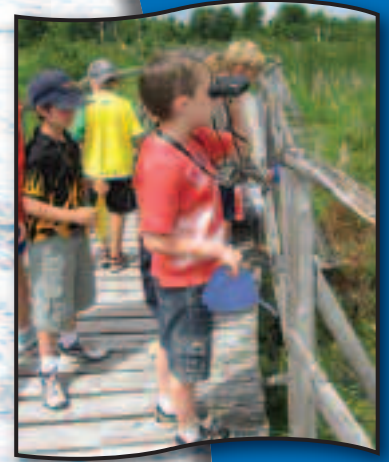




St. Lawrence
River Institute
of Environmental Sciences



2008 Annual Report

Research, Education, Community

*The River Institute will be a leader
in research, education, and community
action on large river ecosystems
in Canada and the world.*

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Message from the President



Serving as President of the St. Lawrence River Institute of Environmental Sciences is both fascinating and engaging. The Institute is now a well established non-government, environmental organization. It has grown steadily from its beginnings as a citizen's group fifteen years ago.

Scientific research, education programs and outreach to the community are contributing to our knowledge and helping to operate programs that develop environmental understanding in our community. The protection of the St. Lawrence River is paramount for us. It is essential to our future well being.

The task of the Board of Directors is to provide a working structure and a policy framework to support the work of the scientists and other staff. We are directly involved in finding the resources that will sustain the Institute for the long run. During this year our committees have re-committed to their work, and we see vigorous support for our key objectives coming from these committees in the future. We are working on an update of some of the fundamentals.

A review of our by-law is underway, and we expect to tackle a review of our strategic plan before the next year is over.

The Board has created the policy framework for a sustaining fund. We intend to build an endowed fund that will ensure that the organization is never at financial risk. With a large enough endowment, we will be able to act independently on some of our science and education goals.

Partnerships have been a key ingredient in our success to date. We are renewing and strengthening our working relationships with the City of Cornwall, the United Counties of Stormont Dundas and Glengarry, the Mohawks of Akwesasne and an array of educational organizations.

We need an informed citizenry to take an interest in our progress. Read this report and call us if you have questions. Please look at our web site, talk to community leaders about us and visit our open house when you can. You will be as amazed as I am at the wonderful work done by the River Institute.

Pat Finucan

Message from the Executive Director

Agrowing research capacity, inspiring community initiatives and innovative education programs were the hallmarks of the River Institute's activities in 2008.

We maintained our strong research partnerships with Queen's and Ottawa Universities, and added new partners from University of Waterloo and Clarkson University. Three new employees joined the Institute and expanded our ability to do research and to provide science leadership in our community. My position on the Science Advisory Board of the International Joint Commission has given the River Institute an active voice on issues facing the Great Lakes/St. Lawrence system.

It is important that we share our work with the community. Our involvement in the Public Involvement Committee for the Remedial Action Plan, the Science and

Nature Speakers Series and our involvement with the Cornwall Carbon Reduction Initiative and Clean Air Cornwall enhances community awareness and action on environmental issues.

I am proud and amazed to report that the River Institute's education programs reached over 4000 students in 2008! Young people from across Eastern Ontario and Western Quebec took part in a diversity of programs such as the Eastern Ontario Children's Water Festival, Environmental Science Investigator, Special Kids, Eco-Friends Camp, Jr. Scientist Camp and Youth Internship program. Our partnership with St. Lawrence College continues to be mutually beneficial – every scientist and technician at the River Institute contributes in some way to program delivery at the College. Together, we are building and strengthening the environment and health training fields in our region.



I look back at 2008 as a year of success. It marks a year of superb efforts by our Board of Directors to lead fund-raising toward long term sustainability. We remain committed to making the River Institute a world leader in research, education and community action on the St. Lawrence River and other large river ecosystems in the world.

A handwritten signature in black ink that reads "JRidal". The signature is written in a cursive, slightly slanted style.

Jeff Ridal



Board of Directors 2008



Mr. William Knight – Past President

Mr. Bill Knight is a professional engineer and vice president of the Thompson Rosemount Group in Cornwall. Bill took on the leadership of River Institute's Board of Directors in 2004 soon after the completion of the building construction campaign. With a brand new state of the art research facility, Bill kick-started a process of strategic planning to take advantage of the opportunities the new building presented. He led the Board and the staff through some critical changes in governance that resulted in the appointment of Dr. Jeff Ridal as the River Institute's Executive Director. Bill also led the Board through the creation of a Strategic Funding Plan - a plan that has enabled the Institute to increase its operating budget by 40% during his four year term as President. His dedication to the River Institute reflects his commitment to the river and its importance to our community. Bill Knight continues to sit on the River Institute's Board of Directors, the Management Committee, and the Fundraising Committee.

Officers

Pat Finucan (President)

Retired Director, St. Lawrence College, Cornwall Campus

Katie Burke (First Vice President)

Principal (retired), Upper Canada District School Board

Henry Lickers (Second Vice-President)

Director, Department of the Environment, Mohawk Council of Akwesasne

Elaine Kennedy (Secretary)

Environmentalist

Richard Fawthrop (Treasurer)

Chartered Accountant

Directors

Bill Knight (past president)

Vice-President, The Thompson Rosemount Group

Chris Atkinson

Curriculum Consultant, Catholic School Board of E. Ontario

Jules Blais

Faculty of Science, Ottawa University

Melanie Baker Brown

Director, Hunter Amenities Inc.

