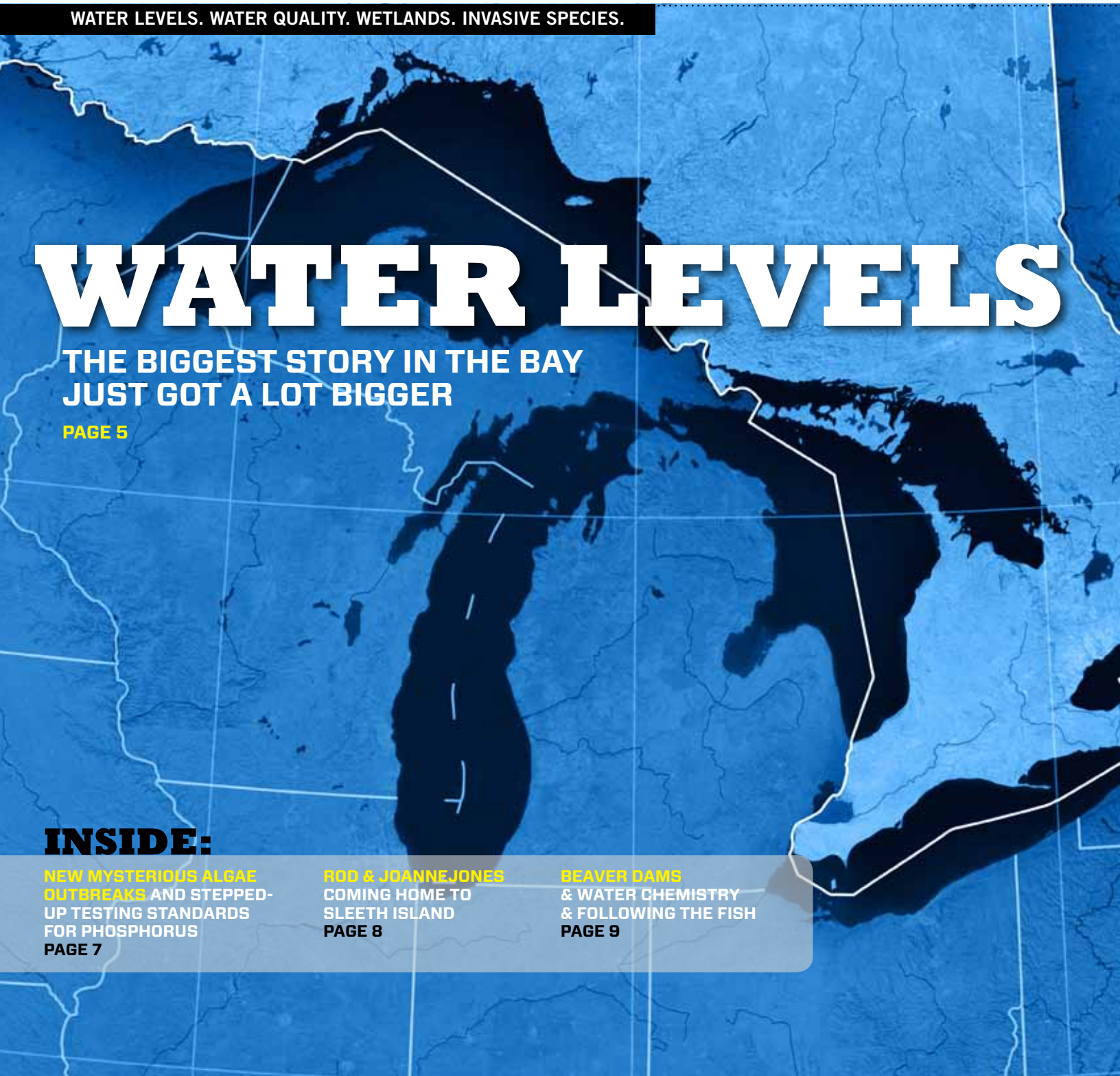
GEORGIAN BAY FOREVER

FALL 2011

WATER LEVELS. WATER QUALITY. WETLANDS. INVASIVE SPECIES.



WATER LEVELS

THE BIGGEST STORY IN THE BAY JUST GOT A LOT BIGGER

PAGE 5

INSIDE:

Georgian Bay Forever is a proud member of the Waterkeeper Alliance.

WATERKEEPER® ALLIANCE MEMBER

GEORGIAN BAYKEEPER

THE FOLLOWING GEORGIAN BAYERS ARE GENEROUS PATRONS OF GEORGIAN BAY FOREVER

Eric Jackman
Rod & Joanne Jones
John Honderich
Cameron Wardlaw
Bob Ogilvy
Brian Chapman
Robert Hay
David Beatty
Anthony Munk
Penny & John Pepperell
Ruth & Doug Grant
Geoff Hyland Family

FALL 2011

GEORGIAN BAY FOREVER

Georgian Bay Forever is a community response to the growing need for major research and education projects to sustain the Georgian Bay aquatic ecosystem and the quality of life its communities and visitors enjoy.

