollution. Also as part of this study a column of water was tested to a depth of 25 metres at one deep water location. The researcher did not make qualitative statements about the results, but it is notable that dissolved oxygen levels ranged from 9 to 13 milligrams per litre up and down the water column. Lake trout and other cold water fish require levels of at least 4 milligrams per litre. While one sample is not conclusive, this is a positive indication that adequate levels dissolved oxygen may be found in Blackstone Lake. The researcher also noted that the temperature gradient and turbidity were as expected.

Bacteria levels are another indicator of water quality. While bacteria levels are not direct indicators of degree of eutrophication, levels are important indicators of water quality with respect to human health. In recognition of this importance the Township of the Archipelago has supported a Volunteer Water Quality Monitoring Program for many years. The Blackstone Lake Association has participated since the programs inception. Total coliform bacteria and E. coli bacteria are monitored annually. E. coli bacteria are particularly important because they are found only in the intestinal tracts of warm blooded animals, and some strains may pose a health risk (although some strains of E. coli are not harmful to humans).

Bacteria test results are quite variable, as bacteria levels are affected by weather conditions and other factors. As well, interpretation of test results involves a degree of subjectivity and there are opportunities for methodological inconsistency. However, Blackstone tests have consistently shown results for both total coliform and E. coli that are well below provincial standards. With the exception of 2007 E-coli levels have been less than 10 per mililitre. A comparison with Crane Lake shows that Blackstone generally has lower levels of both total coliform and E-coli. Levels are similar to those obtained by sampling in the more open waters of Georgian Bay. Notwithstanding, lake water should not be consumed by humans unless it is treated properly.

The lake has not been tested for chemical contaminants. The primary source for such contaminants would likely be powerboats and pesticides.

Implications of Blackstone Lake's characteristics are as follows:

- The lake is part of a larger watershed, not a standalone body of water. What happens upstream can affect Blackstone, and what happens in Blackstone can affect Crane Lake and the Georgian Bay, including The Massassauga Provincial Park. We have to expect others to be good neighbors and be good neighbors ourselves.

- Blackstone Lake is a gem from the perspective of water quality. This is beneficial for human users, wildlife, fish, invertebrates and plant. This high quality cannot be taken for granted. In particular nutrient loading has the potential to be deleterious to water quality. The primary source of new nutrient loading is phosphorous from human waste. Septic systems cannot eliminate phosphorous, so it is important that new residential and commercial development not exceed the lake's capacity to absorb nutrients. Another source of nutrients is use of fertilizers on adjacent lands. The Ministry of Natural Resources endeavors to limit cottage development on lake trout lakes to acceptable thresholds. Blackstone Lake has not reached this threshold yet. However, careful monitoring is necessary. Individual action to forego use of fertilizers, chemical pesticides and certain consumer products is also important. Use of four-stroke engines can minimize oil and gasoline contamination.

- Bacteria levels are well below (better than) the provincial standard but do not yet consistently meet the much more stringent target standards set by TOA. Continued vigilance is required to ensure that septic and other sewage systems comply with current standards, are operated correctly, and are inspected from time to time.

3.5 **WETLANDS**

Blackstone Lake's wetlands – areas of shallow water supporting aquatic vegetation – cover a fairly small portion of the overall surface area of the lake. However, the

wetlands have a relative importance that exceeds their limited size. Wetlands are the most biologically productive part of the lake. They play a critical role with respect to reproduction and feeding of some fish species. They support invertebrates, amphibians, reptiles, birds and mammals. Wetland vegetation produces oxygen required by fish and to some extent can filter pollutants.

There are three primary wetlands on the lake: At the north end of the lake where the Blackstone River enters from Third Lake; the northeast end of Lawson's Bay; and on the south shore where a stream from Stonehouse Lake enters. There are a number of bays that host small wetlands with aquatic vegetation, as does the Blackstone River between Blackstone and Crane Lakes. Adjacent to Blackstone a number of small lakes include wetlands.

In 2005 Dr, Patricia Chow-Fraser under took a Survey of Water Quality and Aquatic Community of Wetlands in Blackstone Lake. This survey included water sampling at the lake's three major wetlands and inventory of aquatic vegetation at the Lawson's Bay and Stonehouse wetlands. Some highlights of the survey follow:

- The water quality at the three sites was reported as "indicating no human-induced pollution" and "excellent". Using a water quality index developed by Dr. Chow-Fraser the three wetlands ranked 2nd, 3rd and 4th of 85 Lake Huron wetlands surveyed.
- "There was a very diverse community of submergent plants in the wetlands of Blackstone Lake." Three rare species were found as well as a freshwater sponge that is considered an excellent indicator of water quality.
- Using an index that considers plants as indicators of water quality the two wetlands achieved indexes of 3.82 and 4.00. It was noted that of 195 sites examined, only 5 had scores of 3.82 or higher. Thus the scores of the Blackstone wetlands "are indicative of exceptionally high quality."
- Nine fish species were caught in both wetlands. Once again, species found indicated that the wetlands had excellent water quality.

Despite the high quality and importance of the lake's wetlands, none are classified by the Ministry of Natural Resources as being "Provincially Significant Wetlands". This is primarily because they are small in size. Consquently, the lake's wetlands would not be specifically protected under the 2005 Provincial Policy Statement under the Planning Act, which makes it mandatory to protect some significant wetlands. However, the lake's wetlands are identified by MNR as "Type 1" fish habitat, the most significant classification, and would receive protection on that basis.

Implications

- Blackstone Lake has some extremely high quality wetlands, but they are not extensive and like any wetland, easily disturbed by development, adjacent land use, or deteriorating water quality.
- In order to protect fish and other wildlife, it is imperative that wetlands receive the highest level of protection. Protection of wetlands must be considered an

extremely high priority for the protection of the lake's biodiversity. Strict protection of Type 1 fish habitat will achieve a high level of protection.

3.6 **FISH**

Logging and farming attracted the first permanent settlers to the Blackstone Lake area. But prior to settlement Ontario's native people, and later the earliest cottagers, were likely attracted primarily by good fishing. In particular the lake was known for muskellunge fishing and reportedly this attribute was widely advertised. Angling remains a popular activity and fish continue to be caught by those who know where and when to find them.

MNR has documented the following species in the lake: lake trout, cisco, smallmouth bass, northern pike, yellow perch, largemouth bass, muskellunge, walleye, rainbow smelt and log perch. The wetland survey discussed above documented some additional species: blacknose shiner, pumpkinseed, golden shiner, brown bullhead, common shiner, sunfish and rockbass.

MNR has classified Blackstone as a coolwater and coldwater lake. Coldwater lakes are considered most significant because they are habitat for coldwater species such as lake trout. Across Ontario there are limited numbers of coldwater lakes. The preeminent coldwater species are lake trout (and brook or speckled trout found very infrequently); only about 2,000 of Ontario's 250,000 lakes support lake trout.

As noted above, cottage development and associated nutrient loading has the potential to deplete oxygen in coldwater lakes, threatening lake trout populations. MNR has established development capacities for most coldwater lakes, with the intent of limiting nutrient loading associated primarily with septic sytems. An MNR representative confirmed (Rob Moos personal communication with Dorothy Shaver, MNR District Planner) that Blackstone has not reached its capacity. On the other hand, Forget Lake (Portage Lake) has reached its capacity with only one cottage, because it has poorer quality coldwater habitat.

MNR has identified and mapped fish habitat for the lake and provided this data to the Township. Habitat designations are summarized by the table below.

Habitat Type	Habitat Feature	Habitat Description	General Location
1	Specialized spawning, nursery and feeding habitat, and significant food production areas for various warm water species	Significant areas of emergent and/or submergent vegetation and/or significant rock rubble substrate areas	Wetland areas and areas with rocky beds in shallow water
2	Variable; non-specialized spawning areas for bass, minnows, yellow perch, etc; nursery area for minnows and bass; feeding areas for pike, bass, minnows, etc.	Highly variable; ranging from detritus substrate to small beds of aquatic vegetation to rocky bedrock substrate	All of the shoreline that is not Type 1 or Type 4 habitat has been designated as Type 2
3	Non-productive littoral areas with minimal or negligible fish utilization	Altered shoreline with "hardened" non-productive features such as sheet steel piling	None designated on Blackstone Lake
4	Spawning area for walleye	Rock rubble and gravel substrate	At the base of the waterfall where Rat Creek enters Blackstone from Oldfield Lake

MNR endeavors to protect fish habitat by working with municipalities, the priority being to prevent disturbance of Type 1 habitat. The township Comprehensive Zoning By-law has generally applied the Environmentally Sensitive Zone to Type 1 habitat so that it is protected from development. It was noted that site inspections are required to determine if a specific development application impinges on fish habitat, because MNR's mapping is general, and there are sometimes gaps in habitat where, for example, a dock might be located.

Implications

- The presence of fish cannot be taken for granted. It is vitally important to protect water quality (see above) and to protect fish habitat. This can be done first and foremost through municipal planning review and approval, but also by individuals taking action to protect or enhance natural shoreline habitat on their properties. Protection starts with good stewardship.

3.7 **WILDLIFE**

Forty-four species of mammals, 170 of birds, 18 of reptiles and 16 of amphibians have been documented in the Eastern Georgian Bay area. As would be expected in an area that is transitional between the boreal forest to the north, and the deciduous forest to the south, some species are at the limits of their ranges and are not found in large numbers. No inventory has been completed for the Blackstone Lake area, but we can assume

that many of the documented species are or may be found. Most lake residents have enjoyed viewing or hearing wildlife ranging from black bears to short-tailed voles, turkey vultures to red-winged humming birds, snapping turtles to spring peepers.

Most significant – because they are rare and to a greater or lesser extent threatened with extinction – are animals designated as "Species at Risk" or SAR. Species at Risk formally listed as "endangered" are protected by law under the Endangered Species Act. This act provides strong penalties for interfering with the species themselves or their critical habitat (usually where they reproduce and raise their young). Other species listed as "vulnerable" or "threatened" are not formally protected by the Endangered Species Act. However, MNR works through municipal planning to provide habitat protection through authority of the 2005 Provincial Policy Statement under the Planning Act; the policy statement says that development and site alteration shall not be permitted in "significant habitat of endangered species and threatened species" or in "significant wildlife habitat".

The table below lists animals classified as Species at Risk that could potentially be found in the Blackstone Lake area.

Species	Status	Habitat Description
Spotted Turtle	Endangered	Marsh, swamp and fen, spring pools, open areas of sand or fine gravel, rock barren
Blanding's Turtle	Threatened	Marsh, swamp and fen, open areas of sand or fine gravel, rock barren
Eastern Foxsnake	Threatened	Marsh, swamp and fen (bog), rock barren
Eastern Hog-nosed Snake (this has been seen in the area)	Threatened	Open areas of sand or fine gravel, rock barren
Eastern Massasauga Rattlesnake	Threatened	Marsh, swamp and fen, rock barren
Map Turtle	Special Concern	Basking sites along open water
Milksnake	Special Concern	Rock barren, open field
Eastern Ribbon snake	Special Concern	Marsh, swamp, fen
Five-lined Skink (a type of salamander)	Special Concern	Rock barren
Stinkpot	Special Concern	Marsh, swamp, fen (bog)

All these species are quite secretive and may be present but unseen. Consequently, the primary focus of conservation efforts is protection of habitat. In cases where proposed development may affect critical habitat, MNR may require a site inspection or study before development approvals are issued. Landowners can promote conservation of species at risk by minimizing disturbance of all natural habitats on their property.