Chief Nona Benedict

Mohawk Council of Akwesasne

Bernadette Clement

Councillor, City of Cornwall

Don Fairweather

Dean, St. Lawrence College, Cornwall campus

Bruce Grant

President, Grant/Marion Construction

Linda Halliday

Public Affairs Officer, Ontario Power Generation

John Houston

Safety, Security, and Environmental Manager, Kraft Canada Foods

Lydia Johnson

Former President, C-Tech Ltd.

Tom Kaneb

CEO, Sigma Point Technologies Inc.

Gib McIntee

President, St. Lawrence Testing

Mike Metcalfe

Consultant, In a Word Communications

Melissa Ringler

Teacher, Upper Canada District School Board

Damian Rodriguez

Environmental Remediation Project Manager, DL Services

Alvin Runnals

Mayor, North Dundas County

Rik Saaltink

General Manager, Seaway International Bridge Corporation Ltd.

Karen Switzer-Howse

Consultant, Center For Environmental Leadership

Subcommittees

Management Committee

Pat Finucan (Chair), Bill Knight, Elaine Kennedy, Katie Burke, Melanie Baker Brown, Gib McIntee, Bruce Grant, Tom Kaneb, Damian Rodriguez, Rick Fawthrop
Staff: Jeff Ridal, Christina Collard, Pam Maloney

Research Advisory Committee

Tom Kaneb (Chair), Gib McIntee, Jules Blais, Bill Knight, Bruce Grant, Karen Switzer-Howse, Henry Lickers, Lydia Johnson, John St. Marseille (Thompson Rosemount Group), Chris Critoph (Raisin Region Conservation Authority), Michael Twiss (Clarkson University), Peter Hodson (Queen's University), Conrad Debarros (Ontario Ministry of the Environment), David Fay (Environment Canada), David Bloomfield (Mobern Inc.), Staff: Jeff Ridal, Brian Hickey, Ryan MacKenzie, Jerome Marty, Jennifer Haley, Pam Maloney

Education Committee

Melissa Ringler (Chair), Katie Burke, Elaine Kennedy, Don Fairweather, Chris Atkinson, Melanie Baker Brown— Staff: Jordan Ann Kevan, Brian Hickey, Julie Street

Community Action Committee

Rik Saaltink (chair), Elaine Kennedy, Katie Burke, Bernadette Clement, Linda Halliday, Alvin Runnals. Staff: Christina Collard, Jordan Ann Kevan de Haan, Pam Maloney

Fundraising Committee

Tom Kaneb (chair), Pat Finucan, Bill Knight, Doug Randlett, Karen Switzer-Howse. Staff: Jeff Ridal, Pam Maloney, Christina Collard

Jeff Ridal, Ph.D.

Executive Director & Chief Research Scientist

Brian Hickey, Ph.D.

Program Leader Education & Research Scientist

Jérôme Marty, Ph.D.

Research Scientist

Christina Collard

Program Leader Administration and Special Projects

Jordan Ann Kevan, M.Sc.

Education Coordinator and Program Leader Community Action

Jennifer Haley, M.Sc.

Microbiologist / Educator

Jason Szwec, B.Sc.

Research Assistant

Julie Street, B.Sc.

Educator

Ryan MacKenzie, B.Sc.

Biologist

Pam Maloney, B.Sc.

Communications / Development Officer

Raymond Gauthier

Laboratory Coordinator

Crystal Veenstra

Laboratory Technician / Educator

Philip Lavictoire

Laboratory / Field Technician

Sharon Van Den Oetelaar

Administrative Assistant

Jennifer Duplain

Administrative Assistant

Stacey Scott

Coordinator, Cornwall Carbon Reduction Initiative

Jennifer Mattice

Coordinator, Cornwall Carbon Reduction Initiative

Graduate students

Mahsa Fathi

University of Ottawa

Sarah Harrison

University of Ottawa

Idalia Milan

Royal Roads University

Roxanne Razavi

Queen's University

Alicia Ritcey

Queen's University

Student Employees

Michelle Berquist

Research Assistant

Will De Witt

Research Assistant

Brianne Vervoorn

Research Assistant

Natasha St. Pierre

Summer Camp Coordinator

Rebecca Kirkby

Summer Camp Coordinator

Marianne Moore

Summer Camp Assistant

International students

Arnaud Le Nevanen

Ecole nationale du genie de l'eau et de l'environnement de Strasbourg, France

Candice Mizon

Ecole nationale du genie de l'eau et de l'environnement de Strasbourg, France

Summer Interns

Matthew Derouin

Dylan Ridal

Daniel Filiol

Laura St. Marseille

High School coop students

Lisa Hickey

Lacey MacDonald

Martin Vanderbyl

Volunteers

Kylie Aubie, Jason Brown, David MacKenzie,

Kai Markverson, Alex Mesmen,

Donna Orwell, Katarina Pavlica

Jessica Phillips, Nick Proulx, Janet Riddell,

Amanda Willet

Research Affiliates

Jules Blais

University of Ottawa

Linda Campbell

Queen's University

Peter Hodson

Queen's University

David Lean

University of Ottawa

Michael Power

University of Waterloo

Michael Twiss

Clarkson University





Laboratories

The River Institute laboratories hold and maintain designations from CALA (Canadian Association for Laboratory Accreditation Inc.) for analytical and procedural competence in accordance with the recognized International Standards ISO/EIC 17025:2005. In order to retain these designations, the staff must complete regular proficiency tests and audits to ensure accuracy and excellence in laboratory procedures and analysis. Not only does the laboratory accreditation ensure accuracy in research, it is also required by many clients for analytical services. This laboratory expertise is passed on to students taking classes and courses at the River Institute.