We help monitor the Bay's well being, throughout the seasons, year after year.

We fund the research needed to protect the environmental health of Georgian Bay and the surrounding bodies of water. Using our research findings, we inform and educate the general public and governments about any threats to environmental health and propose possible solutions.

Through conferences, workshops and seminars we are educating the Georgian Bay community. By teaming up with reputable institutions we enhance the credibility of our research and we strengthen our ability to protect what's at stake.

Georgian Bay Forever, formerly the GBA Foundation, is a registered Canadian charity (#89531 1066 RR0001). We work with the Great Lakes Basin Conservancy in the United States, as well as other stakeholder groups all around the Great Lakes.

Deeply rooted and broadly drawn, Georgian Bay Forever is steered by lifelong devotees to the Bay. We are committed advocates, educators, environmentalists, realists, idealists, and of course, residents.

OUR CONTACT DETAILS

48 Lesmill Road
Toronto, ON
M3B 2T5
tel: 905-880-4945

You can reach David Sweetnam, our Executive Director, at ExecutiveDirector@georgianbayforever.org or at (905) 880 4945 ext 1.

U.S. citizens wishing to make a donation to support our work can do so by giving to:

Great Lakes Basin Conservancy
PO Box 504, Gates Mills OH
44040-0504
USA
(Please add a note saying: "For Georgian Bay Forever")

This newsletter is just a snapshot of our work. For the most up-to-date information on our projects, longer versions of newsletter articles and the latest on breaking news about Georgian Bay, please become a regular visitor of our website.
GeorgianBayForever.org

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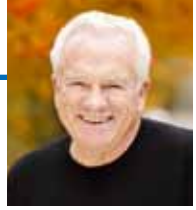


PUNCHING ABOVE OUR WEIGHT

President's Report

By David Parkes

Georgian Bay Forever is gaining momentum, the result of our board of directors punching above its weight in a number of important respects.

Unlike so many organizations these days that rely on a ever-expanding team of employees (we have only our excellent executive director David Sweetnam) our board members are hard at work not just providing direction for the organization but actually, in the best old-fashioned sense, getting the job done!

FIRST FUNDRAISING: raising money in the present economic climate (well it's never easy in any climate) requires tenacity, optimism, connections, and increasingly pitch-perfect approaches and just the right collateral materials. New board member Brenda Drinkwalter has applied her tireless energies and professional moxie to the task of mounting a many-faceted fundraising campaign. Penny Pepperell has provided copy and Grant Gordon (not a board member but a highly-valued member of our communications committee) and his firm Key Gordon, have turned out some gorgeous, credibility-generating materials.

Our experts are making a major impact on our scientific work, ensuring the most effective use of our

The results have been outstanding, especially with regards to the marina sponsorship program, which got fully underway this past summer. As of this printing, we now have 14 marina sponsors. These are businesses that have grasped what our mission is all about, and have assumed a prominent role in ensuring the health of Georgian Bay. The board members, who took the show on the road as it were, are Peter Singer, Peter Hatcher, Brenda Drinkwalter, Rod Jones, former president Lloyd Posno and myself. Other new fund raising initiatives such as approaching businesses on the Bay, are also taking shape, led by Rod Jones and Mike McKeown, both new directors this year.

New director Penny Pepperell, who is heading up the communications committee, is providing high-value content for our newsletters and the web. Scott White, our longest-standing board member continues to play an active role, most recently in pulling together the annual report. Still to do is develop a higher presence in social media.

Director and treasurer Larry Ward has laid out the organization's behind-the-scene's fundamentals, implementing careful planning and cost controls. Please check out our newly published annual report, available on our web site, georgianbayforever.org to a guide for the shape we're in.

This year we struck a science advisory committee to evaluate our research projects, with a view to identifying what most needs doing in the fields of wetlands, water quality, and invasive species. Under the guidance of director Mike Hensel, our experts are making a major impact on our scientific work, ensuring the most effective use of our donors' dollars.

Sitting on a board of directors, *any* board of directors is increasingly demanding, as donors, governments and competition from other charities set the bar high for transparency, accountability and a strong knowledge base. Our restructured board of directors has embraced this new reality under the conscientious guidance of directors Hugh Wilkins and Hugh McClelland.

In closing, I must thank our many new donors who have joined the fold and those old friends who continue to give.

WATERKEEPER® ALLIANCE MEMBER

GEORGIAN BAYKEEPER

THESE MARINAS STEPPED UP TO HELP PROTECT THE BAY. IS YOURS ONE OF THEM?

