Stewardship

March 2010

Muskoka
WATERSHED COUNCIL

Contents

Environmental Stewardship

Environmental stewardship, referred to in this report simply as stewardship, is the act of taking responsibility for the well-being of the environment and taking action to restore or protect that well-being. This will reduce the impact of our daily activities on the natural environment.

Stewardship ranges from relatively simple actions by individuals to large-scale programs involving organizations and governments and requiring complex approaches. It involves the assessment, protection and rehabilitation (when needed) of natural ecosystems.

Individual stewardship can include such activities as participating in bird counts, restoring damaged wildlife habitat, planting trees and native species on one's property, subscribing to woodlot management best practices, naturalizing shorelines, reducing home energy consumption, considering putting your land into trust or conservation easements, or choosing to drive an energy-efficient vehicle. It can include lobbying local, provincial and federal decision-makers for community-wide environmentally responsible initiatives, and voting for elected representatives and political parties with strong environmental policies and programs.

More complex challenges – such as developing effective waste management, developing energy from waste projects, starting community composting and recycling programs, introducing low impact development or community-wide energy audits – require action by groups, organizations and/or local governments.

On a global, national, regional and local scale we are challenged to become good environmental stewards remediating environmental damage and passing on to our children a healthy planet Earth.

The Challenge Worldwide

Planet Earth has some problems—serious problems. In September 2009, the United Nations Environmental Program (UNEP) provided an update on the most recent peer-reviewed scientific studies on climate change. The conclusions far outstripped even the most sobering predictions of the 2006 report of the Intergovernmental Panel on Climate Change (IPCC).

They indicated two striking trends: Many of the predictions at the upper end of the IPCC's forecasts are becoming ever more likely; and emerging science indicates that some events thought likely to occur well into the future are already happening or set to happen far sooner than previously thought.

The UNEP report offered the following in support of those findings:

- Acidification of oceans and its impact on shellfish and coral reefs is already appearing along the California coast, decades earlier than predicted;
- Losses from glaciers, ice sheets and the polar regions appear to be happening faster than anticipated in both the Greenland ice sheet and ice shelves in Antarctica indicating that sea levels could rise by up to two metres by 2100 and five to ten times that in the future;
- Thresholds or tipping points may now be reached in a matter of years, including dramatic changes to the Indian subcontinent's monsoon, the Sahara and West Africa monsoons, and climate systems affecting a critical ecosystem like the Amazon rainforest;
- Losses of tropical and temperate mountain glaciers affecting the drinking water, irrigation and hydro-power of between 20 to 25 percent of the human population;

- Changes in regional climates resulting in losses of ecosystems and species, and desertification and the spread of dry lands northwards and southwards away from the equator. Drought currently affects more than 41 percent of the planet and that could grow to close to 70 percent of the planet's soil by 2025, greatly affecting the ability of the planet to provide adequate food for the global population.

But changing climate is not the only stress on the planet. In May 2009, a joint report of the World Resources Institute, UNEP, the United Nations Development Programme and the World Bank provided the following health facts:

Almost 4 million children die each year of acute respiratory infections linked to indoor and outdoor air pollution. Another 3 million children die each year of diarrheal diseases related to a lack of clean water and sanitation. In developing countries there may be as many as 3.5 million to 5 million acute pesticide poisonings per year, with millions more people experiencing lower but still dangerous exposures.

While most of these statistics assess conditions in the developing world, environmental threats to health in the industrialized nations are also of concern. In the wealthier countries these stem both from industrial pollution – including air pollution and toxic wastes – and biological sources such as food-borne disease.

More than 100 million people in Europe and North America are still exposed to unsafe air, with some air pollutants proving more difficult to control than expected. The incidence of asthma is rising dramatically throughout the developed world and environmental factors appear to be at least partly to blame.

The excessive use of fertilizers is disrupting coastal ecosystems, leading to harmful algal blooms, fish deaths and risks to ecosystems as well as human health. Biological contamination is not a thing of the past as demonstrated by the 1993 outbreak of cryptosporidium in Milwaukee or the *E. coli* outbreak in Walkerton in 2000.