Remedial Action Plan (RAP)

The River Institute has worked diligently with its partners in the St Lawrence River Restoration Council (SLRRC) to fulfill ecosystem assessment and restoration activities that are part of the Remedial Action Plan (RAP) for the river. The River Institute is currently working together with the SLRRC to document the success of the RAP and complete a major assessment toward delisting the St Lawrence River as an Area of Concern.

Ecotoxicology

Mercury – the local picture

The management of contaminated sediments in the Cornwall area has been scrutinized over the years, and the River Institute has played a vital role in the process. Several contaminated zones along the Cornwall waterfront have been identified and studied extensively. Studies revealed a mercury paradox - fish from one of the three contaminated sediment zones contain significantly higher amounts of mercury than the other zones, even though the levels of sediment contamination are similar. Subsequent studies have shown that mercury is also higher in invertebrates consumed by these fish. Two sources could contribute to enhanced mercury delivery to this zone compared with other zones along the waterfront: (1) diffusion of mercury from sediment porewater, and (2) inputs of methyl and total mercury from combined sewer overflows and storm sewers. Another

potential pathway for mercury to move into overlying water is via gas bubbles that are released from composting woody debris within the sediments - these bubbles cause mercury-rich porewater to flow and re-suspend the sediments. Recent data indicate that methylmercury in porewater is a main source of mercury to benthic invertebrates. The River Institute is working with the SLRRC to evaluate whether additional remedial options can be considered to reduce mercury transfer to biota.

Mercury in Storm Sewer Discharges

Sewer discharges into the river create near-shore effects that contribute to overall river health. Storm water discharge includes surface runoff that is often collected into single discharge areas in the river – some of these discharge areas are in settling zones which do not dissipate easily. The River Institute is sampling storm water runoff to measure the mercury content and evaluate its contribution to the sediments and the river water. This work is being conducted on behalf of the Ministry of the Environment and the St. Lawrence River Restoration Council to measure mercury sources and inputs in the Lamoureux Park area.

Tributary Sources of Mercury and Nutrients

Tributaries such as the Raisin River feed nutrients as well as contaminants to the St. Lawrence River. In order to determine tributary inputs and contributions to the St. Lawrence River sediments, the River Institute is working together with Dr. David Lean and his team at the University of Ottawa on this OMAFRA-funded project. The project involves sampling the headwaters of the Raisin River for mercury and nutrient levels to compare with the tributary input levels, and determine relative input rates and concentrations in the St. Lawrence. The River Institute hopes to expand this work to include smaller creeks and tributaries that feed into Lake St. Francis. This work will provide loading estimates from the tributaries that can be linked and compared with urban stormwater discharges and mercury transfer from contaminated sediments into the river.

Mercury sources Lake St Francis

In Lake St. Francis, east of Cornwall, predator fish such as pike and walleye demonstrate mercury levels approximately 2 times higher than fish above the dam in Lake St. Lawrence. In 2008, the River Institute undertook an extensive sampling program of fish in Lake St. Francis to relate the mercury levels to individual habitats, fish movements, and transfer of mercury in Lake St. Francis. These samples are currently being analyzed in the laboratory, and results will be reported in 2009.

Bay of Quinte

In 2007, the River Institute partnered with the Bay of Quinte Remedial Action Plan Restoration Council to assist with an assessment of the contaminants in the Bay of Quinte, and their contribution to fish consumption advisories. In 2008, a report was generated for the Bay of Quinte RAP with recommendations for assessing the progress of the remediation efforts and the criteria that would lead to delisting the Bay of Quinte Area of Concern.

Microbial remediation of contaminated soil

The River Institute's new microbiologist, Jennifer Haley, is working with Lafleche Leblanc Soil Recycling to monitor and evaluate the efficacy of contaminant-composting bacteria in the soil decontamination process. This project will develop new and rapid methods to monitor the viability and efficiency of the bacteria at

Staff Profile



Jennifer Haley, M.Sc.

Jennifer joined the River Institute in September 2008 as a Microbiologist/Educator. She teaches Microbiology and General Biology for the

Environmental Technician program at St. Lawrence College (Cornwall campus), and Microbiology for the Bachelor of Nursing program (via Laurentian University). In the laboratory, Jennifer is involved in a joint project with Lafleche Leblanc Soil Recycling to develop new methods to monitor the viability and efficiency of bacteria at each stage of the soil remediation process. In 2009, Jennifer will be working on issues related to waterborne bacteria and beach safety in the Cornwall area.

each stage of the process and find ways to make the process more efficient.