CONNOR INDUSTRIES
Desmasdons BOATWORKS
GLENS & BIRNEY MARINA
GORDON BAY MARINE
World Famous Henry's RESTAURANTS OF GEORGIAN BAY
PARRY SOUND MARINE
RPM
HINDSON MARINA INC.
BEACON MARINE
PARAGON MARINA
Parkbridge MARINAS
WYE HERITAGE MARINE
Sound Boat Works ltd.
Your FULL SERVICE MARINA in Parry Sound

GEORGIAN BAY FOREVER THANKS THE ABOVE MARINAS FOR THEIR STEADFAST SUPPORT OF OUR WATERKEEPERS' BOAT FOR SCIENTIFIC RESEARCH. WITHOUT THEIR HELP, WE WOULDN'T STAY AFLOAT!

"THE BAYKEEPER" INDICATES THAT GEORGIAN BAY FOREVER IS A MEMBER OF THE WATERKEEPER ALLIANCE, A GLOBAL MOVEMENT OF ON-THE-WATER ADVOCATES WHO PATROL AND PROTECT OVER 100,000 MILES OF RIVERS, STREAMS AND COASTLINES IN NORTH AND SOUTH AMERICA, EUROPE, AUSTRALIA, ASIA AND AFRICA. FOR MORE INFORMATION GO TO WATERKEEPER.ORG

IT'S NO LONGER JUST ABOUT US

Forget the dredging issue in the St. Clair River, the IJC is looking at solving a much bigger problem: multi-lake regulation

By Penny Pepperell

The likelihood that the International Joint Commission will actually do something about low water levels in Georgian Bay has never been greater. Here's why.

The Study Board is now giving serious consideration to multi-lake regulation, (which in broad strokes, is exactly what Georgian Bay Forever has been recommending for years.) This is the only possible way that the conflicting interests, Georgian Bay's included, around water levels can be reasonably dealt with. And it should benefit all of the Great Lakes.

Originally, Georgian Bay Forever had focused its efforts on getting the IJC to address the deleterious impact of channel alterations in the St. Clair River; that foundered in 2009 when, after much study, the Upper Great Lakes Study Board recommended that this problem be folded into a study of a much bigger problem: climate change across Lakes Superior, Michigan, Huron, Erie, St. Clair and Georgian Bay.

Throwing rocks in the river

So a problem that many people thought could be fixed by throwing a few large boulders in the river to slow down the water has morphed into an enormously ambitious, engineering exercise, with the entire liability for failure potentially falling on the IJC. However, failing to act could be calamitous. So there are some very real pressures converging on the Agency.

The Study Board acknowledges that *something is owed* Michigan-Huron (and Georgian Bay) for the way in which the St. Clair was deepened without thought to compensating for its increased conveyance. (In contrast, some mitigation was forthcoming for the Detroit River.)

Clashing interests

Besides the scale of the problem, there are conflicting interests to consider. Since the St. Clair was dredged, the property owners on the south shore of Lake Michigan have taken advantage of the lower waters, such that now they are reluctant to see any change unless it comes in the form of mitigation for some future problem of their own.

This tension, among Great Lakes users is adding to the dilemma facing the IJC. But only by tying Georgian Bay's interests into this larger, more ambitious engineering exercise, will there be any possibility that the greatest fresh water ecosystem in the world will be able to hang on to, and maybe get back, the water it needs.

MULTI-LAKE REGULATION'S NEW TOOLS

The general objective of multi-lake regulation, as conceived by the Study Board, is to keep the "entire Great Lakes-St. Lawrence River system within observed historical extremes on all lakes, even under the more extreme projected climate conditions in the future."

The current infrastructure can't cut it. The only form of regulation now upstream of Niagara Falls is on the St. Mary's River at the twin cities of Sault Ste. Marie in Ontario and Michigan.

Regulating for the new multi-lake standard would require building new control structures in the St. Clair River to restrict outflows and raise levels in Michigan-Huron. Another control structure would also have to be built on the Niagara River, and these new structures would be in addition to the existing control structures on the St. Lawrence and St. Mary's Rivers.. The agreements, approvals and funding for construction could take decades, if the governments can't find a way to speed the process up.

Equally necessary would be more and better information going to the right decision-makers, enhanced monitoring and modeling of precipitation, evaporation and runoff, and improved tracking of changes to the lakes and their connecting channels. The Study Board proposes a new Water Quantity Board be instituted to address this issue across the entire Great Lakes system.

Engineering challenges

Lake Superior, an enormously deep and wide lake, narrows to a relative trickle when it funnels into the St. Mary's River, and this makes it difficult to control the outflow.

Regulation of Superior outflows can at best have only a very limited impact on the balance of water between Michigan-Huron and Superior. The sort of extreme and uncertain weather systems likely to be generated by climate change would be impossible to manage with this limited tool.