As well, increasing international travel and trade is providing new opportunities for the spread or re-emergence of infectious diseases. In the past two decades, some 30 'new' such diseases have appeared, including Lyme disease and Ebola, while other previously controlled ones have returned with a vengeance.

Add to that list, continuing worldwide problems related to deforestation and the erosion that invariably follows, and the dumping of waste in our oceans, lakes and rivers again threatening major food sources. Water pollution, free withdrawal from naturally limited aquifers and climate change pose serious threats to the world's freshwater resources. Human impacts on the environment have become global in scale.

The Challenge in Muskoka Watersheds

The term watershed is used to describe the land area drained by a river, stream, or creek. It includes both natural wilderness areas; areas that have been modified for human use such as industry, agriculture, transportation and communication corridors; and rural, waterfront and urban areas that accommodate streets, houses, stores, schools and parks.

The overall health of the watershed is determined by the impacts of nature and human activity on every square foot of that land, as well as on the water bodies within the watershed. That includes the amount and quality of the water in the lakes, rivers and streams; the contaminants and pollutants that enter them from precipitation, run-off, and storm water; the health of the forests, wetlands and shorelines that border those water bodies; and the human activity as we produce goods and services, grow our food, move from place to place and enjoy our recreational and leisure time.

Watershed Report Cards in 2004 and 2007, as well as an interim report card in 2008, indicate that the watersheds lying totally or partially within the District of Muskoka are generally healthy. The quality of the water in our lakes and rivers is very good both for recreational purposes, and, with appropriate treatment, for drinking.

Muskoka on the southern edge of the Canadian Shield is well forested, with over two-thirds of the total land mass covered with transitional mixed forest of soft and hard woods. Muskoka is also blessed by the fact that the crown land that totals almost a third of the total land mass is well managed with sustainable forestry practices in place. That is also the case in Algonquin Park where the source waters for the Muskoka River watershed are located.

The wetland coverage in Muskoka is approximately 12%, which is only marginally more than the provincially recommended standard of 10% wetland coverage for healthy watersheds. Although a large percentage of those wetlands remains intact and functioning, relatively few have been evaluated under the Ontario Wetland Evaluation System (OWES) and, therefore, are not provided protection from development under the provincial policy statement.

As well, the impacts of human activity on Muskoka watersheds are generally well-managed. Tertiary level waste management programs are in place throughout all urban areas, and septic system re-inspection programs are in place throughout waterfront areas of the district. As well, water-testing programs that monitor water quality in lakes and rivers have been in place for almost 30 years.

Perhaps most importantly, area and regional governments have worked closely with cottager and ratepayer organizations and non-profit groups such as the Muskoka Heritage Foundation and the Muskoka Watershed Council in promoting conservation and protection of natural areas, shoreline naturalization initiatives and lake plans that support best practices, and regular science-based monitoring of overall watershed health.

By any measure, the current health of Muskoka watersheds is largely a good-news story. However, it would be naive and incorrect to suggest that there are not some issues on which vigilance is essential, and some challenges that need to be addressed.

- The natural beauty of the area, its reputation as a desirable vacation area, the quality of lifestyle available, and its proximity to major population centres, combine to make Muskoka a prime candidate for growth and development. While that growth creates jobs and contributes to the economy, it also places significant stress on the natural environment that is so essential to the continuing economic sustainability of the area.
- Some of the tools that allow for the control and management of growth are not in place in all parts of Muskoka. Regulatory bylaws and zoning that control filling of wetlands, protection of forested areas, hardened shorelines and site alteration are examples. Some of those kinds of tools are limited only to waterfront areas. Without effective tools, municipalities are too often unable to exert appropriate control on development.
- Controlling pollution on the ground and preventing its impacts on water bodies is one thing. Contaminants arriving by air is quite another and the region faces that challenge on a daily basis as prevailing winds carry them from the Ohio Valley and the major population centres of southern Ontario. They place a major stress on watershed health.
- Although Muskoka is well forested and most of the forests are well-managed, in some areas there is significant fragmentation from a combination of highways, logging roads, high levels of development around lakes and rivers, and communication corridors. Maintaining interior forest cover and large wilderness areas to support ecosystems and wildlife is a particular challenge as a result.
- Wetlands in the Muskoka area form only 12% of the watershed. Protecting them to ensure that they continue to function and provide essential ecosystem services is important. A “no net loss” approach is an important stewardship initiative. In addition, large wetlands should be evaluated under the OWES in order to protect them from development under the provincial policy statement.