Crown land at the south end of Blackstone Lake is designated by MNR as "winter deer range". Through municipal planning MNR recommends certain lot size standards be

applied to proposed development of private land adjacent to winter deer yards. This would apply only to creation of new lots and would not affect existing lots.

The common loon has iconic status in cottage country. Loons have nested and successfully raised young on Blackstone Lake for many years. Frequently there has been more than one breeding pair. This rosy picture may be threatened. Portions of the lake formerly wild have been developed, reducing available nesting habitat. Also, there is more boat traffic and wakes from ever-larger boats have the potential to disturb nests.

Black bears are a perennial topic of interest. With more people there are more interactions with bears, some of which are not very positive, for either bears or humans. During years when bears' natural food supply is limited, due to drought or other reasons, there seem to be more bear "problems". The bears are here to stay, as are people, so it is important that we learn how to minimize negative interactions.

Implications:

- Protection of habitat is the best way to conserve wildlife, especially species at risk. Stewardship of natural vegetation, especially along shorelines, is most critical, but restoration of shoreline and other habitat can help.
- We enjoy viewing wildlife, but a respectful attitude can ensure that animals are not disturbed, especially when they are breeding and raising young. Observe from a distance and do not pursue animals. Be particularly careful to stay away from nests for dens.
- There is valuable conservation information on the Internet about some species, such as black bear and Mississauga rattlesnake. Take the opportunity to learn what you can do to co-exist with and conserve these animals.

3.8 **VEGETATION**

The land around Blackstone Lake supports a variety of vegetation communities typical for the area. There are also some unique vegetation communities that deserve special respect and care.

In 2005 the Nature Conservancy of Canada and the Ministry of Natural Resources published the Ecological Survey of the Eastern Georgian Bay Coast. This survey was undertaken by Jarmo Jalava, Wendy Cooper and John Riley. Not only did the survey look at natural features across the broader eastern Georgian Bay, it also specially included a detailed reconnaissance inventory of what was termed the "Greater Blackstone Natural Area". This was based on recognition that Blackstone Lake has a particularly rich natural heritage and is relatively undisturbed by human activities. What follows is primarily a summary of information published in this survey. The 100 hectare

Blackstone Lake Reserve, which encompasses Oldfield Lake and is owned by the Georgian Bay Land Trust, was included in the study area.

Based on accepted methodology Eastern Georgian Bay area was broken down into a number of biophysical units based on topography and surface features. The Greater Blackstone Area was deemed to include the following biophysical units: Weakly Broken Shallow Sandy Till Plain; Moderately Broken Bare Bedrock Uplands; and Moderately Broken Shallow Sandy Till Uplands.

These biophysical units included a total of 36 landform-vegetation types comprised on 24 vegetation communities supporting 285 vascular plant species. Five vegetation communities were considered globally and provincially rare:

- Atlantic Coastal Plain Meadow Marsh Type (2 locations noted)
- Acidic Treed Talus Ecosite
- Dry to Fresh Hemlock – Oak Mixed Forest
- White Pine – Red Maple Mineral Mixed Swamp Type
- Buttonbush Organic Thicket Swamp Type

A number of provincially significant plant species were noted:

- Common Meadow Beauty
- Marsh St. Johns-wort
- Carolina Yellow-eyed grass

The Common Meadow Beauty and Carolina Yellow-eyed grass are Atlantic Coastal Plain species that are out of their normal range – they are typically found in the eastern United States. In 1878 these two species and six other Atlantic Coastal Plain plant species were documented for the first time in Ontario on Blackstone Lake. Other Atlantic Coastal Plain species would likely be found today if detailed inventories were undertaken at other seasons. The presence of these Atlantic Coastal Plain species, and the plant communities they are associated with, is considered highly significant. They are found along sandy shorelines and require fluctuating water levels, as are found on Blackstone Lake and some of the smaller adjacent lakes.

Private land west of Blackstone and south of McRobert's Bay includes semi-mature sugar maple – yellow birch plant communities and some of the Atlantic Coastal Plain communities mentioned above. This area, especially the small unnamed lake just west of Blackstone, was noted as being of high conservation interest. If it was Crown land it would likely be a candidate nature reserve or conservation reserve.

The Blackstone Lake Reserve, around Oldfield Lake, was noted as protecting some significant vegetation communities, despite heavy logging that occurred in the late 1990s. Logged areas are recovering and the reserve will one day host a rich maple – beech forest. In the meantime other vegetation communities are protected by the reserve, including an Atlantic Coastal Plain community.

Implications:

- Blackstone Lake supports diverse and significant plant communities. These are important in and of themselves. They also sustain wildlife and help protect the lake's water quality. Last but not least, the rich vegetation contributes to the cottage experience. For most residents the natural beauty of the lake and its surrounding forests was a primary attractant.

- Some of the plant communities and individual species are sensitive to human impacts. The significant Atlantic Coastal Plain communities are often found on the lake's limited extent of sandy shoreline, and depend on fluctuating water levels for their continued existence. Those of us who are lucky enough to have these habitats can protect the species through good stewardship. All cottagers can conserve natural vegetation on their properties and restore native species.

3.9 OWNERSHIP OVERVIEW

The majority of land surrounding Blackstone Lake is privately owned; at least 80% of shore land is in private hands. However there are significant blocks of provincially administered Crown land, mostly around the south portion of the lake. A number of private cottage lots were created from Crown land in the 1960s and sold to private individuals. Ontario has not created any Crown cottage lots on Blackstone Lake since the 1960s.

There is no Crown-owned boat launch on Blackstone Lake. The Crown-owned boat launch on Crane Lake is deemed to provide public access to Blackstone as well.

There is currently one private marina, Angler's Inn, located on the lakes north shore. A second marina/resort was closed and sold for private residential use in 2007.

As was the case with many inland lakes in Ontario, a 20 metre shoreline allowance was reserved for public use when land was patented. This land became a municipal shoreline allowance. Many landowners have purchased this shoreline allowance from the township. From a practical standpoint the shoreline allowance in front of private land is treated as part of the private land, but building permits will not be issued for buildings on this land unless it is acquired from the township by the landowner.

The Georgian Bay Land Trust owns the 100 hectare (257 acre) Oldfield Lake Reserve, south of Blackstone Lake. The area is managed as a nature reserve to protect significant natural features.

A major electric utility corridor first developed in the early 1960s passes in a northwest – southeast direction just west of Blackstone Lake. This corridor actually crosses the

western extremity of McRobert's Bay and abuts the southwestern corner of the lake. The corridor is occupied by 3 high voltage electric transmission lines.

Timber harvesting on Crown land in the area of the lake is managed by Westwind Forest Stewardship Council (Westwind). For the past 3 years Westwind has been developing an updated forest management plan. This plan will guide forest management beyond 2010. The plan must comply with Ontario's Crown Forest Sustainability Act and relevant policies and planning requirements. It is expected that the plan will be approved by mid-2009. While we will monitor this subject on an ongoing basis, we do not anticipate any particular threats to our lake management efforts arising from forest management.

3.10 ACCESS

There is limited access to Blackstone Lake and watershed. Most access is by road, apart from a very small number of people who chose to access the area by float plane, canoe or snowmobile. However, with a single road, Blackstone & Crane Lakes Road serving the area, it is a 'drive-to' and not a 'drive-by' destination. This serves to limit the number of short-term visitors and 'casual' traffic.

Water access to Blackstone Lake is also limited. In addition to the boat launch at Angler's Inn, there is only one unauthorized public access point and it can only be used to launch very small boats. MNR operates an authorized public boat launch on Crane Lake, which provides indirect access to Blackstone Lake via the Crane Lake River.

A significant issue for the lake – which has and is zoned for a preponderance of water access cottages – is that only Anglers' Inn provides parking, docking and boat launching services. With the closure of Blackstone Landing in fall 2007 the only other access is via Crane Lake House and through the Crane Lake River. The Crane Lake public access point operated by MNR does not provide sufficient parking for cottage use and provides no docking.

While Anglers' Inn provides excellent services, and the current owner wishes to continue operations, there is no guarantee that this will continue indefinitely. Consequently, the TOA – with support from BLA and other lake associations - established a task force to recommend options for addressing access issues. This matter has the potential to affect how water access cottagers use their cottages and the value of these properties.

3.11 OPEN SPACES AND TRADITIONAL RIGHTS OF WAY

Crown land on the lake is used very occasionally for picnicking and other recreation. This is permitted under MNR's Free Use Policy. There is potential for use of Crown

land to cause problems (e.g. heavy camping use, littering, noise, vandalism). However this has not been a significant issue on the lake. There are traditional portages to some surrounding lakes and some snowmobile trails. However, the shoreline access points for some of the traditional portage routes and some snowmobile trails are poorly marked. As well, cottage development has blocked some portages.

The lake is part of a longstanding canoe route that loops west through Crane Lake to Georgian Bay, then east through Spider Lake and Otter Lake and back to Blackstone. Use of this canoe route has diminished over the years as cottage development has increased. Variations of this route extend to Healey Lake and south to the Moon River. MNR published canoe route maps in the 1970s but these are no longer available.

There are no 'public beaches' on Blackstone Lake, although there is limited beach area at Anglers' Inn.

The recently completed '911 project' means that all properties around the lake now have a unique road name and number.

3.12 WATER LEVELS

As reported in the Federation of Ontario Cottagers' Associations: (FOCA) Lake Stewardship Newsletter (Summer 2006), the management of lake levels alters the natural environment and can affect natural lake ecosystem functioning and system productivity. The manipulation of water levels can cause a variety of changes, such as water temperature, dissolved oxygen, and clarity; increased salinity, nutrients etc.

The first dams were constructed on the lake in the early 20th century to facilitate extraction of timber. Water levels on the lake are now controlled by an MNR-owned dam at the outlet of Crane Lake. Water levels are managed to suit recreational use by cottagers. Generally water levels vary only slightly, with the water rising 5 to 10 cm above average in the spring when in-flow increases, and dropping in the fall when logs are removed to minimize ice damage to docks during the winter and create space for high spring flows.

There are also dams upstream between Blackstone Lake and Third Lake, and at the outlet of Horseshoe Lake. These dams may also affect flows and water levels.

It is difficult to determine how water levels would behave if dams were not in place. This could only be approximated through detailed hydrological analysis. However, it is known that before construction of dams the lake's average water level was about 100 cm lower. As well, water levels would have varied more, rising when snow melted and falling during summer droughts. Flows through adjacent rivers would also have varied more, especially in the spring when high flows would have created faster moving water.

The regulation of water levels will inevitably have had some affects on fish habitat and reproduction of fish. It is known that some species benefit from the flushing effects of high flows. It has also been recognized that regulation can impact water quality by, for

example, reducing dissolved oxyen. The Ecological Survey for the Eastern Georgian Bay Coast noted that Atlantic Coastal Plant species found adjacent to the lake would benefit from fluctuating water levels. There could be ecological benefits associated with a more natural hydrological regime.

However, it would be difficult, if not impossible, to return to the natural regime as it was before the lake's water levels were first regulated. The "base elevation" of the lake is about 100 cm higher and it not likely practical to lower water levels by that amount; the Crane Lake River would be impassable and docks and boathouses would be high and dry. There might be an opportunity to allow water levels to rise higher in the spring, but the likelihood of damage to docks and boathouses might preclude this option. Also, it might be possible to lower the lake more significantly in the fall, once navigation through the Crane Lake River ceases.

Due to the complexity of this situation, and possible effects on infrastructure, changes in water levels would require detailed study, and for the moment we assume status quo.