Water Quality

Bacteria sources in public areas

Previous work has shown that E.coli levels at some local beaches may be affected by tributary outflows and river hydrologic effects. In 2008, the River Institute studied and mapped tributary flow patterns to determine the effects of individual tributaries on public areas. This project will help predict daily changes in recreational water quality, and identify RAP priorities for tributary remediation for bacteria.

Algae and nutrient loading

Nutrient outflow from tributaries is considered a serious impairment to the St. Lawrence River due to its ability to cause algae-related effects, i.e. depleted oxygen, toxic algae, or taste and odour. In 2008, the River Institute was a partner in a project funded through the Canada Ontario Agreement Program and the Raisin Region Conservation Authority to measure the outflow of mercury and nutrients such as nitrogen and phosphorus from all major tributaries into Lake St. Francis. The study will identify the tributaries; measure the levels of nutrient contribution; and identify the types of algae that are associated with these tributary nutrient effects. In 2009, this work will continue to determine the effects of the nutrients on the ecosystem.



Research

Biodiversity



Water Levels

In 2008, Dr. Jerome Marty and international student Arnaud Le Nevanen worked on data to identify flow-related variables that are responsible for changes in the food web. Dr. Marty has found that ramping (or hydropeaking) water flow rates through dams can result in a reduction of the length of the food web below the dam. This work will be extended in 2009 to study the effects of flow rates and changing water levels on the St. Lawrence River ecosystem.

Invasive species - *Hemimysis anomala*

Hemimysis anomala, the Bloody Red Shrimp, is a new species in North America that could potentially modify the food web of the St.

Lawrence River and Great Lakes. It relies on both algae and zooplankton as food sources and is very effective in avoiding predators. Dr. Marty is one of the few scientists in North America studying *Hemimysis*. In 2008, he worked with the Department of Fisheries and Oceans to collect samples of *Hemimysis* in the Great Lakes. In the coming year, he plans to establish monitoring sites in the St. Lawrence River to better map the distribution of *Hemimysis*, and conduct the first ecological study on *Hemimysis* in the Great Lakes / St. Lawrence basin.

Species at Risk – Cutlip Minnow

Cutlip Minnow (*Exoglossum maxillingua*) is a threatened species that historically has been identified in only four locations in the St. Lawrence River. In 2008, a grant from the Ministry of Natural Resources Species at Risk Stewardship Fund enabled the River Institute to identify the habitat needs and population trends of this rare species in the St. Lawrence River. So far, Cutlip minnows have been found in one of the four historic locations, and two new sites have been located with healthy Cutlip minnows. The project will continue in 2009 to characterize the status of Cutlip minnow, and provide a baseline for species protection and recovery strategies.

Staff Profile

Ryan MacKenzie, B.Sc.

Ryan MacKenzie joined the River Institute in 2008 as the lead biologist for the Cutlip minnow research project.

Originally from Montreal,

Ryan obtained a B.Sc. in Biology from Concordia University, and a D.E.C. in Ecological Technology from Vanier College. At the River Institute, Ryan is enjoying this opportunity to expand his field experience to aquatic biology. His frequent river sampling expeditions have been combined with habitat mapping work for other River Institute projects.

Track a Fish

Two years ago, Dr. Brian Hickey began experimenting with radiotransmitters to track and characterize the movement, feeding patterns, and habitats of predator fish such as pike and walleye in the Cornwall area. Since then, the River Institute's Board of Directors has donated annually to this project to enable the work to progress and allow more students to take part. Information gathered from the radio tracking work complements many of the River Institute's other research projects on biodiversity and source contamination. The radio tracking results are useful for mapping out future sampling programs, and it is expected that the results will help direct habitat restoration projects.



Verdant Power

Verdant Power is a company that is investigating a new technology for the Cornwall area utilizing underwater turbines as an alternative source of hydro-electric power. The River Institute is involved in this initiative as environmental advisors, with a particular interest in how the project will affect fish habitat. In 2008, Dr. Brian Hickey worked on identifying the affected fish species and mapping habitats in the proposed area.

Medicinal Plants

Many aboriginal groups in the St. Lawrence Seaway region continue to use plants for traditional medicines and food. To answer questions and concerns about the potential for mercury exposure via medicinal plants, the River Institute collaborated with the Mohawks of Akwesasne, the Algonquins of Pikwakanagan, the Aboriginal Strategy Group, and the South Nation Conservation Authority to conduct a survey of medicinal plants that are important to aboriginal cultural practice. Plants were collected from traditional sites, and analyzed for mercury. Results showed that although mercury concentrations were below the recommended consumption levels, great variability was detected between plant species and different sites. This work will continue in an attempt to characterize the site and species variability.

Bats

Since 2006, Idalia Milan of Royal Roads University has worked with Dr. Brian Hickey on a project to examine and track the high mercury levels found in bats in the St. Lawrence Region. The project involved collection and mercury analysis of fur clippings, bat droppings, and insects. Interesting variations were found in mercury levels among different species of bats and their habitats. These variables will be compared to determine the biological significance of mercury in bats and how mercury manifests in the higher food web in our area. This work will also give relevant information on bats as an indicator species for other contaminants. This work is expected to be published in 2009.