The Critics

Those who deny the threats posed by climate change or challenge the potential impact of humans on the natural environment often fall back on two primary arguments.

They quite correctly identify that humans have been using — perhaps even over-using and abusing — the planet's resources for millennia. From earliest times, there have been documented examples of the exploitation of the environment to meet human needs. In Muskoka, the great white pine forests were decimated by early settlers as they struggled to farm the rocky soil, build their homes, and create the enterprise that would support their families.

Critics also point out – again quite correctly – that good old Mother Earth has always demonstrated the ability to withstand, to respond, and to adjust to the worst that we have visited upon her. There is a measure of truth in that.

The Muskoka forests that were clear-cut at the end of the 19th and beginning of the 20th century are today healthy and thriving. The rivers that once were the receptacles for human waste from our early communities, and were further polluted by the old tanbark mills, are cleaner today than for many decades.

The fact is that Mother Nature has a remarkable resilience and ability to adapt. So what has changed? Why is there suddenly this urgent need to change our behaviours?

Two things have changed. One is the pace at which the natural environment is bombarded by the stresses from human behaviours. The current rate of resource depletion and environmental degradation viewed from the global perspective referenced earlier is unprecedented in human history. Reversing environmental damage requires decades and centuries. In today's fast-paced world, stress on the natural environment is constant, with little time for recovery.

The second is the scope of the stresses resulting from our demands for the goods and services provided to us by the environment. That is determined primarily by two factors: the numbers of us placing demands on natural processes such as cleansing air and water, and the level of our consumption of natural resources. Larger populations and higher standards of living increase the drain on natural resources.

As the world's population increases and standards of living escalate dramatically in the developing world, so too does the demand for more of earth's resources to feed, shelter, entertain and nourish our bodies, minds and souls.

The net result is that the environment's ability to meet human needs — clean air and water; productive land; and the effectively functioning terrestrial and marine ecosystems that moderate our climate, cleanse the air we breathe and the water we drink, renew the soil that grows our food, and temper the impact of floods, droughts and weather extremes – has been seriously compromised. And that has happened even as the demand for those services and resources has increased dramatically.

As global environmental degradation continues, acting locally to redouble stewardship efforts in Muskoka is vital.

Call to Action

Recent science suggests that it may still be possible to avoid the most catastrophic impacts of the twin threats of climate change and environmental degradation. However, this will only happen if there is immediate, cohesive and decisive action to cut carbon emissions and generally reduce our environmental footprint.

Traditionally, we humans have looked to governments and technology to solve our problems. And traditionally, government and technology have responded well. Governments have done their part by passing laws and enforcing regulations that control, direct or change the behaviours that we are unwilling or unable to control ourselves. They have also provided programs and services such as education and healthcare at costs well below what individuals would spend to provide those services for themselves.

At the same time, new and emerging technologies have been there to rescue us from ourselves. Do we want to drive big automobiles but can't afford the gas to power them? Technology provided us with more fuel-efficient engines. Have we polluted our sources of drinking water and exceeded nature's capacity to cleanse it? Technology provided better filtration and improved purification.

But what is becoming increasingly evident is that even as our demands on government and technology to solve our problems have increased, several factors are limiting their ability to do that.

As people demanded more and more services from government, taxes increased. So too did people's resistance to paying them. Now governments struggle to maintain the services they currently provide, while balancing competing demands from those they represent. As well, people are increasingly suspicious of "big" government. There is more than just a bit of irony in the fact that at a time in the history of civilization when government is needed to respond to what is truly a crisis, it seems incapable of doing so.

Although technology may well provide at least partial solutions to our environmental challenges, the reality is that new technologies are costly to research and develop. So at a time in our history when government support for those two essentials is badly needed, funding is limited.