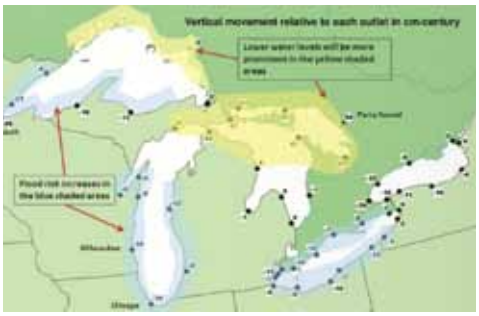
The amount of water the Study Board is contemplating shifting about is absolutely huge. If the IJC were to allow a few speed bumps (well-engineered boulders) in the St. Clair River to increase the water in Michigan-Huron by a modest amount, three inches, under extreme low precipitation conditions, it would take 25 to 30 years to fill the lakes up if they wanted to be careful not to shock the downstream hydrological system.

But now, in addition to climate change, glacial isostatic adjustment is at work, as the earth's crust adjusts to the lifting of the weight of the continental glaciers that retreated more than 10,000 years ago. This is fundamentally and absolutely changing the relationship among the Great Lakes. (The St. Mary's River might have to be dredged someday for example.)

Stakeholders and the economic consequences of water level changes

Changes in water levels, even apparently small ones, can have deleterious impacts, generating costs to the environment and to property owners, companies, local governments and other users of the lakes.

High water levels are responsible for flooding, erosion and loss of beaches, recreational lands and wetlands. Low levels can also cause erosion as structures are undercut. They can threaten water supplies, water quality, boater safety, the viability of marinas and other businesses, restrict power generation, expose mudflats, impact tourism, impound and dry out wetlands, decrease property values, hurt local economies, restrict commercial navigation and increase the risks of boats running aground.



GIA impacts on the coast line of the Upper Great Lakes (vertical movement relative to each outlet in centimetres per century). Reproduced with the permission of the International Joint Commission, Upper Great Lakes Study Board.

The Study Board has admitted that on balance the benefits associated with higher water levels in Michigan-Huron outweigh the negatives. For example Great Lakes shipping would see their costs go down if they could carry more cargo; and compared to alternatives like rail and truck, that would deliver a substantial reduction in greenhouse gas emissions.

If Georgian Bay wetlands, which are now on life support, got their water back, they could return to being nurseries for tens if not hundreds of species. If the water levels stayed the same or got a little higher, marinas would be spared the huge costs associated with dredging, blasting and dock building.

But structures to raise Lake Michigan-Huron could increase the likelihood of flooding during extreme weather events along the southern shore of Lake Michigan, which already faces an increased risk as a result of GIA "tipping" Georgian Bay water southward. Shoreline property and wetlands along Lake St. Clair and Lake Erie, as well as sensitive habitat for five threatened or endangered species in the St. Clair River system, could be compromised by changes in the St. Clair River, although much depends upon how and when these changes might be introduced. The First Nations in the area have also expressed their concerns about their wetlands drying up.

In its Restoration Report, the Study Board put dollar numbers to these negatives and noted, ominously, that environmental legislation stands in the way of water levels being raised citing as an example the potential disruption of the habitat of the lake sturgeon, an endangered species.

Why the study board didn't look at the environmental costs of doing nothing

What the Study Board didn't do was put similar efforts into tallying up the costs and otherwise quantifying the negatives (such as further damage to the 23 endangered or threatened species in Georgian Bay) associated with the do-nothing option. Here's why. If the IJC does nothing, the extremes expected from climate change would eventually be incorporated into a new "normal", just as the lower water levels associated with dredging in the St. Clair River have been incorporated into so-called "normal" conditions.

But if the agency were to step in and attempt to control water levels, it will "own" any resulting problems outside the historic norms. This explains the fixation on calculating the collateral damage associated with raising water levels, and not with calculating the damage associated with doing nothing. And doing nothing would continue to really hurt Georgian Bay.

Climate Change: what changes to expect

The Study Board has concluded that, with climate change, upper Great Lake water levels can be expected to stick closely to their long-term extreme ranges but will continue to decline. It looked at records for the last 2,000 years as well as those for the last 100 years. It sees more precipitation during the winter/spring season and less of it in the summer/fall, netting out to slightly less water overall.

But there is also going to be greater turbulence over the next 30 years: increased precipitation; more frequent and more intense storms; less ice coverage and increased wind speeds that will cause greater evaporation, which will offset the increased precipitation; and increased lake temperatures.

Prior to this finding, climate change experts were predicting a more severe impact: a drop of a metre by the end of the century. The new less dramatic scenario is based on an analysis of regional, not global models.

However, if the IJC were to decide to raise water levels in Michigan-Huron, and climate change resulted in more water, not less, then this climate-change-impact water would be in addition to the IJC-managed water-level increase; and that might put the high water mark outside the historic norms, the point at which the IJC could expect some litigation for the resultant damage.

In contrast, if climate change dragged the water levels down (the more likely scenario), the restored water levels would ameliorate the impact.