4 POLICY ISSUES & OPTIONS ARISING (for discussion!!)

This section examines policy options and issues arising from the natural heritage features of the Blackstone Lake watershed in order to identify potential actions for the lake plan including constraints affecting present and new land development and resource management. The options identified are ones typically found in lake plans and must now be tested with Blackstone stakeholders. New ideas or alternatives may yet emerge.

4.1 WATER QUALITY

Lakes are dynamic systems, responding to both natural events (fluctuations) and artificial stimulus. All surface waters are subject to nutrient, sediment and toxic contamination, some of these come from the lake's own substrate or runoff from the landscape. In general, there is no single measure that constitutes "good" or "poor" water quality because qualifying water quality depends on its use (i.e. drinking water vs. navigational water vs. recreational use), and some water quality problems are treatable.

That said, our water quality is excellent and we anticipate ongoing vigilance to allow the early detection of changes in the nutrient status and/or the water clarity of the lake from impacts, and enable natural resource managers to determine the type and level of recreational activity that could be sustained by the carrying capacity of the lake.

> **Option 1**: Develop an education program to encourage cottage owners, renters and others to become good stewards of the land and lakes by promoting

awareness about the impact of their activities on water quality. This would be based on materials already developed by others. Compliment print materials with hands-on workshops. Include information on laundry and dishwasher detergents containing phosphorus etc. Also include the need to regularly pump-out septic systems. Include materials about new septic technologies etc. and the proper draining of hot tubs.

Option 2: Establish an overall 'Environmental Code of Ethics' for Blackstone Lake with a focus on environmental stewardship but covering a broad range of issues.

Option 3: To reduce pollution from power boats promote the switch from 2-stroke to 4-stroke motors through an educational approach.

Option 4: : Continue a comprehensive water quality monitoring program through MOE's Lake Partner program and the Township of the Archipelago Water Quality Monitoring Program. Seek opportunities to expand monitoring, for example to include benthic and plankton communities and chemical parameters. Make water quality testing results available to all property owners on the lake, municipal officials of TOA et al, and other stakeholders in the watershed.

Option 5: Have the BLAC participate with other lake associations (or lake stewards) to form a regional council.

Issue Statement: *The impact of property development, waste disposal and boating is a threat to the water quality of Blackstone Lake.*

4.2 Shoreline Vegetation

Option 1: Develop an education program based on existing materials, including hands-on workshops, to inform property owners about landscape alternatives to manicured lawns, paved driveways and other impervious features, non-native species, and sandy beaches to help reduce undesirable and inhospitable artificial landscapes along the shoreline.

Option 2: Take general and/or specific action to promote natural landscaping e.g. establish model sites. For example: in the littoral zone consider in-water rehabilitation with the assistance of MNR by adding downed native logs and other woody debris, as well as carefully placed rocks near the shoreline, to create micro-habitats for aquatic species and to protect the natural substrate; and in the riparian zone create a buffer of native plants, shrubs and trees between the water line and any lawn, to discourage erosion and prevent sediment runoff.

Option 3: Work with the TOA et al to verify and maintain a map of significant wetlands around the Blackstone Lake area and seek to change by-laws re shoreline integrity/buffer areas and discouraging high-profile development and resource management activities (forestry and mining) in the viewscape of the lake.

Option 4: Propose that TOA et al enact a municipal "Tree Cutting" bylaw to ensure that private lots retain a percentage of their natural vegetation. NOTE: THIS IDEA HAS BEEN A POLITICAL NIGHTMARE IN OTHER JURISDICTIONS AND MAY NOT BE WORTH PURSUING IN THE SHORT TERM.

4.3 Fish and Wildlife

Option 1: Support ongoing and new educational opportunities on fish and wildlife.

Option 2: Distribute educational literature that promotes the protection of wildlife habitat and shorelines to property owners. Lakefront owners should be encouraged to maintain or return a significant portion of their shoreline to natural vegetation to encourage nesting and suitable habitats for other species.

Option 3: Develop an education program in conjunction with MNR regarding the protection of rare species' habitat (including threatened and endangered species) and provide examples of how to naturalize private property to encourage rare species establishment. Report identification of endangered or threatened species to Natural Heritage Information Centre

Issue Statement: *The environmental and aesthetic value of natural shorelines is threatened by removal of vegetation and the introduction of man-made structures.*

Issue Statement: *The preservation of fish and wildlife habitat is threatened by development and increased human activity.*

Option 4: Develop a thorough species inventory in partnership with the MNR, to identify native, rare and exotic species and estimate relative abundance indices for the lake as well as identify important habitat sites for protection along the shoreline.

Option 5: Develop a specific initiative on Lake Trout, walleye and game fish preservation. Promote and participate in creel census projects and present results at BLAC meetings, newsletters.

Option 6: Work with the TOA et al to ensure by-laws recognize significant habitat. Local official plans and zoning bylaws must identify the location of newly

identified significant wildlife habitat and provide appropriate policy to ensure its protection, including the enforcement of environmental impact assessments for new development proposals.

4.4 Access Issues and Options

Option 1 – Work with the TOA to ensure that plans are in place to address the eventuality that Anglers' Inn can no longer provide parking, docking and boat launching. This is obviously a top priority.

Option 2: Maintain Canoe & Snowmobile Routes, and Hiking Trails in the Area.

Option 3: Develop and implement a Canoeing Plan and monitor any changes in government policy and legislation that could impact canoeing and related recreational activities.

Option 4: Promote development of a Canoeing/Trails Map but expanded to include a broader range of 'Places to Go'

Option 5:+ Have the BLAC work with local business and the Municipality to communicate the location of water access points, boat launching facilities, trails, and open spaces: for example, arrange for signs to be posted at the shoreline marking access to portage trails and other rights-of-way.

Issue Statement: *The loss of marina facilities on inland lakes is leading to fewer and fewer access alternatives for water access cottagers. There is now only one option on Blackstone Lake.*

Issue Statement*: Property development is causing traditional rights-of-way such as portage and hiking trails to be re-routed or abandoned: this reduces recreational opportunities for enjoyment of the wilderness and reduces the number of 'places to go'.*

4.5 SUSTAINABLE FOREST MANAGEMENT

Using examples and guidance from organizations that support forest management promote the notion that sustainable forest management is mandatory and not a threat to lake stewardship in the watershed. On balance, we understand this issue to be well in hand although we should continue to monitor developments.

Should it be determined that a more activist approach is needed we could for example: (1) provide training and workshops on the benefit of sustainable forest management with a direct link to the benefits that it provides to the lake environment; (2) oppose any further commercial development of large natural land areas surrounding the lake); (3) support any initiatives that promote sustainable forest management; and (4) partner with organizations or educational to develop and deliver indigenous tree education programs – hiking excursions, forest tours etc.

On balance, we believe this is not an issue for us, but will monitor developments.

4.6 MINING RISK

There has been some recent press and concern expressed about the possibility of mining developments in proximity to area lakes. We anticipate that imminent litigation will specifically prohibit such activity. We will monitor developments to ensure this is the case.

4.7 WATER LEVELS

Due to the complexity of this situation, and possible effects on infrastructure, changes in water levels would require much more detailed study. Again, we will monitor policy developments, but do not anticipate changes to the status quo.

5 COMMUNITY AND SOCIAL ELEMENTS

5.1 RECREATIONAL BOATING

Boating is one of the most important activities on Blackstone Lake after swimming. The type and frequency of boat use is quite varied. There is the enjoyment of water skiing and wake boarding. Some people use a boat to get somewhere; maybe a water-access cottage, Angler's Inn, or to visit friends on the lake. People boat to explore the lake and enjoy the shoreline, bays and swamps: to see wildlife and to go fishing.

5.1.1 Boating Use

Without a survey, it is impossible to gauge the number and variety of boats on the lake. However, surveys on similar lakes have found an average of more than 4 boats per cottage and we have no reason to believe that is not the case here. Anecdotally, we believe we may have a greater proportion of non-motorized, mainly canoes and kayaks than some lakes. Similarly, we believe we do not have as many "big boats" with larger horsepower. We believe a fair proportion of motors are still of the 2-stroke variety.

A high level of boat usage raises several safety and environmental issues. Although we believe our lake is relatively quiet and law-abiding compared to others we hear about, we still get occasional concerns regarding unsafe speed, reckless operation, the closeness of boats and water-skiers to swimmers, and small vessels like canoes and kayaks.

Environmental concerns include water pollution, especially from 2-stroke motors, damage to shorelines and wildlife habitat, particularly bird nesting areas and fish spawning grounds. In addition there is the potential of wake damage to property, docks and docked boats, and increased noise from the vessel's engines and occupants of the boats. HOW BIG A CONCERN FOR US ????

5.1.2 General Concerns with Recreational Boating

Throughout 'cottage country' there are several common concerns with the increase in recreational boating and a general desire to seek a balanced approach to dealing with these concerns.

5.1.2.1 Personal Water Craft (PWC)

The operation of Personal Watercraft (PWC) is one of the greatest boating concerns of shoreline residents. PWCs are cited most often as an unpopular recreational activity on many lakes. In some US States PWCs have been banned entirely from certain water bodies. The main concern with PWCs appears to be the uncaring attitude of a limited number of PWC operators, which causes all operators to be viewed as irresponsible.

5.1.2.2 Speed and Wakes

The environmental impacts of inappropriate boat speeds and wakes can have long term or permanent negative effects on wildlife and vegetation. The same is true for the operation of propeller-driven and jet boats in shallow waters even at low speed. In addition to the negative visual impact, erosion of the shoreline, and operation of boats in shallow waters, increases turbidity and damages weed beds, resulting in the loss of fish habitat. Disturbance of nesting waterfowl results in unsuccessful brooding efforts and abandonment of nests and/or nesting site. The long-term effects are a reduction in fish because of loss of habitat, which means reduced food supply for waterfowl. Eventually this may result in a reduction of the local wildlife population.

5.1.2.3 Pollution

It would certainly be useful to know what percentage of power boats on the Lake are powered by 2-stroke engines. Environment Canada's Environmental Technology Centre tests show that conventional two stroke outboards produce 12x as much benzene, toluene, ethyl benzene and xylenes, and five times as much oil and grease as four-stroke outboards.

According to the Environment Canada 'Green Lane' web site:

> *"Although outboard motors exhaust their emissions into the water, recent studies of their impacts on lakes revealed that most hydrocarbon compounds in the water migrated into the air within 6 hours, and that samples taken about a metre below the surface showed no contamination. However, heavier hydrocarbons, such as oil and grease, remain on the surface for a longer period of time and may affect the health of microscopic organisms." "Further comparisons of the exhaust emissions from a light-duty van, a 9.9 two stroke outboard and a 9.9 four–stroke outboard showed that the twostroke produced 50 % more carbon monoxide than the four-stroke and nearly 60 times more than the van. The two-stroke also emitted 15 times more unburned hydro-carbons than the four-stroke, and nearly 125 times more than the van."*
> *Source - http://www.ec.gc.ca/science/sandemay00/article1_e.html*

http://coastaloutdoors.com/articles/0101/2strokev4stroke.htm.

As reported by the Massachusetts Office of Coastal Zone Management (CZM), newer two-stroke technology has led to higher fuel efficiency and lower hydrocarbon emission levels. There are several sources of information on these direct fuel injection engines. A good starting point is the CZM website http://www.mass.gov/czm which contains a useful index and includes pages on 'Better Boating through Environmental Engines" as well as "The Scoop on Boat Engines"

Another form of 'pollution' is the introduction of invasive species caused by boats being transported from one lake to another. Thorough cleaning of boat, trailer and bulge prior to launching visiting boats is necessary to prevent infestation of foreign water species. Ideally this cleaning should take place at a 'choke-point' through which the majority of boats entering the watershed have to pass.