And in another ironic twist, we humans will spend almost endless amounts of money on technology to entertain us and allow us to experience more comfort, but begrudge paying more taxes to allow for the development of the technologies that might be instrumental in the survival of civilization as we know it.

Humans are now consuming the planet's natural capital faster than it can be replenished. As the world population has doubled and the global economy has expanded seven-fold, we cut trees faster than they can regenerate, fill and pave over wetlands, over-pump earth's aquifers and drain its rivers, overgraze rangelands until they become deserts, take fish from the ocean faster than they can reproduce, and allow soils to erode faster than new supplies can form. We fill the air with contaminants, the atmosphere with carbon, and the earth with pollutants inimical to many life forms.

We ask more of the earth than it can possibly give.

This brings us to one inescapable conclusion. While there is an essential continuing role for both government and technology in responding to the challenges of climate change and environmental degradation, their combined efforts alone will not be sufficient. It is essential that those traditional approaches to addressing environmental health be complemented by strong additional support if civilization as we have known it is to survive.

Individuals, groups and communities must become the ultimate stewards of the things they value, and the natural environment must top the list of what we hold important.

Globally and locally, all of us – individuals, companies, communities, government and agencies – must accept responsibility for those actions that impact on environmental quality.

Muskoka Watersheds

While there is no one "right" approach to stewardship, no one magic bullet that will ensure sustainable, healthy watersheds, identifying some key "knowns" and generally accepted assumptions is a good place to begin.

A watershed approach to stewardship is sound. What happens in one part of a watershed impacts directly on other parts of that watershed regardless of political boundaries. The term *Muskoka watershed* is intended to include all watersheds lying totally or partially within the District of Muskoka, and the most effective stewardship initiatives will be those that are available within both Muskoka and its neighbouring communities within those watersheds.

A holistic and broad-based approach to stewardship will best serve the goal of achieving sustainable healthy watersheds. What happens in forests, wetlands, and communities, and the things we put on the land and in the air, all are linked directly to an impact on the quality of the water in lakes and rivers.

Environmental stewardship encompasses a broad range of issues and actions, from reducing resource consumption to restoring disturbed landscapes. It is reflected in the kinds of houses we build and the way we manage them, our transportation, the choices we make as consumers, and the responsible way we use rather than abuse the land, air, water, forests and wetlands.

Environmental stewardship involves:

- protecting natural systems
- using natural resources effectively and efficiently
- making the environment a key part of our priorities, values and ethics
- leading by example
- holding oneself accountable
- believing in shared responsibility
- anticipating the needs of future generations as well as our own
- exceeding and not just meeting expectations related to environmental protection

Examples of environmental stewardship in Muskoka abound. Management of development and growth within the carrying capacity of the ecosystem is a strategic priority of both the District Municipality of Muskoka and the Township of Seguin. Area municipalities are strengthening regulations that protect the environment and manage development. Lake associations are taking responsibility for environmental health in their respective communities through adoption of Lake Plans. Woodlot owners are subscribing to sustainable forest management programs.

These initiatives are just a beginning. They are lighthouse examples that point the way to a much-enhanced stewardship initiative throughout Muskoka.

A recommendation from a conference on *"Stewarding Our Watersheds: Joining Hands for a Sustainable Future"* put it this way:

> When all is said and done, the fate of sustainable management of a watershed lies in the hands of grass-roots residents as they go about their day-to-day business. It is the citizens of the watershed who must generate the interest and enthusiasm to create, continue and expand local projects which lead to positive actions and results.

It bears repeating. The fate of sustainable management of a watershed lies in the hands of grassroots residents. Responsibility for stewardship lies with all of us, and with each of us.

Community/Neighbourhood Environmental Stewardship

Are you a member of a family, a neighbourhood or a community group? A youth or retiree? A local schoolteacher, business owner or employee? A permanent or seasonal resident?

Whether you work, study, visit, live or play in Muskoka, you are a stakeholder with the opportunity to engage in activities that strengthen the natural environment, improve the quality of water in lakes, rivers and streams, and enhance health, quality of life, and economic viability within Muskoka watersheds.