Mosquito Monitoring

Under contract to the Eastern Ontario Health Unit, the River Institute undertook the 2008 Mosquito Monitoring Program to monitor and assess the incidence of mosquitoes carrying West Nile Virus. The River Institute took part in this program by placing traps and collecting samples of mosquito populations in urban and rural areas across Eastern Ontario. All results were compiled and evaluated by the Eastern Ontario Health Unit to monitor regional risks.

Annual Conference

The 15th annual conference on the Great Lakes/St Lawrence River Ecosystem took place May 6-8, 2008 at the NavCanada Conference Centre. The conference theme was "Managing Ecosystems Regulated Rivers and Watersheds: A conference series highlighting 50 years of hydroelectric power development and the construction of the St. Lawrence Seaway on the International Section of the St. Lawrence River". This year, the River Institute partnered with the Great Rivers Center at Clarkson University to host the annual event. The conference coincided with the 50th Anniversary of the St. Lawrence Seaway including the Moses-Saunders Dam. 120 delegates attended to discuss current issues related to the ecological and social challenges of regulated rivers and waters in Canada and around the world. Proceedings of the 2008 conference will be published in 2009 in *Hydrobiologia*.





Graduate students

The River Institute is affiliated with Ottawa University, Queen's University and the University of Waterloo through adjunct professorships. The adjunct status allows individual Ph.D. research scientists to supervise graduate students from these universities in their field research placements. Drs. Ridal, Hickey, and Marty each hold adjunct professor status at one or more of these universities. Dr. Hickey is also authorized by Royal Roads University in Victoria, B.C. to supervise graduate students in Environmental Science. In 2008, two graduate students from Queen's University and one from Royal Roads University worked at the River Institute on field research relating to mercury in the environment.

Post-secondary programs

Bachelor of Science (Laurentian University) in Nursing – St. Lawrence College

The River Institute provides instruction for the Anatomy, Physiology, and Microbiology courses for the Bachelor of Science in Nursing program offered at St. Lawrence College (Cornwall campus). The River Institute's accredited microbiology laboratory and qualified educators are a major factor in enabling St. Lawrence College to offer the program (via Laurentian University) in Cornwall.

Environmental Technician Program, – St. Lawrence College

The Environmental Technician program has become the flagship program that links the River Institute with St. Lawrence College. In 2008, the Ministry of the Environment's Entry Level Drinking Water Operator course was incorporated into the program - this course is part of the initial qualifications for Water Treatment Operators in Ontario, and gives the students an employment advantage upon graduation. With an approximate 80% job placement rate, alumni from this program have secured jobs in water treatment plants, private consulting firms,

laboratories, conservation authorities, government agencies, and even at the River Institute itself! Two of the graduates in 2008 opted to utilize the university articulation agreement with Royal Roads in Victoria, BC, to transfer directly from the college program into the third year of a University degree program in Environmental Science.

Secondary and Elementary Programs

Environmental Science Investigator

The ESI program provides secondary students (grade 7-12) with hands-on educational opportunities to peak their scientific interest. Through a variety of field based and laboratory techniques, students learn how to explore and investigate their natural environment. This program provides opportunities for students to work with scientists on topics related to environmental monitoring and analysis. Topics include fish sampling and analysis, aquatic invertebrates, chemical and microbiological analysis of water, aquatic invertebrates, and DNA fingerprinting/biotechnology.

Testimonial:

'Very interesting activity, very hands-on, and good teachers. I learned more on how much is actually involved in testing beach water. I worked at a beach in the summer and I always wanted to know how they determine if the beach would be closed or not. Now I have a greater knowledge on how it is done.'

- Student from North Dundas District High School

Water Quality and its Importance

In 2008, a new module was added to the ESI program for high school students. Through the "Water Quality and its Importance" module, students access the River Institute's accredited laboratories and expertise to learn and practice chemical and microbiological analyses of surface and ground waters.

Using samples taken from the St. Lawrence River, the tap, or their own tap or well water from home, students learn to analyze some of the most important indicators of water quality and learn how to relate their testing results to water quality, the ecology of aquatic systems, and human health.

Special Kids

This inspirational program is designed to bring science to young people with developmental challenges or enhanced abilities. The programs are custom-designed to accommodate the needs and abilities of the participants, and to enable them to participate in hands-on science. In 2008, group programs were delivered at the Ottawa Children's Treatment Centre School (at CHEO) to introduce children to pond life and animals. The Teen Club of the Ottawa Children's Treatment Centre - Cornwall took part in outdoor sampling expeditions on the river and at Rotary Creek, and one-on-one mentoring sessions took place throughout the year at the River Institute to challenge individual school kids with advanced abilities.

Testimonial:

'I don't know what was better – catching all the fish, or going home to brag about it to my family!'

- Special Kids participant 2008

Elementary and Secondary School programs

The River Institute offers hands-on workshops that are designed to match the science curriculum at every grade level. Students are motivated to learn about nature and the environment in activities that include catching and tagging fish in the river; sampling insects and plants in the marsh; and processing and analyzing samples in the laboratory. The intent is to help kids understand the importance of the environment in our daily lives, and to discover that science is fun!

Eastern Ontario Children's Water Festival

Water Festival is a fun and interactive program of activities that teach young people specific messages about water resources and water conservation. The River Institute coordinates two, 3-day water festivals each year in English and French. 1200 children from all over Eastern Ontario took part in

2008 - they learned about water technology, dams, and hydropower, as well as the importance of water conservation. Water Festival is funded entirely by private donations and a grant from the Eastern Ontario Water Resources Committee.