As everyone in Georgian Bay knows, its waters swing up and down dramatically. That isn't the problem. What's putting the ecosystem at risk is sustained low water. Dried out wetlands could potentially impact all the species in the region and foster the conditions attractive to invasives, which in turn will stress the ecosystem further.

So the Study Board's analysis of the anticipated impact of climate change is not reassuring. Georgian Bay is already in deep trouble; and doing nothing isn't going to help.

Glacial isostatic adjustment is not an equal opportunity threat

There is not much doubt about the impact of GIA, and it looks bad for Georgian Bay. Ten thousand years ago, the Great Lakes were weighed down by two kilometres of ice. Since its melting, the earth's crust has gradually rebounded, but at unequal rates at different places, rising higher around the shores of Georgian Bay and lower around the southern edge of the Great Lakes. At the same time, bulges that rose around the glaciers have begun to settle down.

The overall effect is that Georgian Bay is losing water to Michigan-Huron. The exact impact varies with location. Parry Sound is rising at a rate of about 24 cm (9.4 in) per century. At the same time, the shoreline around Milwaukee, Wisconsin, is "sinking" at a rate of about 14 cm (5.5 in) per century.

Here's how the Study Board looked at GIA in its Restoration Study. Over the next 40 years, Parry Sound will lose 9.6 cm (3.78 inches) of water to GIA. If the IJC arbitrarily decided to raise water levels 10 cm (3.94 inches) in Michigan-Huron-Georgian Bay—which by the most optimistic estimates would take 15 years given government approvals and implementation—the net increase (3.94 inches minus 3.78 inches) would be a measly 4 cm (0.16 inches.)

The problem with this scenario is it doesn't address the impact of climate change. It doesn't take account of the fact that, were water levels to be raised, it would be because climate change would be dragging them down. Water levels would net out to where they were before climate change impacts took hold.

(THIS STORY IS CONTINUED ONLINE AT GEORGIANBAYFOREVER.ORG/MULTI-LAKE)

TRACKING WATER QUALITY

New testing standards for phosphorous, oxygen depleted water and a $100,000 grant from RBC

By David Sweetnam

This past summer was fantastic for boating and swimming but most especially, for working outdoors. As a result, our water quality projects wrapped up as scheduled. Our external evaluation and review of previous water-quality monitoring efforts in the Township of Georgian Bay showed that while the data collected to date has enhanced our understanding of our complex coastal-aquatic system, it can't tell us much about long term trends, whether water quality is improving or deteriorating due to human behaviour or natural conditions.

To address this concern, phosphorus samples were taken in Twelve Mile Bay, Cognashene Lake, and Go Home, from the inner bays where circulation is limited or poor, as well as from the open water. These sites are representative of other areas that are susceptible to water quality problems.

Because Georgian Bay has only scant traces of phosphorus typically, previous testing methodologies could only provide background reference levels; there is so much water to dilute it, very little agriculture runoff (except in the Matchedash Bay) and only a trace of lawn fertilizer and septic system discharge. Stepping up the program to monitor trends has necessitated a change in facilities, and so we have switched to Ontario Ministry of Natural Resources and Trent University's testing lab in Dorset for the detection of very low phosphorus concentrations.

Oxygen Depletion

In addition to this chemical testing, it looks like we have amassed an excellent data set for this year for dissolved oxygen, temperature and pH (a measure of acidity and alkalinity.) Twelve Mile Bay Site One (see charts) is close to the open water while Site Six is inland and east of Moose Deer Point Marina. You can see that the open Georgian Bay water is fully saturated with oxygen all the way to the bottom, whereas the inland bottom waters are fully depleted of oxygen producing the anoxic conditions associated with high phosphorus levels and late-season algae blooms.

By collaborating with the Township of Georgian Bay and our partners like the Severn Sound Environmental Association on projects like this, we have been able to eliminate redundancies in sampling, reduce the costs to the Township while improving the quality of the overall data.

We'll be looking for volunteers to participate in local sample collections next summer. If you are interested please get in touch. More details will be available in the spring, but at this point we would expect samples to be taken about six times over the summer, one per month from May to October.

The RBC Blue Water Project

As part of a consortium that included the Muskoka Watershed Council and our GB5* partners, we received a $100,000 Royal Bank of Canada "RBC Blue Water Project Leadership Grant" to assist in the development of the Eastern Georgian Bay Report Card.

The project will outline current conditions in the region from the Severn River to Killarney as well as identify gaps in environmental data. Similar to the Muskoka Report Cards that are released every three years, our report will come out every four years beginning in the summer 2012.