5.1.2.4 Boat Noise and 'Nuisance Traffic'

Noise is a significant issue on many lakes, including Blackstone???, since the sound of boat motors, as well as music and loud conversations taking place on boats, resonate across open water. Such noise is disturbing to some residents of the lake who seek a tranquil setting to relax in. Nuisance boat traffic especially boats and PWC's that go back and forth in one area of the lake or bay.

5.1.3 Boating Code of Conduct

The resolution of boating concerns has proven to be contentious for lake associations and lake planners alike. The approach that appears to have had the greatest success is an educational approach based around a well-publicized 'code of conduct'.

For Blackstone Lake it is therefore proposed that the boaters' code of conduct in Figure 6.2 be adopted. It is assumed that the vast majority of boaters are responsible and safe boat operators and that a code of conduct serves to remind boaters of existing 'rules of the road', to educate new boaters, and to emphasize any concerns that are relevant to Blackstone Lakes.

5.1.3.1 The Lake Watch Program & Enforcement of Boating Rules

While education is preferred to enforcement, cases do arise where stronger action is required. A possible intermediate, stewardship approach, similar to 'block parent' and 'neighbourhood watch'' programs has been termed 'lake watch'. Such a program would establish lake watch signs for docks to give the community 'an eye on the lake'. In addition, as has been done in the Muskoka lakes, it might establish a boat patrol on the lake staffed by volunteers. **(WE don't think this is realistic. Liability issues are rendering these programs almost impossible even for large associations.)**

In extreme cases, speeders are long gone by the time the police are on the scene, so it is necessary to educate boaters on how to assist with community based policing. For example, it is important that boat registration numbers and descriptions of the drivers of the offending vessels be recorded. To prosecute a case video recordings are extremely useful as evidence, and eyewitnesses have to be prepared to testify in court.

A lake watch program would encourage witnesses to a serious boating incident to call the OPP at 1-888-310-1122. This will open an incident file which helps determine how often the OPP should patrol our lake.

This information is very important to many lake plans. Less so for us??

Figure 5.2 Proposed Blackstone Boaters Code of Conduct

Friendly Boating Practices on Blackstone Lake

Follow the Safe Boating Guide and obtain your Pleasure Craft Operator's Card
- learn how to safely operate your boat.

Minimize your wake especially in narrow channels and near shore so that natural shorelines are not eroded, loon and duck nesting sites are not disturbed and your neighbours' floating docks and parked boats are not bounced around and damaged.

Reduce your speed especially in narrow channels and near shore where other boats and swimmers could be in danger and remember that within 30 metres of the shore your speed should be less than 10 km/hr (it's the law).

Head for the centre of the lake when travelling at speed or when water skiing or tubing - don't ride parallel to the shoreline.

Give everyone a wide berth and travel slowly when pulling away from docks, launching ramps or swimming areas.

Respect your neighbours' TRANQUILITY by moving around the lake rather than operating on one small area.

Protect the environment by treating bays as no wake zones, operating in water over 1.2 metres (4 feet) deep to avoid disturbing the lake bottom, stowing garbage until you return to shore, and avoiding spillage of gas and oil into the water during refuelling.

When anchored take care not to obstruct navigation for other boats.

Clean your boat and trailer when transporting them to other lakes and when bringing them into the Kennisis lakes to avoid transporting invasive species
Remember to drain your bilge on shore away from the lake and empty holding tanks for onboard toilets in a proper facility.

Remember that drinking and boating is dangerous and illegal.

5.2 LANDSCAPE AND AESTHETICS

All consultations to date confirm that the Blackstone community values the aesthetic quality of the natural landscape. This is an important value because it is aligned with protecting the natural health and beauty of the lake. Maintaining a natural landscape is

dependent upon the protection of such features as the shoreline and the horizon as well as the maintenance of a range of landscape types such as forest, wetland and open views.

The most significant landscape feature on the lake is the winding shoreline; no two lots are the same. Some have steep rock faces to the water and others have a natural sand beach, while others have a mix of sand and rock together in the same lot. There are two important landscape lines where development can impact the natural setting of the lake: the shoreline and the tree line or horizon. When viewing the opposite side of the lake, our eyes are immediately drawn to these two lines and anything that stands out on these lines can greatly impact the natural character. As a result any development that occurs on these landscape lines will directly impact the natural setting. The main source of visual impact in these areas is the construction of buildings, transmission lines & communications towers and the removal of vegetation.

The viewscape defines the area within the sight-horizon (viewscape) of Blackstone Lake. To retain the natural aesthetics of the landscape, it is important that no pits or quarries be allowed within the viewscape and that no significant removal of natural vegetation or clear-cutting take place. The horizon should suffer minimal disturbance and shoreline structures, such as boathouses, docks, awnings and recreation areas should be low profile and kept to a minimum.

5.3 TRANQUILITY AND NIGHT SKIES

Peace and tranquility are highly rated as essential elements of life on the lake. Unwarranted noise and indiscriminate lighting both affect the enjoyment of the natural setting because they interfere with these values. Light pollution affects many shoreline residents; however, it is recognized that strategically located shoreline lighting has traditionally aided navigation and that a few landmarks with lighting can enable night time cruising.

The brightening of the night sky is a growing problem as evidenced by the increased popularity of street, garden and landscape lighting which adds to the unnatural level of light around the lake. Research has proven that nocturnal insects that congregate around light sources are at greater risk of predation. Bats, which consume 30-50% of their body weight in insects each night, feed on these insect masses found at light sources. Insects, which are important pollinators and food sources for many species, and those that are unable to detect bats, are removed from the local food chain, reducing the local biodiversity. Unless initiatives are taken to inform cottagers and local business about the effects and costs associated with lighting, viewing the stars at night and conserving the local biodiversity will become more difficult.

5.3.1 Protecting Dark Skies

This is not an area that historically has been of concern.

5.3.1.1 Light Pollution

Light pollution is a broad umbrella term that covers all types of unwanted and inefficient lighting. The International Dark-Sky Association defines light pollution as "any adverse effect of artificial light including sky glow, glare, light trespass, light clutter, decreased visibility at night, and energy waste". There are three main classes that light pollution falls under: light trespass, glare, and sky glow. Light trespass is the spilling of light beyond the area or property intended to be lit. This includes bothersome lighting from neighbours' outdoor lights shining into windows that reduces privacy. This is most commonly a problem in urban areas where residences are tightly spaced and outdoor lighting from streetlights pours in through bedroom windows at night, although it can also be a problem in cottage country. Waterfront lighting is particularly susceptible to trespass, as water reflects glare across the lake, so a neighbour's dock lamp may inadvertently illuminate property across open water. Even outdoor lighting that spills into natural habitat for local flora and fauna can be considered light trespass.

5.3.1.2 Voluntary Dark Sky Initiatives

There are several stewardship and voluntary initiatives taking place in central Ontario which address dark skies. Some of the leading examples come from the Muskoka region, where the Muskoka Natural Heritage Foundation has been quite active in researching and promoting the protection of the night sky. More specific to waterfront properties and lighting, the Muskoka Natural Heritage Program also has a "Sensible Waterfront Lighting Guide" which lists simple adjustments that residents can make to existing lighting fixtures to make them more dark sky friendly. It was a combined initiative put together by the local townships as well as Lake Associations and the overarching District of Muskoka. Other Ontario initiatives directed at raising public awareness and promoting night sky stewardship include: Mississippi Mills, Manitoulin Island, and the Bruce Peninsula all have initiatives.

5.3.1.3 Night-Friendly Products

Night friendly products are light fixtures that help to eliminate light pollution in one way or another. A wide variety of products are available on the market today, it just takes consumer initiative to seek them out, and common sense when selecting fixtures. The International Dark Sky Association has a complete list of specific fixtures that they have approved as night sky friendly (see bibliography). A design feature that makes these fixtures night friendly is their 'cut-off'. Full cut-off fixtures direct all light downwards, with no light escaping from the sides or top of the fixture.

5.4 COMMUNITY & SOCIAL ENVIRONMENT ISSUES AND OPTIONS

5.4.1 Power Boating

Option 1: Promote 'Friendly Boating'. Have the BLAC membership specifically endorse a 'Boating' Code-of-Conduct. Focus on Safety. Publish and post the

code so it is available to residents and visitors (laminate with boating map, issue with rental agreements, provide to real estate agents, ask OPP to hand out, display at marinas.

Option 2: Establish acceptable boating speeds for different areas of Blackstone Lake. Post signs restricting speed limit and wake in narrow channels as well as within 30 metres of shore. Identify restrictions on boating map.

Option 3: Issue 'cottage watch' signs for mounting at end of dock or at shore – have participants approach recalcitrant boaters to provide 'friendly boating' sheet. Not feasible???

Option 4: Support OPP etc. re safety enforcement. Work with OPP and Coast Guard to enforce water traffic laws and courtesy vessel inspections etc.

Option 5: Promote the phasing-out of old, polluting 2-stroke motors in favour of new, environment-friendly 2-stroke and 4-stroke motors on the lake; in the interim promote the use of environment-friendly 2-stroke lubricants.

Option6: Establish cleaning stations at all boat launches and at an access 'choke-point' to reduce risk from invasive species.

Option 7 – Work with TOA to encourage stepped up patrols by the OPP, as has been done in the past.

5.4.2 Tranquility

Option 1: Establish a recognized 'quiet time' such as before 10 a.m. every Sunday. (I believe the TOA has a by-law prohibiting power tools, chainsaws, etc. on Sundays)

Option 2: Educate residents re Township of the Archipelago's municipal noise bylaw, things to do to reduce noise (mufflers) and the process to follow to report occasional or persistent infractions.

Issue Statement: *Excessive noise from boats, snowmobiles, traffic, and cottage sites reduces the tranquility and 'quiet enjoyment' of the natural environment at the lake.*

Issue Statement: *Some power boating use pollutes the lake, damages the shoreline, puts swimmers at risk, and shatters the tranquility of the lake*

Option 3: Support residents in noise-related issues, and when necessary organize residents to terminate persistently noisy situations.

Option 4: Have the BLAC maintain an ongoing action to communicate tranquility as a fundamental community priority. Post and distribute 'tranquility posters'. Run a photography competition for the best picture that captures the tranquility of the lake (then use on posters).

Option 5: Review the noise by-law (????)to specifically include limits (time and duration) for boats with motors that exceed a defined decibel limit**. (This is federal law, not something TOA can address).**

5.4.3 Night Skies

Option 1: BLAC to provide educational materials re reducing night-time exterior lighting e.g. provide sketches of how to design installations, list products to use and where to get.

Option 2: Conduct a night-time light inventory to establish a baseline from which yearly progress can be tracked: develop a strategy to eliminate light pollution "hot spots."

Option 3: Work with the TOA to update lighting by-laws in order to require or encourage light abatement and reduce 'light trespass. Specifically require that a property owner may only light his/her property and that illumination of adjoining properties be prohibited. Require that all lighting located within 50 ft (12m) of open water should be a low cut off type.

Option 4: Provide incentives for the use of night-friendly lighting, for example, a property tax credit, a hydro rebate, a dark skies plaque for compliant cottages.

Issue Statement: *Excessive lighting CAN negatively impact enjoyment of the night skies and the natural environment.*

5.4.4 History

Option 1: Consider approaches that will help us learn from and appreciate the rich history of our area and indeed our stewardship efforts. Support initiatives such as Blair Evan's History Project.