Stewardship is about building healthy communities by enhancing natural areas and improving the health of the local environment through sharing both knowledge and hands-on experiences with others in the community — friends, neighbours, and co-workers. It's about not waiting for someone else to seize the moment, but getting involved yourself. It's about getting involved in making a difference in your neighbourhood or community.

What Can a Community or Neighbourhood Group Do?

- Volunteer at a community tree planting event.
- Organize a neighbourhood litter cleanup.
- Join a neighbourhood enhancement committee.
- Attend a nature event, walk or workshop.
- Participate in a creek or stream cleanup.
- Plant native trees and shrubs.
- Organize a community or neighbourhood workshop on native plant gardening, energy efficiency, or repairing damaged natural areas.
- Participate in guided walks to experience nature in a new way.
- Take part in a neighbourhood native tree planting, cleanup and other fun environmental activities for the whole family.
- Create bird or wildlife habitat.
- Organize a neighbourhood litter and garbage clean-up.
- Conduct a schoolyard, parkland or vacant land greening project (always with permission of course).
- Facilitate community garden development.
- Volunteer your skills and knowledge as a naturalist, artist, photographer, educator at community or neighbourhood events.
- Help in the planning, preparation and stewardship of restoration sites or community gardens.
- Share your interest and enthusiasm in restoring native plant habitat in your community.
- Participate in protecting community and neighbourhood scenic sites, natural and wooded areas, and wetlands through land trusts and conservation easements.
- Educate yourself, learn about species with whom we share Muskoka.
- Learn about Species at Risk.

What Can an Individual Do?

Waterfront Living:

- Maintain a wide natural buffer of plants and trees along shorelines of lakes, rivers and streams.
- Use phosphate-free soaps and detergents and phosphorus-free fertilizers (or don't fertilize your lawn).
- Ensure septic systems are properly sized and maintained.
- Do not feed wildlife (other than birds in the winter).

Rural Living:

- Do not store gasoline, cleaning products or chemicals near wells.
- Make sure wells are properly capped and abandoned wells are sealed properly.
- Ensure septic systems are properly sized and maintained.
- Practice sustainable forest management if you are going to log your property.
- Farmers should develop and implement environmental farm plans.

Urban Living:

- Do not pour anything down a storm drain as it goes untreated directly into the lake or river. This includes oils, road salt and runoff from your driveway.
- Minimize fertilizer use on your lawn.
- Landscape using native species.
- Pick up after your pet and dispose of wastes properly.

Water Recreation:

- Do not release live bait when fishing.
- Wash the hull of your boat and let it dry thoroughly before transferring to a different lake.
- Be cautious when fuelling a boat in the water.
- Use 4-stroke outboard motors if motoring.
- Keep ATVs and 4X4s out of sensitive wetlands.
- Keep Personal Watercraft out of sensitive lake areas such as wetlands and near shore areas.
- Obey speed signs in erosion sensitive low-wake areas.

Citizens of the Watershed

- Demonstrate stewardship by personally committing to environmentally responsible lifestyle choices.
- Tell your local, provincial, and federal representatives that environmental stewardship should be a policy priority.
- Vote for political representatives who will support policy and regulation that will ensure the public use of our natural capital can be sustained.
- Involve yourself in the planning process in your municipality; get to know your Official Plan and Zoning By-laws; support others in your community who are opposed to poor planning initiatives.
- Familiarize yourself with issues around climate change and advocate for increased greening initiatives at your local and district levels.
- Become aware of poor sustainability practices at a personal, local and district level and lead or support initiatives to better resource management at all levels.

References

1. Fraser Basin Management Program. *Community Stewardship: A Guide to Establishing Your Own Group*. 1994.
2. Pachauri, R.K. and Reisinger, A. (Eds.). *Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.* IPCC, Geneva, Switzerland. pp 104.
3. United Nations Environment Programme - *Impacts of Climate Change Coming Faster and Sooner: New Science Report Underlines Urgency for Governments to Seal the Deal in Copenhagen*. Press Release September 2009.