The intended readership includes commercial and recreational users of Georgian Bay, provincial and national parks users, municipal planners, policy-makers and residents in the coastal communities, the province and

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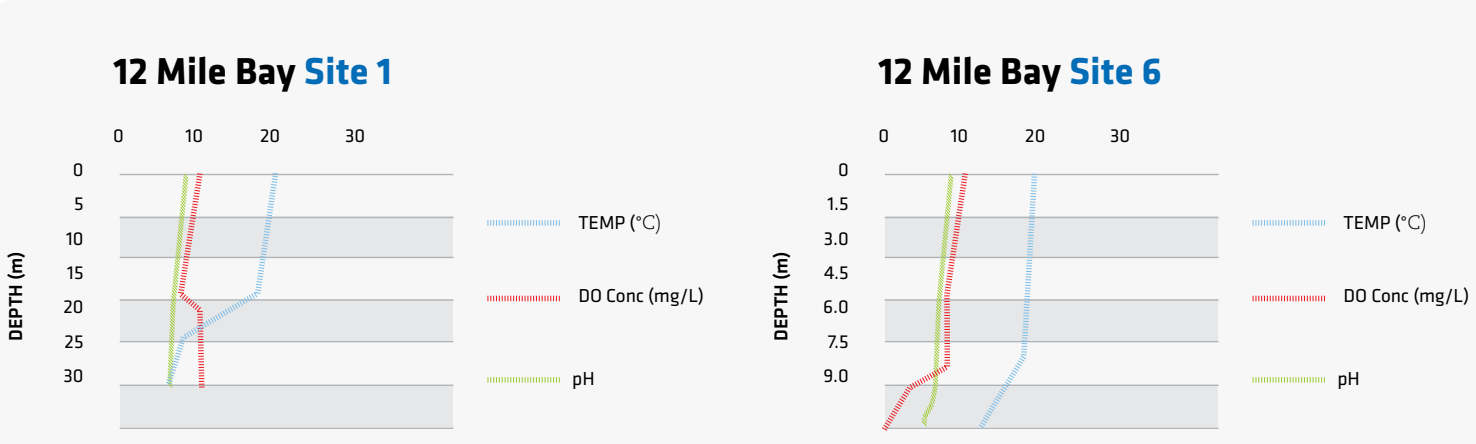


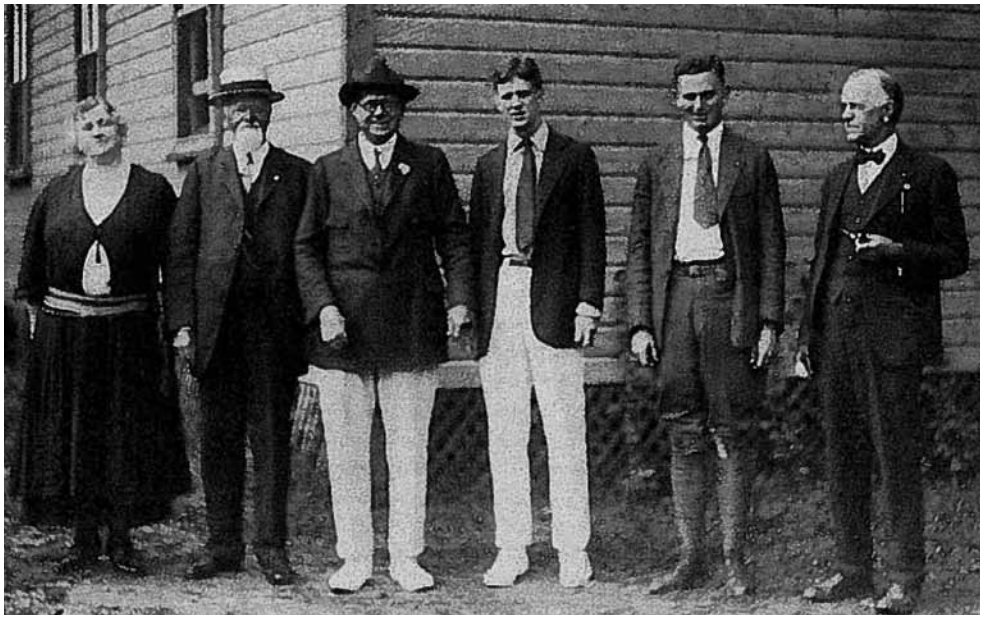
Sample Site 1 is located in the outer portion of Twelve Mile Bay where fully oxygenated water is found all the way to the bottom. The colder bottom water holds even more oxygen than the warmer upper water. Sample site 6 is located at the inland end of Twelve Mile Bay and despite being far shallower, the lower water and upper waters aren't mixing, resulting in anoxic conditions and higher phosphorus levels, factors in late-season algae blooms.

* The GB5 are: Georgian Bay Forever; Georgian Bay Association; Georgian Bay Land Trust; Georgian Bay Biosphere Reserve; and The Eastern Georgian Bay Stewardship Council.

ROD & JOANNE JONES

Coming home to Sleeth Island

By Penny Pepperell



My grandfather is the young guy with white pants. His father is next to him with white pants and my great grand father is the guy with the white beard. The other three are their cousins.