6 LAND USE

6.1 SUMMARY OF LAND USE

The shoreline areas of Blackstone Lake are zoned for 166 total properties as of 2004. Of these 7 are permanent occupancy, 117 are seasonal properties and there is one other (we think Angler's Inn). There are 42 vacant lots of record. 29 of these vacant lots are eligible for development per the official plan and bylaw. Theoretically 40 new lots could be established if all the vacant land were divided up. 11 of these theoretical lots could likely be developed in compliance with Official Plan and bylaws.

In short:

Blackstone properties could potentially increase by 1/3 in accordance with the official plan.

ie. There is "capacity" to go from 125 occupied lots to about 165.

Commercial development on the lake currently consists of Angler's Inn only.

Very few cottages are occupied year round. Any trend to moving to the lake for year round "permanent" use? There are more media reports of this as a retirement strategy. We believe "visit duration" could potentially increase as baby boomers retire but year round residency is unlikely to increase much. The number of people living on and using the lake can have a direct effect on water quality and can impact on social elements such as decreased natural landscapes, as well as increased noise, recreation and boating activity. Longer stays at the cottage increase the amount of phosphorus generated through sewage. .

The number of years of ownership of cottages ranges widely but is rather equally spread out between 1 and 50 years. Some families have seen four generations enjoying the lake; many others have seen 2 or 3 generations' use.

The vast majority of lot frontages are small, with many as small as 50 ft. There are only two large frontages on the lake. These two lots have controls placed on them that preclude further lot creation ("severance") without a full rezoning application.

6.2 ZONING

Private Land

The Township of the Archipelago Comprehensive Zoning By-Law establishes the following zones for Blackstone Lake:

Inland Lakes Residential (IR) Zone – This zone is intended to accommodate cottage use. Consequently, a large portion of the shoreline, more than half, is zoned IR. The IR Zone establishes residential use as the main use. Accessory residential uses, bed and breakfast use and home occupation are also permitted. Permitted buildings and structures include a single detached dwelling (one per lot) and accessory structures/buildings, as defined by the by-law.

Some lands are designated Inland Residential Divided (IR/D) indicative of lots having been divided or Inland Residential Holding (IR/H) indicative of holding provisions having been put in place.

Marina/Resort Commercial (MRC) Zone, Resort Commercial (RC) Zone and Marina Commercial (MC) Zone – These zones include the Angler's Inn property and the former Blackstone Landing property. Main designated uses include marina, housekeeping cottages or rental cottages and lodge, motel or hotel. A number of secondary uses are also defined (e.g. restaurant, store). Development limits are defined. An exception specific to Angler's Inn allows a maximum of 33 trailer and/or tent sites. An exception specific to Blackstone Landing provided that 4 rental cottages were permitted, notwithstanding the limited size of the property. (A number of such exceptions for "pre-existing" uses are in place for commercial properties across the township. These generally address uses in place before the township was established.)

Natural State (NS) Zone – Much of the "backshore" and Crown land around the lake is designated as NS Zone. In this zone uses already in place upon passage of the zoning by-law can continue, but use is otherwise restricted o passive recreational use. No new buildings or structures are permitted, nor are expansions or enlargements of existing structures, including decks and docks.

Natural State Conservation (NSC) Zone – This zone is dedicated to long term conservation of land in a natural state. Buildings and structures are not permitted. Land locates south of Blackrock Estates is NSC Zone.

Environmentally Sensitive (ES) Zone and Environmentally Sensitive One (ES1) Zone – ES zoning applies to some backshore wet areas including wet areas adjacent to wetlands. Most of the lake's best wetlands are designated as ES1. Uses are generally limited to passive recreational use and existing buildings and structures. No new buildings or structures, or additions/enlargements are permitted. However, Flood, erosion and sediment control structures may be permitted if approved by the Ministry of Natural Resources or the Department of Fisheries and Oceans Canada.

Public Land

The Ministry of Natural Resources (MNR) has established policies for Ontario's Crown land. While the township has established zoning for public land (generally NS, NSC

and ES), this is in essence an indication of the township's intent and is not legally binding on MNR; MNR's designations take precedence.

G359 Multiple Resource Management - Most of the Crown land and water around Blackstone Lake and the lake itself is designated as G359. This designation allows commercial resource harvest (trapping of furbearers, bait fishing, commercial fishing), electrical power generation, commercial tourism, sport hunting and fishing, etc. Sale of land is restricted and sale or lease for new cottages or hunting camps is not permitted. Temporary roads (logging roads, etc.) are to be rendered inoperative when the activity for which they were built ceases. New access roads may be considered. Existing permanent access roads can remain but may be closed seasonally. Mineral exploration and development of mines is permitted subject to the Mining Act. Aggregate extraction is also permitted, subject to the Aggregate Resources Act.

G359/DR3 Winter Deer Range – This designation applies to the south shore of Blackstone Lake and lands to the south and west, extending to the Georgian Bay. Policies for G359/DR3 are similar to those in place for G359. The primary difference is that there are special provisions to protect winter deer habitat (deer yards consisting of cedar and hemlock stands) scattered throughout the area. In essence, recreational trails, new roads and management of existing roads may be restricted to protect deer populations, consistent with wildlife management objectives. Aggregate extraction is not permitted on public land.

MAPS REFLECTING LAND USE, PRIVATE PROPERTY ETC ARE UNDER DEVELOPMENT AND WILL BE INCLUDED WITH THE FINAL REPORT

6.3 USE OF CROWN LANDS

The development of much of the shoreline of the Blackstone Lake has meant that there are fewer and fewer public 'places to go' on the lake. Indeed most people probably don't even know where crown land begins and ends. Traditionally people have enjoyed visiting locations away from the cottage in order to: picnic, swim, enjoy nature, take a break during a canoe-trip, camp, meet friends, find solitude etc.

Issue Statement: *We do not have enough public spaces on the Lake NOT APPLICABLE ???*

6.3.1 Campfires

Use of campfires have been a safety concern, since some cottagers worry that their investment and the beauty of our community could go up in smoke, while others appreciate the social values of a campfire. The issue of campfires is governed by the municipal 'burn bylaw' allowing campfires for warmth and cooking under controlled conditions. The Fire Chief has recommended that we designate fire pits on public lands since the threat of forest fire is much higher in non designated fire pits (typically from tree root underground fires).). (we **don't think we have any Crown land use areas that are consistently used for camping or picnicking. It is pretty spotty and we don't think there are any spots where fire rings would make sense. What do you think?)**

6.4 WASTE DISPOSAL

6.4.1 Septic Treatment Systems

A comprehensive survey would be needed to definitively gauge the variety, age and condition of waste treatment solutions around the lake. We do know that cottagers are concerned about the impacts of septic systems on the lake and public health. E-coli bacteria from untreated human waste can present serious human health threats, and phosphorus reaching the lake from sewage disposal systems speeds lake eutrophication and threatens cold water fish (lake trout) populations according to the following chain reaction: elevated phosphorus levels result in increased algae production; algae die and sink to bottom of lake where they decompose; decomposing algae use up precious oxygen at bottom of lake, effectively suffocating the deep water (cold-loving) fish such as lake trout.

Although the Province sets the building code for septic disposal systems and takes care of licensing new technologies, permitting and inspections are handled by local health units. In our case, this is the Parry Sound office of the Parry Sound District Health Unit.

BLAC has been a leader in championing septic system inspection and compliance. TOA has continued to undertake inspections of existing systems

6.4.2 Types of sewage treatment systems on Blackstone Lake

We expect a survey would demonstrate that Blackstone Lake properties have essentially four categories of systems for treating waste water from cottage toilets and sinks.

Category 1: We believe a high percentage of households use a combination of septic tank and leaching bed. In this system, waste water flows into a tank where solids settle out and scum/grease is trapped in surface baffles. The effluent from the tank then flows into a system of "leaching" tiles that allow the effluent to percolate into the porous sandy soil bed. In a properly installed and maintained system, soil bacteria and chemistry kill

harmful bacteria and remove a portion of the phosphorus from this now groundwater. Other factors aside, the further a leaching bed is from the lake, the greater the neutralization of harmful bacteria and chemicals. Solids accumulating in the bottom of the tank necessitate it being pumped out at regular intervals, depending upon frequency of use. For a detailed current discussion of how different tank/bed treatment systems work and their correct operation and maintenance see the CMHC website http://www.cmhc-schl.gc.ca/en/co/maho/gemare/gemare_009.cfm

Category 2: A lesser percentage are using a composting toilet system in conjunction with some sort of grey water disposal system for sink/shower wastewater. When properly maintained, composting toilets are clean, odour-free and release no harmful bacteria to the groundwater and significantly less phosphorus. Compost-like residues are disposed of seasonally, well away from water courses. Composting toilets are a sound environmental choice. If the grey water leaching system is built to code, it should result in phosphorus removal effectiveness similar to the regular leaching bed described above. Improper or no grey water treatment system can result in direct (overland) discharge of grey water (phosphorus, detergents) into the lake.

Category 3: A few cottages use an outhouse for human waste in conjunction with some sort of grey water disposal approach for sink/shower wastewater. Older outhouses are "legally non-conforming" (grandfathered), but this approach is no longer permitted within the building code. All new lots must have two sites suitable for a leaching bed (primary and back-up) and cottages are required to install some treatment system for toilet and sink wastes.

Category 4: In areas where a septic system is problematic, cottagers use a holding tank for toilet wastes. In these situations, grey-water drains into either the holding tank as well or is discharged separately (see discussion above). The cost of regular pump-outs suggests that most users of holding tanks drain their grey-water elsewhere. Similar to outhouses, holding tanks are legally non-conforming for older cottages but not permitted with new cottages.

6.4.3 Other Sewage Disposal Options

There are other licensed options for sewage treatment that are more compact and offer better removal of phosphorus. Some involve different types of leaching beds; other involve processes within the tanks. An alternative to the composting toilet is the incinerating toilet. In some cases costs are higher and maintenance more onerous, but benefits certainly warrant a closer look.

6.4.4 What else do we know about our septic systems?

Similar to cottage setbacks, leaching bed setbacks have increased over time. The current required setback is 30 metres (100 ft.)

Age of septic systems varies considerably as can be seen in figure 7.6. The lifespan of a properly maintained system usually falls between 20 and 30 years, but brand new systems can be rendered problematic through negligence (trucks backs up onto

leaching bed) or improper use. The vast majority of cottagers appear to understand the importance pumping their tanks; anecdotal reports suggest a high percentage have pumped within the past 5 years and one of our association initiatives is coordinating such activity. Virtually all new cottages have some sort of bath or shower and many alf have a clothes washer, perhaps even a dishwasher. Without careful avoidance of phosphate soaps/detergents, these appliances result in additional phosphorus loads to the treatment system and ultimately the lake as well.

6.4.5 Septic Treatment System Issues and Options

Issue 1: Grossly malfunctioning septic systems may be releasing dangerous bacteria and large quantities of phosphorus into the lake. A grossly malfunctioning septic system is one that allows untreated sewage effluent to enter the lake. This could be a result of

- an old metal tank that has rusted out and is leaking
- cracks in a concrete tank
- a tank that has not been pumped for so many years it is allowing solids to enter and clog the tile field
- all soil pore space in an old tile field has over life span of system become "clogged" with effluent minerals, and the effluent is now pooling on the surface of the bed and running overland into the lake
- the tile bed and perhaps underlying pipes/tiles have been damaged by being driven on or otherwise significantly weighted Septic re-inspection programs are conducted to identify grossly malfunctioning systems and to require that these systems be fixed or replaced.