Envirothon

Envirothon is an annual environmental competition that educates high school teams in topics such as aquatic ecology, forestry, soils, wildlife, and biodiversity. Throughout the school year, students participate in hands-on workshops led by local educators and scientific professionals. The River Institute organizes the workshops and the Regional Envirothon Competition for Eastern Ontario in the Spring of each year. In 2008, the team from North Dundas District High School won the Regional Envirothon competition and placed third at the Provincial competition!

Science Fair

Many of the River Institute staff members participate as judges for the local Science Fairs including the Akwesasne Science Fair. Every year, several students are invited to present their Science Fair projects at the poster session of River Institute's Annual Conference.



Community Action

Science and Nature Speaker Series

Hosted by the St. Lawrence River Institute and the Cornwall Public Library, the Science and Nature Speaker Series is a community education program for anyone interested in learning more about animals, insects, chemicals, nature, and the environment in Ontario and around the world. Speakers representing academia, conservation authorities, the private sector, and the River Institute have presented topics for the Speaker Series. Initiated with start up funds from the Ontario Trillium Foundation, the Speaker Series is now funded entirely by sponsorships and community donations, and is offered free of charge to the general public.

Eco-Friends Summer Camp

Eco-friends is a science and nature-themed summer day camp for children aged 6 – 11. At Cooper Marsh, the campers enjoy hiking, frog catching, and pond dipping as they explore weekly nature themes throughout the summer. Each year, this summer camp program is filled to capacity with enthusiastic campers.

Jr. Scientist Camp

Based on the success of the Eco-Friends camp, the River Institute recognized the need to create a summer camp program for older kids. In 2008, a major sponsorship from TD Canada Trust helped establish the Jr. Scientist camp: a new opportunity for young people aged 12 – 15 to delve deeper into scientific investigation and learn more about scientific methods. This program exceeded all expectations, and the

2008 two week pilot project was a huge success. The young scientists assisted and participated in many of the River Institute's research activities, including fish sampling and analysis, aquatic invertebrate sampling, and chemical and microbiological analysis of water. Great adventures and exciting moments on the river left all participants raving and anxious to return.

Testimonial:

'I want to thank you and your staff at the River Institute. Ryan, Shanley and Cassidy had nothing but excitement and raves about this camp. They couldn't stop talking about what a great time they had, how interesting and informative it was. I don't even think they realized how much they were learning. Thank you ever so much for making this educational camp (don't let them know that I said it was educational) a great and memorable time.'

- Sonia Dow – parent, Jr. Scientist camp



Youth Internship program

The Youth Internship program was initiated in the summer of 2008 to provide guidance and work experience for teenagers considering post-secondary studies in science. The program was designed to provide opportunity for young people to become engaged and active in scientific work by working side by side with research scientists and university students. In 2008, four summer interns took part in this dynamic program.

Cooper Marsh Winter Fun Week

Winter Day Camp participants had a great time snowshoeing, sledding, building a beaver lodge, and dissecting fish during March Break 2008. Daily themes included animal tracking, winter wildlife, migration, and science experiments with snow and ice.



Open House

In 2008, the River Institute Open House welcomed over 100 visitors to take part in laboratory and outdoor demonstrations. Visitors enjoyed fish netting expeditions, sampling sediments along the shoreline, dissecting fish, and identifying species in the lab. The entire staff was on hand to give guided tours and answer questions about the River Institute.

International Coastal Cleanup

Volunteers from the River Institute and St. Lawrence College's Environmental Technician Program participated in the Ocean Conservancy's 2008 International Coastal Cleanup along the Cornwall waterfront. Some of the more obscure items collected from this year's cleanup included a trampoline, shopping cart and television. Twelve bags of garbage and recycling were collected in the local clean-up effort.

Clean Air Cornwall

Dr. Jeff Ridal continues to chair the Clean Air Cornwall committee. This committee is comprised of local business managers, industry representatives, and volunteers who meet regularly to assist and encourage one another on ways to reduce air emissions.

Cornwall Carbon Reduction Initiative

As it moves into its third year, the CCRI continues its initiatives to encourage local citizens to take action in energy conservation. In 2008, CCRI hosted the 2nd Annual Solar Model Car Challenge in

which teams from nine schools designed, built, and raced their solar powered cars for a panel of volunteer judges. CCRI presented 'Clean Air Day' in collaboration with Cornwall Transit and the Cornwall Public Library to promote the environmental and economic benefits of taking the bus. Free public transit was provided to all citizens for the day. The CCRI also hosted a Speakers Forum, which featured influential speakers such as NDP Energy and Environment Critic, Peter Tabuns, and Opposition Leader, Stéphane Dion. The River Institute is a founding partner of the CCRI.



Communications

The River Institute News

A monthly article in the Seaway News weekly paper provides readers with news, updates, and information about events and discoveries at the River Institute.

Website

Visit www.riverinstitute.ca for information about research, education, and community programs at the River Institute. A news page provides regular updates about ongoing activity.

Brochure

A new brochure was developed in 2008 to provide a general overview of the River Institute and its activities. This brochure will be distributed to the general public at all River Institute events, including Speaker Series, public talks, conferences, trade shows, and fundraising events.