Rod's family goes back six generations in Georgian Bay and he's got the pictures to prove it. "I have a photograph of my grandfather, my great grandfather and my great great grandfather standing on the porch of the old Rose Point Hotel in Parry Sound, dressed in coats and ties, ready to go fishing."

Rod's forebears made the trek up from Cleveland Ohio during the early 1900's for the greatest fishing on earth and that particular mixture of rustic charms and luxury (lots of bugs and lots of help) that the grand hotels of Georgian Bay served up to their American guests.

However time went by and the family lost touch with Georgian Bay in the 40s and 50s. His mother married and moved to Nassau Bahamas. They loved the island lifestyle of sailing trips, calypso music and bougainvillea. However, the Bahamian summers were very hot and they longed to get away to the coolness of the north woods.

So his parents bought Sleeth Island in the Sans Souci area, one dilapidated cabin and two old boats on 17 acres, which had been on the market for five years. "We had to pass one night at Amanda's Lodge in the South Channel as it took us three hours to get in and out of town in our old Viking seven-horsepower cedar-strip boat. The mice and other rodents had gone wild and my mother fled to town to buy new bedding."

But this spot on the Long Sault became their family homestead. It grounded the family for two or three weeks a year before they dispersed around the globe. Rod and Joanne honeymooned there of course, with ten friends who had come for the wedding. "We had to," said Joanne, "otherwise we wouldn't have seen them enough."

> "Georgian Bay Forever is doing a great job and I am very proud to be associated with it."

They had three kids and many adventures: sleeping on the rocks and eating pancakes on Snake Island, close encounters with bears, boating in gale-force winds, memorable sunsets; visits with friends; visiting "lonely" places and lots and lots of reading. And then there was the fire, and the old main cabin burnt to the ground.

'We came up in October —it was after we'd closed up—and everything was gone. It was devastating for all of us, especially my father and he never came up again, but for Joanne and me it became an opportunity to build our own place. No more mouse holes!"

Their new cottage is Homes-Magazine perfect but its charms are old-fashioned. The kids are spread far and wide. Kimberly is in Cork Ireland, Emma is studying law in Chicago and Trevor is at university in Maine but they all come back faithfully for their special sojourns in Georgian Bay.

"After 50 years of incredible experiences, I feel a strong need to give back to the Bay. Georgian Bay Forever is one hundred percent devoted to protecting and preserving Georgian Bay. This wonderful place is under threat from invasive species, pollution, climate change and water level depletion. The only way to halt this decline is to understand exactly what is going on and to educate users and regulators about solutions to the problems."

RESEARCH UPDATES FROM DR. PAT CHOW-FRASER

Tracking the impact of beaver dams and following the fish

By Penny Pepperell

Research Updates from Dr. Pat Chow Fraser, McMaster University, September 2011

Pat Chow Fraser's work on Georgian Bay's wetlands has been crucial to engaging the attention of the IJC; and crucial to her work has been the financial support provided by Georgian Bay Forever. Without both, the implications of low water levels would probably be viewed as a drive-by problem, with consequences only for dredging, dock construction and navigation.

Pat started out identifying all the wetlands in Georgian Bay and used representative sites to study the implications of low water levels on the natural environment. Rachel DeCatanzaro (M.Sc.), Amanda Fracz (M.Sc. candidate) and Jon Midwood (Ph.D candidate) have carried out much of this research over the last two years. Rachel and Amanda looked at the impact of landscape factors, wetland geomorphology, beaver dams and water levels on water chemistry, while Jon studied the effects of low water levels on both fish habitat and fish communities.

A report on their most recent research can be found on Georgian Bay Forever's website, but here is a review of her findings.

"Sustained low water levels over the past decade are already restricting water exchange. In addition, the slower flow and shallower depth appears to be encouraging beavers to build dams across the wetland mouth. Beavers build dams to raise water levels behind the dam to allow them safer access to their lodges and to increase foraging areas. This change will consequently alter hydrology and the type of aquatic habitat since fish can no longer migrate across the dam. Absence of fish will have cascading effects on the food web, particularly on the type and abundance of amphibians and reptiles. "

The researchers found that these impounded wetlands were providing a safe haven for minnows, brook stickleback, sunfish and tadpoles (green frogs, leopard frogs, bullfrogs, tree frogs, spring peepers) snakes, and turtles. Evidence suggests that impoundments are also having an impact on the water chemistry, reducing or preventing altogether, the mixing of ion-poor soft water runoff from the granite watershed with the harder, ion-rich Georgian Bay water.

"Eastern Georgian Bay is one of the few areas in the Great Lakes where it remains possible to study water chemistry in relation to natural watershed dynamics while establishing true baseline conditions against which future impacts can be assessed. The research supported by the Foundation in this regard is of utmost importance to the wise management and conservation of this natural resource," the report notes.