Issue Statement: *The impact of waste disposal is a threat to the water quality of Blackstone Lake.*

Township of the Archipelago municipality has just completed a 3 year long re-inspection of all septic systems within their boundaries. Fourteen percent (14%) of approximately 5000 systems were identified as needing some form of remedial action. More than 400 systems had been improved to some extent within one year of program completion. The program was paid for by cottagers through a $10/yr property tax levy for 5 years. The municipality indicates that final costs were closer to $65 per cottage. Unfortunately, the local Health Unit chose not to participate in the program, and as such there was no agency with a mandate to force owners of identified systems to follow through with work orders. Compliance was largely voluntary.

The local health unit does not recommend committing further resources to reinspecting Blackstone systems ????? and does not appear to willing to participate in such a re-

inspection. Their position is that the 1997 program took care of the worst cases, and that to best limit phosphorus inputs to the lake, resources should instead be directed towards shoreline stewardship initiatives that create healthy, natural front yard buffers.

Impacts if not addressed
There may be sewage disposal system around the lake that are leaking effluent into the lake and causing significant environmental and public health impacts. Whether this is the case or not, it appears that cottagers would like some sort of reassurance that all reasonable efforts have been made to identify and fix such systems.

Option 1 That the BLAC should investigate all options for conducting another re-inspection program with mandatory follow up. Some possibilities include:

- a municipality-wide program. The municipality is not currently considering such a program.
- a lake-wide program that is paid for by cottagers (roughly $65 per cottage) through a tax levy

Regardless of the geographic scope of a re-inspection program, it appears that support and participation from the local Health Unit will be necessary to ensure work orders are followed through with.

Option 2 That only the oldest and least frequently pumped systems be reinspected. While this may result in some efficiencies, it may not be effective. Professionals in this field indicate that age is not always a good indicator of likely failure. A brand new system could be ruined by a large truck backing onto it. Further, it would require someone to pull all the permits at the health unit to assess age. Although the survey collected the age of systems, the survey guaranteed privacy, and survey results represent only about one third of the lake community.

Option 3 That cottager owners be educated as to how to identify if their system is malfunctioning, and then asked to fix/replace problematic systems. Neighbours could be encouraged to work together in their inspections, and a list of certified professional inspectors would be provided on the Association's website. However, without the active participation of the health unit to force the follow through of work orders,

Option 4 That we work towards making a septic re-inspection a mandatory condition of sale of a cottage. This is presently difficult. The municipality does usually learn of a sale until the deed is transferred on day of purchase, and hence the timing is problematic. We would however pursue participation with other associations to form a regional council to lobby the provincial government for changes to provincial laws that would prohibit the sale of residential properties unless the septic system passes inspection. In the mean time, we would try to seek the support of all real estate agents in recommending to all prospective purchasers to insist on a re-inspection. Notices to this effect could also be put on large road signs approaching the lake and on the BLAC website.

Issue 2: All properly working conventional (tank & leaching bed) septic systems result in an addition of phosphorus to the lake.

When considered cumulatively, the phosphorus releases become significant. The Ontario Ministry of the Environment calculates the carrying capacity (maximum number of building lots) of cottage lakes primarily on their ability to flush out phosphorus from septic systems. For their modeling purposes, they assume that every gram of phosphorus put down a sink or toilet ultimately reaches the lake. Although this is a slight oversimplification, it makes clear the point that

- all conventional systems have an impact on the lake
- human waste excluded, we can control what goes into our septic tanks and hence into the lake

Impact if not addressed

Lake water quality has been identified in our mini survey as of very high importance. The link between phosphorus inputs and lake quality is direct and very well established in literature. The number of cottages (septic systems) on the lake continues to increase. So too, does the number of water using appliances as existing cottages are modernized and older cottages replaced. Without a change in behaviour with regards to the types of products being used in kitchens and bathrooms, it should therefore be expected that phosphorus inputs to the lake will increase over time. It should then be expected that overall water clarity and intensity and frequency of algae blooms on the lake will also increase. One needs look only as far as the Kawartha Lakes to appreciate the impacts of phosphorus. Many shorelines are so choked with aquatic vegetation that cottagers must mechanically remove the vegetation just to be able to swim. These lakes are geologically and biologically different from Muskoka lakes in the first place, but have also been subject to more intense pressure from phosphorus inputs from cottages and agriculture.

Option 1 An intensive and extensive education program as to what should and should not go down drains & toilets should be conducted. This program should also ensure that phosphate-free products are being sold at the marina and cookhouse. Pamphlets explaining the merits of these products would be given to each and every customer purchasing anything at these two stores. An informational decal could be produced to go above sinks and toilets. This education program would also include best practices for pumping septic tanks. A frequently pumped tank results in a better working system and less release of phosphorus. Hot tub owners are educated regarding the draining of their tubs (e.g. let sit uncovered, then drain into ground away from lake – not into septic system).

Option 2 Cottagers who are exclusively using phosphate-free products are recognized through a stewardship reward program (non-monetary).

Option 3 Cottagers are provided with information detailing the effectiveness, cost, site appropriateness and licensing timing of new sewage treatment options. Various new technologies are being developed and tested that apparently have the ability to

significantly reduce the ultimate release of phosphorus into the lake. [A U-Links project is underway to produce such a guide]

Issue 3 –IF OUR LAKE IS LIKE MANY, a significant portion of cottages may be discharging grey water improperly. Speculative !!!

If true, Impact if not addressed
There are many reasons that direct discharges of grey water would lead to more phosphorus reaching the lake:

- most cottages (and hence grey water drains) are closer to the lake than their associated septic systems – therefore less soil minerals to remove phosphorus
- the discharge may be into soils that are not effective in removing phosphorus (wrong composition or not be deep enough)
- in the worst cases, grey water may be draining overland into the lake

Option 1 Strategies to curb illegal grey water disposal should be similar to those identified to curb grossly malfunctioning septic systems. An enforceable septic re-inspection system should first be sought. Failing this, an education program should be used to help cottagers realize the impacts of their illegal systems with a goal towards voluntary remediation.

6.5 Crane Lake Waste Transfer Station

Despite the many day to day grumblings about "the dump", The provincial trend in waste management sees responsibilities transferring from municipal to county levels, and smaller decentralized landfill sites being replaced by a system of larger centralized waste management facilities with local transfer stations.

Frustration has been raised over the years regarding limited and inconvenient hours of operation of the site. Without the budget for 7 days per week operation, it has been difficult to find a schedule that suits year round residents, week long summer users and weekend users. An up-to-date schedule of transfer station hours and alternate sites can be found on the township website

It has been a challenge to keep the landfill site clean. Garbage has been scattered by wind and animals throughout the surround forested area. Illegal "after hours" dumping at the gate to the site continues to be a problem and the accessible portion of the landfill site has at times been messy.

The problems of illegal dumping and site cleanliness have been raised over the years with the Township and the contractor, and significant progress has been made. Nonetheless, illegal dumping continues, and despite many proposals there is no clear community consensus on a solution. There has been talk of video camera surveillance

for the same purpose. What the community does agree upon however is that this problem needs a solution.

> **Option 1** Write a letter to municipality and contractor supporting efforts to prevent illegal and after hour dumping at gate. State clearly that the lake community would like to part of ongoing discussions and would be willing to assist where appropriate in finding a solution.
>
> **Option 2** Ensure that the issue is addressed in the "Stewardship Guide" (see Recommendation #1 in section 8.3) and highlighted in the orientation section for new owners and renters.

In earlier days, virtually no restrictions were placed on what could be disposed of in the landfill, no user charges were levied and there was no on-site monitoring of dumping. Over the years, restrictions and fees have been put in place by the municipality and a contractor is now onsite at all scheduled operating hours.

Recycling facilities became available about 15 years ago and have been managed by Muskoka Container Services ???. Some materials can be set aside for "re-use" while others are taken off site for further processing. Objectives of these measures include:

- keeping the site clean;
- promoting/enforcing recycling for environmental reasons and to extend the lifespan of the site;
- ensuring that only those paying local taxes are able to use the landfill;
- maintaining the "no-fee" nature of the dump for small scale domestic garbage, and charging for larger scale dumping (appliances, building materials and brush) with a portion of the fees collected going towards the cost of transporting materials from the transfer site to other municipal processing sites; and
- avoiding hazardous materials in the dump.

As of 2007, recycling has become mandatory, and users will be required to use clear garbage bags so that the attendant can verify compliance. Contractor attendants are now expected to stop every vehicle entering the site to check for a permit card and to ensure garbage/recycling has been separated. It should be noted that recycling will extend the life of the Township landfill arrangement.

There is minimal support for the stewardship efforts of the lake community with regard to the safe disposal of hazardous waste. Cost is an issue with the Township, but without a local means for dealing with hazardous waste, unscrupulous individuals will dispose of hazardous waste with domestic garbage, and the environment will be threatened.

Option 1 The immediate community using the waste transfer station be consulted regarding expected service level (and potential implication to level of taxes!!).

Option 2 The mandatory recycling program be publicized in BLAC communication materials and renters and new owners be targeted through the 'Stewardship Guide".

Option 3 The Blackstone community advocate to the municipality for the means to deal with hazardous waste on a regular on-going basis.

6.6 DEVELOPMENT PLANNING

Development around our lakes is controlled mostly through municipal planning.

Land-use Planning in Ontario is regulated by the Planning Act of 1990 as amended, administered by the Ministry of Municipal Affairs. Regional and local land use issues are dealt with at the District and Municipal level. In the Parry Sound area there is "single tier" planning. There is not higher level (e.g. county or regional municipality) official plan. Consquently, the TOA Official Plan establishes the regulatory zoning bylaws. Virtually all objectives and controls relevant to lake development are found within the lower tier Official Plan and Bylaws. At a lot level, these include for example minimum lots sizes, minimum set backs from lot line and shoreline, and maximum number and size of structures. At a lake level, Official Plans and bylaws set out to protect sensitive habitats (e.g. wetlands), steep/sensitive slopes, and to control the broad uses of land (e.g. residential vs. commercial vs. tourism vs. industrial extractive). Lot severance is administered at the County level.

A number of opportunities exist for the participation of individuals or organizations such as the Blackstone Lake Cottage Owners Association (BLAC in land-use planning at the watershed level. Official Plans and Zoning Bylaws are reviewed on a regular basis, usually every 5 years. A review took place recently and a new comprehensive zoning by-law was approved in 2008. Public consultation occurs and input from groups and individuals alike is being sought. On specific issues, presentations to Municipal Council can be made at any time with the objective to change or amend zoning bylaws. On several instances Blackstone representatives have addressed Council on land-use issues over the past years.

If groups or individuals are not satisfied with the land-use and zoning decisions arrived at the municipal level, any party can appeal these decisions to the Ontario Municipal Board (OMB) as a last resort. More importantly, lake associations and neighbours of persons applying for zoning changes or variances, are notified by the TOA in advance of meetings concerning these applications. This provides an opportunity for proactive responses on part of the lake community. Similarly,

neighbours and the BLAC are notified by the Township of the Archipelago when an application for a lot severance (a "consent") is received. Comments regarding severances are welcomed.

Development controls also flow from directives in the various provincial ministries and others. For example, the Ministry of Environment establishes the maximum number of cottage lots permitted on each cold water lake (suitable for trout populations) in cottage country based on the lake's phosphorus regime. The Ministry of Natural Resources in conjunction with the federal Department of Fisheries and Oceans regulates and permits the development of docks and other shoreline structures. Local Health Units in Ontario issue permits for residential sewage treatment systems. Abstracts from the municipal planning bylaw are provided in Section 6.8. Some specific provisions are referenced below as they arise in the "Issues and Recommendations" section.