Public talks

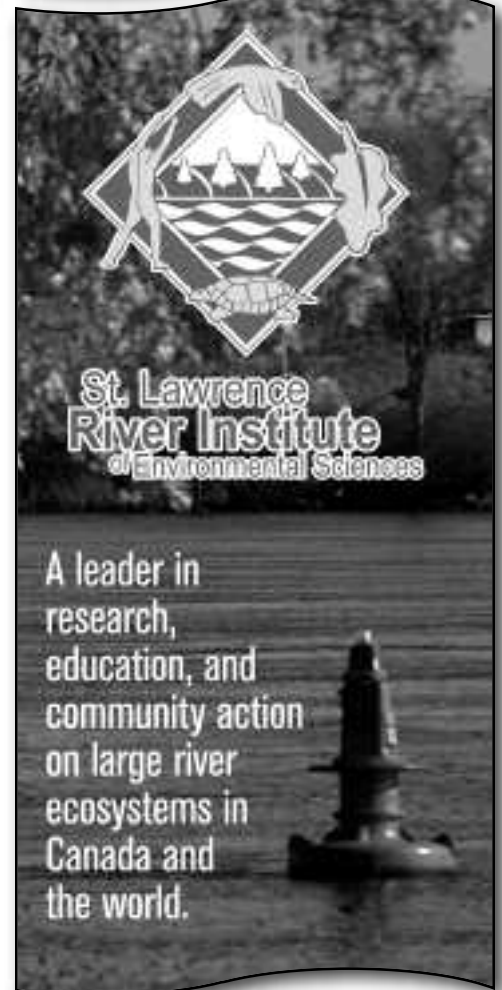
In order to increase awareness in the community of the River Institute's programs and activities, staff members give presentations on a regular basis to community groups, service clubs, seniors groups, and other interest groups.

In the News:

The River Institute is often featured in the local press as the environmental opinion for issues in our region.

Rotary Award

On May 1, 2008, the Sunrise Rotary Club of Cornwall bestowed the River Institute with a Rotary Foundation Certificate of Appreciation. This honour was to recognize the exemplary work done by the Institute in promoting the science of great rivers; raising awareness of environmental issues; and for research into the causes and solutions of environmental problems.



Board donation

In 2007 and 2008, the River Institute Board of Directors generously supported the Track a Fish program. Dr. Brian Hickey utilized these funds to implant radio transmitters into fish and track their movements. Dr. Hickey has now followed over 20 individual fish, and has engaged many summer students, interns, and coop students in the process. The resulting data complements many ongoing research projects, including the analyses of mercury in the aquatic food chain.

Trillium grant

In 2008, the River Institute received a 2-year grant from the Ontario Trillium Foundation (OTF) to build and improve projects related to communications and development. The two-year grant will enable the River Institute to develop communications materials such as an enhanced website, a corporate brochure and a trade show display in order to better inform the public on its activities and programs. The grant will also be used to build an effective fundraising campaign that will allow for growth and sustainability of the River Institute's research and education programs.

Sustainability Fund

As the River Institute's staff, programs, and operations continue to grow, fundraising efforts must increase to meet the financial needs. In order to meet the objectives set out in the Institute's Strategic Plan, the Fundraising Team set lofty goals for the future – one of which involved the establishment of the Sustainability Fund: an operating endowment fund intended to support long-term sustainable growth and program development at the River Institute. Major donations and pledges to the Sustainability Fund are solicited on an ongoing basis.

Thompson Rosemount Group

Through its continued investment in partnerships with the River Institute, the Thompson Rosemount Group sets an example of leadership in the community for innovation and science. The Thompson Rosemount Group has demonstrated its commitment to the environment by pledging a \$50,000 multi-year commitment to the River Institute Sustainability Fund.

Web donations

The River Institute is now able to accept on-line donations to support research, education, and community programs. Donors may also give directly to the Sustainability Fund. All on-line donations are processed through Canada Helps, a secure website that helps Canadian charities receive donations electronically.

TD Canada Trust sponsorship

In 2008, TD Canada Trust and TD Friends of the Environment committed \$60,000 over three years to support the River Institute's Jr. Scientist Youth Camp, and the Eco-Friends Summer Camp programs. TD Canada Trust Friends of the Environment Foundation has supported the Eco-Friends camp for many years with funding for essential equipment such as microscopes, nets, and sampling supplies. The River Institute is very grateful to TD Canada Trust for their dedication to environmental improvement and providing opportunities for young people.



Partners and Sponsors

Donors/Sponsors

Alcoa Foundation
Eric Baker Foundation
Bell Aliant
Casco Inc.
CIBC Wood Gundy
Eastern Ontario Water Resource Committee
Great Lakes Sustainability Fund
Harold Crabtree Foundation
Imperial Oil
Maurice Price Foundation
Natural Sciences and Engineering Research Council of Canada (NSERC)
Ontario Ministry of the Environment
Ontario Ministry of Natural Resources
Ontario Power Generation-
Ottawa/St.Lawrence Plant Group
Ontario Trillium Foundation
Raisin Region Conservation Authority
Royal Bank of Canada – Blue Water Fund
Shell Environmental Fund
South Nation Conservation Authority
Sunrise Rotary Club of Cornwall
Mr. Tom Kaneb
TD Canada Trust
TD Friends of the Environment Foundation
The Thompson Rosemount Group
TransCanada Pipeline Ltd.