Fluctuating water levels encourages biodiversity by preventing the dominance of a particular plant type, submerged plants thriving in conditions of high water and meadow plants taking advantage of low water; but the relationship is complicated, as the vegetative type that seems to be on the ascendency at any given point may be the result of water conditions two to five years earlier.

Another promising area of research concerns whether fish move from wetland to wetland, and whether the distance between the sites influences this movement. To study this, Pat's researchers looked at six wetlands in Massasauga Provincial Park and Tadenac Bay, with distances varying between the sites anywhere from a few metres to a kilometer. They tagged pumpkinseed sunfish, largemouth bass, yellow perch and rockbass with wetland-specific and cycle-specific dyes (to determine when they were caught). The results suggest that only a small percentage (seven to 10 per cent) of the fish moved away from their wetland of origin, although larger fish tended to travel longer distances than smaller fish. This has important implications for conservation.

Pat's research supports the premise that habitat changes are influencing fish population, and that low water levels affect these habitats in complex ways, well beyond what a simple equation of less-water, less-habitat, fewer-fish would suggest.

"These results reinforce the importance of understanding the intricate relationship between the plant and fish communities in coastal wetlands and should provide insights to the International Joint Commission's Upper Great Lakes Study as they make recommendations on future water-level regulation plans for Lakes Superior and Huron-Michigan."

The full report can be found at GeorgianBayForever.org/dams

Amanda Fracz and team at McGibbon Marsh

Jon Midwood with Maja Cvetkovic processing fish that were caught in a fyke net in Tadenac Bay.

Changes on the rock face in South Bay: the pristine lakeshore along the Baxter River inflow is within two kilometers of the algae-covered shoreline further out towards the Honey Harbour area, Sept 2007. Phosphorus levels alone do not account for this pronounced change.

PHOTO: KARL SCHIEFER

(CONTINUED FROM PAGE 7)

general public. The report will go beyond traditional "state of the resource" reporting (e.g. fish and water) to communicate more complex socio-ecological information.

Our goals are to: improve water quality awareness; design a remediation project in two areas currently experiencing water quality degradation; protect additional wetlands; and educate the public on sustainable behaviors to maintain biodiversity and a healthy watershed. We will produce scientific reports, a visually appealing report card and an interactive website. We will report on ecological conditions, general threats or drivers of change, hot spots and emerging issues; identify knowledge gaps and research opportunities; and detail local stewardship activities.

Numerous anticipated pressures are facing the Great Lakes over the coming years as development and climate change have the potential to seriously impact the health of our coastal communities. Despite significant research in the region, effective communication leading to behavior change has been missing. As part of this project we're looking at the causes of a recent spike in aquatic plant growth in Honey Harbour. Many people have contacted us this past summer noting a similar trend elsewhere in the Bay.

Wetlands

We redesigned our wetlands program to provide more volunteer coverage of the coastal wetlands. Our first ever train-the-trainer session took place at the Baxter Community Centre one beautiful Saturday followed by a short trip to a large healthy coastal wetland. But even here we identified the invasive reed *phragmites australis* growing in several patches. We made the adjacent landowner aware of this invader.

The Georgian Baykeeper

The addition of our new Georgian Baykeeper research vessel allowed us greater mobility within the coastal waters of the Bay. This 19-foot Stanley Islander Runabout with a 115 horsepower, ultra low-emission Yamaha engine from Connor Industries and Gordon Bay Marine is perfect for transporting test equipment, food and camping gear as well as our scientific crews, and getting us to where we need to go from our base at Paragon Marina in Honey Harbour.

If you had a chance to see the Georgian Baykeeper at a regatta or while we were taking water samples this summer, you would have noticed the numerous marina sponsor decals on the hull. Over 14 Georgian Bay marinas have signed up as sponsors with more to come next year.

We are once again indebted to the many volunteer host families who provided our research teams with shelter, transportation and hospitality.

GEORGIAN BAY FOREVER

WATERKEEPER® ALLIANCE MEMBER

GEORGIAN BAYKEEPER

1

Our Annual Report is coming soon.

Sign up to receive yours at georgianbayforever.org

2

Save the date

Mark your calendars for next year's Georgian Bay — Vital Signs Speakers Series event April 14, 2012 at the Metro Toronto Reference Library

3

Don't forget to give!

Please see the attached reply envelope and send us a cheque today. Your support will go towards vital research and education that will protect the Bay for generations to come

“WE SEE GEORGIAN BAY FOREVER AS A GREAT INVESTMENT IN THE FUTURE”

Ruth and Doug Grant
GEORGIAN BAY FOREVER PATRONS, 12 MILE BAY

GEORGIAN BAY FOREVER

HELP US PROTECT GEORGIAN BAY. FOREVER.
USING THE ATTACHED ENVELOPE, SEND IN YOUR DONATION TODAY!

GeorgianBayForever.org | 905.880.4945