6.7 LAND USE ISSUES AND OPTIONS

Development within the waterfront and along the shoreline especially has a negative impact on the natural environment, degrades water quality and harms the social environment by reducing the number of 'places to go' to enjoy a wilderness experience. A balance is therefore sought that will allow for development that will sustain natural and social environments *in the long term*. Given that the vast majority of the lakes' shoreline has already been developed, the most significant present threats are not large, single point source, but instead small, incremental changes to many smaller parts of the lakeshore and watershed at the individual lot level. In other words, there should be more concern about the small things being done on existing cottage properties as compared to the risk of a major new condominium/resort development or gravel pit.

Whereas the preceding sections of this lake plan have identified 'options' for consideration before recommended action are developed (see Section 7), land-use issues have received more extensive consultation and are presented as top priority recommendations. The guiding principle for identifying recommendations in this section is that uses, policies and controls that slowly and cumulatively allow for degradation of the natural and social environment over time need to be addressed. The Blackstone Lake community has the capacity to influence municipal planning policies and bylaws and it should exercise that role in a goal oriented and proactive manner.

The following issues and recommendations flow from the principles identified above and the perspectives of cottagers as expressed in the consultations and in feedback to the July 2009 Draft of the Lake Plan WHICH WE HOPE WILL HAPPEN FROM AUGUST 2009 THROUGH MAY 2010

Issue Statement: *Over-development has a negative impact on the natural environment, degrades water quality and harms the social environment by reducing the number of 'places to go' to enjoy a wilderness experience.*

6.7.1 Minor Variance Requests:

When the municipality receives an application for a minor variance request, it circulates the application to neighbours of the applicant and to the BLAC President for comment. There is usually a two week window to submit comments before the committee of adjustment meets to make a decision. In some cases the committee decides to conduct a site visit and as such postpones decision making. It is now widely recognized by scientists and planners that the most ecologically sensitive and critical area of a cottage lot is that which is adjacent to the water.

Although minor variations are by themselves perhaps insignificant, their approval should be viewed in the context of similar applications that will be made on the lake over the next 50 years and their ensuing cumulative impacts. The protection of sensitive and critical ecological function of the near shore areas and the minimization of built "visual pollution" as seen from the water should be sought.

Recommendation

Requests for minor variances to the existing bylaws for waterfront properties should be considered by the Municipality in the context of a set of General Development Principles to be developed as part of the implementation phase of the Lake Plan.

6.7.2 Applications to Sub-divide (Consents)

A lot owner may apply if they wish to divide their lot into 2, or more, smaller lots. Presently, new lots created this way need to have at least 45m frontage. Our lakes are virtually "ringed" with cottage development, and consequently the few undeveloped stretches of shoreline remaining are of high ecological and social value by virtue of their scarcity. Severance of larger shorelines/lots into smaller ones will reduce the little "breathing space" that is left on the lake.

Recommendation

That the Municipality be encouraged to enact a zoning bylaw amendment increasing the minimum shoreline frontage for new lots on Blackstone from 45 m to 100m. NOTE: This new frontage requirement would not apply to the two large lots that are already subject to more restrictive severance requirements.

6.7.3 Vegetation Removal and Visual Pollution in the Near-shore Area.

Natural, native vegetation plays a crucial role reducing the movement of phosphorus and sediments from land to water. This is especially true following larger storm events. Research clearly establishes that grass is nowhere near as effective as natural vegetation in this regard. Sedimentation of the near shore areas is often disastrous for spawning fish. Native vegetation supports native species. Shoreline vegetation provides shade and refuge for fish and invertebrates.

Most cottagers value a natural look to the lake, and they come to the lake to avoid the relatively barren landscapes of the city. Most survey respondents indicated they noticed

a reduction in shoreline vegetation compared to 5 years earlier. The clear-cutting of shoreline areas and other significant removal of vegetation, over and above the needs for access trails and views from cottage to lake, impacts significantly on the aesthetic enjoyment of lake users.

Extensive clearing or removal of vegetation on lots in general but along the shoreline especially is leading to significant impairment of ecological function and aesthetics. A majority (55%) of survey respondents indicated that they wanted the municipality to regulate shoreline alteration. Currently, the municipality tries to limit shoreline disturbance to 25% of the waterfront, but this is a guideline in the Official Plan, and not a bylaw. Hence there is no enforcement capability.

The Official Plan requires that at least 50% of waterfront lots to remain as "naturalized open spaces". Included in their definition of naturalized open space is grass and open bedrock. It is therefore still possible to clear all native vegetation and plant grass on any non bedrock surfaces and remain compliant. Further, the bylaw does not distinguish between sensitive front yards and less sensitive back yards; the back yard could be planted with grass the front clear cut and still be in compliance. New examples of extensive vegetation removal are seen each year on the lake, and this trend can be expected to continue as more lots are developed, and as cottages on the rest of the lake change hands. In the worst cases, lots are clear cut from cottage to water's edge. It appears that the existing Official Plan guideline by itself is not effective.

In order to protect water quality and the overall health of Blackstone Lake, the single most important change land owners need to make is to protect the shoreline vegetation zone within 15m of the high water mark (vegetation includes trees and small plants). The depth of the buffer zone has three major effects: mitigation of storm-water runoff (surface flow); uptake of nutrients (subsurface flow from septic beds and soakaway pits); and visual preservation of the natural shoreline. For cottages with a 20m (66 ft) building setback this recognizes that there needs to be about 5m (15 ft) of vegetation disturbance around the cottage for air circulation, fire safety and maintenance. The depth of the shoreline vegetation buffer zone should be as large as possible but the minimum size should be 15m (50 ft). For cottages with less than a 20m (66 ft) building setback exceptions will be required.

Recommendation

That the Township of the Archipelago be encouraged to enact a tree-cutting bylaw relating to the removal of trees and vegetation on waterfront properties.

As a practical matter, this recommendation is proving controversial in other jurisdictions. At a minimum, the Municipality needs to be made aware of the community's concerns for the preservation of natural shoreline vegetation and the environmental impacts of development in general, and shoreline hardening in particular, through the General Development Principles to be developed as part of the implementation phase of the Lake Plan. These principles to include limiting the removal of vegetation in a 15m shoreline buffer zone save for an allowance up to 5m wide for access to the shore and dock area.

That a major education initiative be launched to help cottagers appreciate the important ecological and aesthetic role of trees and vegetation. Cottagers to be encouraged to minimize further disturbance, and to engage in rehabilitation of already disturbed areas. Education of new owners will be especially important. Workshops to demonstrate rehabilitation strategies may be offered, and the BLAC could help to coordinate the procurement and distribution of seedlings and other materials for rehabilitation.

6.7.4 Expansion or Replacement of Legal Cottages within the 20 m Setback

Over the past 20 years, some older cottages closer than 20 metres (66ft) to the water (legal, non-conforming) have been knocked down and replaced with much larger cottages that are the same non-conforming distance from the lake. These large, modern looking cottages often have a large visual impact on the lake aesthetics due to their closeness to the water, and may well have led to impaired ecological function by way of larger building footprint. A RISK OR CONCERN ????

There are many legal non-conforming older cottages within the 10-20m setback zone that will sooner or later require replacement. Within the existing regulatory framework, it is very likely that many larger cottages will emerge within this zone. 18.5m is significantly wider than many of the existing structures, and with no height restrictions, the part of the new cottage visible from the water may increase substantially with an associated increase in visual impact.

Recommendation

That TOA be encouraged to enforce the existing bylaw for structures on waterfront residential lots within the 0-10m and 10-20m (0-33ft and 33-66ft) setback. That, the General Development Principles to be developed as part of the implementation phase of the Lake Plan include as a principle that requests for minor variances to the existing bylaws for waterfront properties in the 0-20 meter zone only be granted if there are compelling circumstances.

6.7.5 Legal, Non-conforming Boat Houses.

Anecdotal feedback so far suggests that (highly visible) boathouses are not wanted by the vast majority of cottagers. Bylaw prevents their replacement, and hence some are in poor states of repair. As boat size and investment has increased, so too has the possibility of non-conforming covered boat slips that would be for the most part also highly visible. We believe that cottagers do not want to see a lake ringed by covered boat slips.

Recommendations

That educational materials be provided to the community regarding the zoning bylaw provisions for accessory buildings and marine facilities, specifically including information on minimum water setbacks and the existing prohibition on covered boat slips. That, the General Development Principles to be developed as part of the implementation phase of the Lake Plan include as a principle that due consideration be given to all aspects of the 'viewscape' so that visual disturbance of the natural shoreline is

minimized and that existing, legal shoreline structures, such as boathouses should be low-profile and neutral in colour.

6.7.6 Backlot development and co-ownership (fractional ownership)

It can be expected that as vacant but 'buildable' waterfront lots within the municipality become hard to find, pressure for backlot development will increase. Without a strong position from our lake community, municipal councillors may be convinced by a strong development lobby to relax the minimum lot size for backlots.

If minimum lot size were to be reduced, the lake would be subject to increased ecological and social impacts. It is likely that municipal rights of way would be developed as lake access points and more boat-related impacts would result.

Recommendation

That the TOA encouraged to enforce the existing bylaw regarding back-lot development and not allow any reduction in minimum lot size for back-lots.

6.7.7 EXTRACTS FROM THE TOWNSHIP OF THE ARCHIPELAGO ZONING BYLAW

The preceding sections of this land-use section of the lake plan were influenced by the new municipal zoning by-law. Relevant extracts are abstracted below. The full zoning bylaw document is available from the municipality or on-line at www.thearchipelago.on.ca . Township zoning maps are available on CD-ROM from the municipality.

6.81 New By-Law Highlights:

INSERT LATER

6.8.7.2 General By-Law Provisions:

INSERT LATER

6.8.3 Waterfront Residential Zones:

INSERT LATER

6.8.4 Other Residential as well as Rural and Environmental Protection Zones:

INSERT LATER

7 RECOMMENDATIONS AND ACTION PLAN

7.1 A COMMUNITY APPROACH

In the introduction to this lake plan document (Sections 1 & 2) the values and vision for a community-base approach were articulated.

Through our work to date, as well as informal discussion, it is clear that the community is coming together and becoming engaged. The challenge for the future is to build and expand upon the strong base of community support and to engage additional participants in the implementation of the recommendations

The lake planning process has identified issues and even more options for dealing with the issues.

The recommended options that are listed in the following sections all reflect high priority issues. Overwhelmingly the preferred approach is one of EDUCATION and COMMUNICATION coupled with STEWARDSHIP. In only a few cases are REGULATORY actions proposed.

Some of the options developed in the preceding section of the lake plan are not being recommended for immediate action – there are just too many, or the time may not be right. A number of these are nonetheless believed to have merit and should be revisited over time.

7.2 PRIORITY ISSUES

Eight high priority issues have been identified that reflect the values and concerns expressed by the Blackstone Lake community. Each issue affects the natural, physical, or social environment of the Blackstone Lake area. The statements in figure 7.1 are intended to capture the essence of each issue.

Figure 8.1 Twelve Priority issues

OUR PRIORITY ISSUES

1. Water Quality

The impact of property development, waste disposal and boating is a threat to the water quality of Blackstone Lake.

2. Development

Over-development has a negative impact on the natural environment, degrades water quality and harms the social environment by reducing the number of places to go to enjoy a wilderness experience.

3. Natural Shorelines

The environmental and aesthetic value of **natural shorelines** is threatened by removal of vegetation and the introduction of man-made structures.

4. Water Access

There is only one option for our many water access cottagers for docking, parking and boat launching access.

5. Power Boating

Inconsiderate **power boating** pollutes a lake, damages the shoreline, puts swimmers at risk, and shatters the tranquility of the lake**.**

6. Wildlife

The preservation of **wildlife** habitat is threatened by development and increased human activity.

7. Tranquility & Night Skies

Excessive noise from boats, snowmobiles, traffic and cottage sites could reduce the **tranquility** and 'quiet enjoyment' of the natural environment at the lake. Excessive lighting negatively effects enjoyment of the **night skies** and the natural environment.

8. Public spaces & Traditional Rights of Way

Property development is causing **traditional rights-of-way** such as portages and hiking trails to be re-routed or abandoned: this reduces recreational opportunities for enjoyment of the wilderness and reduces the number of "places to go". We don't have much in the way of public use lands nor a consensus on how they might be shared.

Issues that appear under control but still ones to watch:

Sustainable Forestry Management The community is not aware of the importance of sustainable forest management in our area. We don't have much in the way of public use lands nor a consensus on how they might be shared.

Water Levels. Fluctuating **water levels** have the potential to create navigational hazards, have a negative impact on the natural environment, cause problems for water access properties and require the construction of extensive docks.

Mining Claims Risk. Nothing active, but a remote residual possibility given our history. Again need to be aware. Some regulatory updates to Mining Act underway.

7.3 RECOMMENDATIONS

Several options for dealing with the priority issues have been presented (or will be) presented in the preceding sections of this document. The recommended options for dealing with each issue are now presented with an Action Plan.

The majority of recommendations related to education, communication and stewardship: only a few anticipate a need for regulatory action.

One recommendation cuts across several issues and is presented first.

Principal Recommendations

#1 Produce a Practical Stewardship Guide for Blackstone Lake and Area

Adopt and disseminate a practical Stewardship Guide to encourage cottage owners, renters and others to become good stewards of the land by promoting awareness about the impact of their activities on water quality and the natural environment.

The Guide should focus on environmental stewardship and especially the importance of natural shorelines. It will include information on 'how to':

- Reduce or eliminate laundry and dishwasher detergents containing phosphorus;
- Eliminate the use of lawn fertilizers and other garden chemicals such as pesticides and herbicides;
- Select the best of the new septic technologies
- Properly drain a hot tub
- Maintain and restore natural shorelines
- Migration from 2 stroke to 4 stroke engines

A special section will provide orientation to cottage country for new owners and renters

Priority 1 – Water Quality

#2 Water Testing

Continue the existing volunteer water quality monitoring and produce an annual report of water quality testing resultes and make this available to all property owners on the lake, TOC municipal officials and other stakeholders. Be willing to invest BLAC funds as necessary to maintain the program. Information to be disseminated via website and other means.

#3 Septic Systems & Grey Water

Educate cottage owners to identify if their septic or grew-water disposal system is malfunctioning, and encourage them to fix / replace problematic systems.

Over time, working with other lake associations and the GBA, require that septic inspection be a mandatory condition of sale of a cottage. In the mean time, seek the support of real estate agents in recommending to all prospective purchasers that they insist on a septic system inspection.

#4 Municipal Landfill and Waste Disposal

Work with TOC to support the improvements at the Crane Lake Transfer station and to support efforts to improve recycling ratios and effective disposal of hazardous wastes.

Priority 2 – Development

#5a Support the enforcement of existing zoning bylaws

5a.1 Regarding Back-Lots: Encourage Township of the Archipelago to enforce the existing bylaw regarding back-lot development and not allow any reduction in the minimum size for back-lots.

5a.2 Regarding redevelopment of legal cottages within the 0-20 m (0-66 ft) setback: The Township of the Archipelago is encourage to enforce the existing bylaw for structures on waterfront residential lots within the 0-10 m and 10-20 m (0-33 ft and 33-66 ft) setback.

5a.3 Regarding boathouses: Provide educational materials to the community regarding the zoning bylaw provisions for accessory buildings and marine facilities, specifically including information on minimum water setbacks and the existing prohibition on covered boat slips.

#5b Encourage the Township to consider bylaw amendments to maintain lake character, preserve shoreline vegetation and protect wetlands and significant habitat.

In conjunction with the next review of the Township of the Archipelago' Official Plan, and subsequent updating of zoning bylaws:

5b1. Regarding the protection of the shoreline vegetation zone: encourage the TOC to enact a tree-cutting bylaw relating to the removal of trees and vegetation on waterfront properties.

5b.2 Regarding applications to sub-divide: Encourage the TOC tp enact a zoning bylaw amendment increasing the minimum shoreline frontage for new lots on Blackstone Lake from x m to y m. **(do we need this given relatively few lots?)**

#5c Establish General Development Principles

Increase awareness of the community's development values by establishing and publishing a set of "Development Principles" for Blackstone Lake & Area that would be shared with the community and filed with the Township of the Archipelago as a "benchmark" for planning decisions. Over time, develop a capacity to respond to individual property owners seeking advice on environmentally-sound approaches to development.

The "Development Principles" should reflect the values endorsed in the Lake Plan. Where conflicts arise between development and environmental stewardship a balance approach will be sought with the emphasis on environmental stewardship (the precautionary principle) with a goal of maintaining or developing a natural diverse habitat for future generations to enjoy.

The Development Principles would include:

- Natural Vegetation: Avoid significant removal of natural vegetation in a 15 m shoreline buffer zone, save for allowance up to 5 m wide for access to the shore and dock area.
- Environmental impact: Minimize the environmental impact of development on: streams, wetlands, wildlife and fish habitat and require formal evaluation of any such features in the development approval process.
- Variances: Only allow variances to the existing bylaws for structures on waterfront residential lots within the 0-20m (0-66ft) setback if there are compelling circumstances.
- Viewscape: Minimize visual disturbance of the natural shoreline and the horizon. Existing legal shoreline structures, such as boathouses should be low profile and neutral in colour.
- Avoiding Shoreline Hardening: Maintain natural shoreline habitats by avoiding 'shoreline hardening' through the creation of manmade structures such as retaining walls.
- Intensification of Development: Maintain , but do not intensify, the existing level of commercial development of waterfront property on Blackstone Lake. !!!!

#5d Lobby neighboring municipality regarding noise and water quality concerns.

Priority 3 – Natural Shorelines

#6 Landscape Alternatives

Develop an education program to inform property owners about landscape `alternatives to manicured lawns, paved driveways and other impervious features, non-native species, waterfront retaining walls and sandy beaches to help reduce undesirable and inhospitable artificial landscapes along the shoreline.

#7 Natural Landscape Remediation and Model Sites

Take specific action to promote natural landscaping, for example: (1) through advice on remediation of problem sites in cooperation with amenable landowners; or (2) by establishing model sites in appropriate areas of the public-use lands. Improve areas of both the littoral and riparian zones with input from Conservation Authorities or MNR. For example: (1) provide in-water rehabilitation by adding downed native logs and other woody debris, as well as carefully placed rocks near the shoreline, to create micro-habitats for aquatic species and to protect the natural substrate; and (2) create a buffer of native plants, shrubs and trees at shoreline sites to discourage erosion and prevent sediment runoff. (3) Continue our effort to build bass nests to assist spawning.

Priority 4 – Access Issues and Water Levels

#8 Access Issues and Options

Work with the TOA to ensure that plans are in place to address the eventuality that Anglers' Inn can no longer provide parking, docking and boat launching. This is obviously a top priority.

#9 Navigational Hazards

Although there are relatively few water hazards on Blackstone Lake, we should be diligent in ensuring these are well marked both at the physical site and on maps.

#10 Suitable Dock Design

Over time, distribute a pamphlet containing appropriate existing information and advice on environmentally appropriate dock designs for challenging locations due to water level fluctuation, including appropriate materials to use.

Priority 5 – Power Boating

#11 Boating Code of Conduct

Adopt the 'Boating Code of Conduct' and promote 'friendly boating' with a focus on safety by publishing the codes so it is available to residents and visitors along with a boating map through rental agreements, real estate agents, the OPP Marine unit and any marinas.

#12 Promote use of Environment-friendly motors
Promote the phasing-out of old, polluting 2-stroke motors in favour of new, environmentally-friendly 2 stroke and preferably 4-stroke motors on the lake; in the interim promote the use of environment-friendly 2-stroke lubricants.

#13 Invasive Species and Boat Cleaning
Increase awareness of the threat from invasive species such as zebra mussels through educational materials, including the posting of a sign at Angler's Inn to alert hose who might be launching a boat.

#14 Dock Watch
Over time, consider issuing 'cottage-watch' signs for mounting at the end of docks or on shore. Expand the vehicles for communicating the location of fire pumps and offer regular opportunities for training.

Priority 6 – Wildlife

#15 Support educational opportunities with the MNR and others that promote the preservation of wildlife habitat and link to initiatives that encourage cottage owners to maintain natural vegetation at their shoreline. Over time, expand this into a comprehensive rare and exotic species inventory for the area.

#16 Protection of Rare Species
Develop and education program in conjunction with the MNR regarding the protection of rare species' habitat (including threatened and endangered species) and provide examples of how to naturalize private property to encourage rare species establishment. Over time, work with the TOC to ensure that the officil plan and zoning by-laws recogize and protect significant habitat.

#17 Promotion of Fish Conservation
Continue to work with MNR in evaluating success of fish stocking efforts and monitoring spawning activity. Publish results and champion 'catch & release' fishing except for immediate eating.

Priority 7 – Tranquility & Night Skies

#18 Quiet Time
Promote Sunday morning before 10:00 a.m. as 'quiet time' on Blackstone Lake**.**

#19 Noise By-Law – do we need one
Investigate opportunities to reduce noise pollution – notably the Motocross/ATV facility at the Ontario Camp for the Deaf.

#20 Exterior Lighting

Through BLAC, provide educational materials about reducing night-time exterior lighting; for example provide sketches of how to design installations, list products to use and places to buy them.

Over time, conduct a night-time light inventory to establish a baseline from which yearly progress can be tracked: develop a strategy to eliminate light pollution "hot spots".

Over time, work with the TOC to update lighting laws in order to require or encourage light abatement and reduce "light trespass". Specifically require that a property owner may only light their own property and that illumination of adjoining properties be prohibited. Require that all lighting located within 50 ft (12m) of open water should be a low cut-off type.

Priority 8 Public spaces & Traditional Rights of Way

#21 Maintain trails and portage access points

Through volunteer efforts, maintain local canoe and snowmobile routes and hiking trails. Maintain shoreline access points for portage and hiking trails and other rights-of-way around Blackstone Lake and post signs at the shoreline marking access points.

#22 Public Launch Facility

Should we have one? A better one than the rough path by the roadside? POV needed.

#23 Keep Rights of Way accessible

Request TOC, or appropriate agencies, enforce regulations to maintain rights of way, including recognized portages in the Blackstone area.

7.4 ACTION PLANS (NEXT STEPS)

Once the Lake Plan has been fully vetted and agreed by our various stakeholders, it should be formally endorsed by both the BLAC and BECA membership. A significant communications effort will be required to start the implementation process, to marshal significant volunteer resources and to keep all stakeholders, including the Township of the Archipelago informed.

Several of the key issue areas have been or are being addressed already.

Those recommendations that fall under the jurisdiction of the TOC will need to be explained to municipal officials and presented to Council.

Stewardship, communication and education actions will require a coordinated volunteer effort.

In every case, it is proposed that a broad cross-section of the community, and –where possible- youth, be involved. In implementing the recommendations it will also be important to find ways to measure and celebrate success and tell more stories like the ones this report started with.

This is just the beginning!

GLOSSARY and APPENDICES NOT INCLUDED