Local Partners

Akwesasne Mohawk Board of Education
Baxter Conservation Area
Catholic District School Board of Eastern Ontario
Cornwall and Area Chamber of Commerce
Cornwall Public Library
City of Cornwall
Clean Air Cornwall

Conseil des écoles publiques de l'est de l'Ontario
Conseil scolaire de district catholique de l'Est ontarien
CooperMarsh Conservation Area
CooperMarsh Conservators Inc.
DL Services
Eastern Ontario Health Unit
Eastern Ontario Water Resources Committee
Job Zone d'emploi, Cornwall
Lafleche Leblanc Soil Recycling
McDonald Duncan Law Office
Mohawk Council of Akwesasne
Mississippi Valley Conservation
Mill of Kintail Conservation Area
Morbern Inc.
Paris Holdings
Parks of the St. Lawrence
Ottawa Stewardship Council
Prescott-Russell Stewardship Council
Raisin Region Conservation Authority
Resource Stewardship S.D.& G. Council
SD & G Science Fair
Seaway News
Service Canada
Standard Freeholder
South Nation Conservation
St. Lawrence College
St. Lawrence River Restoration Council
United Counties of Prescott-Russell
United Counties of Stormont Dundas. & Glengarry
Upper Canada District School Board

Outside Partners

Canadian Council for Human Resources in the Environment Industry
Canadian Water Network
Centre Saint-Laurent
Children's Water Education Council
Clarkson University
Department of Fisheries and Oceans Canada
Eco Canada
Environmental Commissioner of Ontario
Environment Canada: Ontario Region and Quebec Region
Lower Trent Conservation Authority
Ontario Ministry of Research and Innovation
Ontario Forestry Association
Ontario Ministry of Agriculture / Food and Rural Affairs
Ontario Ministry of Environment
Ontario Ministry of Natural Resources
Ontario Ministry of Research and Innovation
Ottawa University
Queen's University
Rideau Valley Conservation Authority
Royal Roads University
SGS Lakefield Environmental Services
University of Waterloo
Verdant Power

Thank you!



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Financial Statements

St. Lawrence River Institute of Environmental Sciences

Condensed Audited Financial Statements

Statement of Revenue - Schedule 1 - For the year ending December 31, 2008

	General Fund	Sustainability Fund	Capital Asset Fund	December 31 2008 Total	December 31 2007 Total
Revenues					
Conference (Schedule 2)	\$ 41,147	\$ -	\$ -	\$ 41,147	\$ 64,597
Contributions (Note 14)	41,349	-	-	41,349	33,459
Donations	142,116	11,970	5,000	159,086	119,784
Donations in kind	-	-	-	-	19,580
Fee for service – analytical testing	27,977	-	-	27,977	17,711
Fee for service – teaching	121,431	-	-	121,431	124,863
Grants – Federal Government	29,520	-	-	29,520	20,842
Grants – Provincial Government	85,180	-	-	85,180	99,138
Grants – The Ontario Trillium Foundation	68,084	-	-	68,084	23,413
Investment income	3,737	-	49	3,786	4,504
Projects	165,470	-	-	165,470	115,418
Rebate – Municipal Government	9,726	-	-	9,726	9,608
Seminar fees - educational programs	64,320	-	-	64,320	62,146
	\$ 800,057	\$ 11,970	\$ 5,049	\$ 817,076	\$ 715,063

Statement of Operations and Changes in Fund Balances - For the year ending December 31, 2008

	General Fund	Sustainability Fund	Capital Asset Fund	December 31 2008 Total	December 31 2007 Total
Expenses					
Advertising and promotion	11,469	-	-	11,469	6,421
Bad debts	15,000	-	-	15,000	-
Bank charges and interest	2,592	-	-	2,592	2,089
Conference (Schedule 2)	8,680	-	-	8,680	16,045
Consultant fees	62,689	-	-	62,689	80,964
Insurance	17,876	-	-	17,876	18,238
Meetings	790	-	-	790	1,130
Miscellaneous	9,603	-	-	9,603	12,278
Office supplies	6,947	-	-	6,947	8,098
Professional fees	7,950	-	-	7,950	7,022
Property taxes	24,314	-	-	24,314	24,019
Purchased services – analytical testing	27,148	-	-	27,148	11,850
Maintenance – building	13,472	-	-	13,472	14,765
Salaries and benefits	494,218	-	-	494,218	432,877
Supplies – projects	44,974	-	-	44,974	35,302
Telephone	7,686	-	-	7,686	6,151
Travel	19,508	-	-	19,508	15,089
Utilities	14,164	-	-	14,164	14,303
	789,080	-	-	789,080	706,641
Excess of revenues over expenses before depreciation	10,977	11,970	5,049	27,996	8,422
Depreciation	-	-	(32,790)	(32,790)	(31,990)
Excess (deficiency) of revenues over expenses	10,977	11,970	(27,741)	(4,794)	(23,568)
Fund balances, beginning of year	143,462	-	880,562	1,024,024	1,047,592
Unrealized gain on available-for- sale investments	-	370	-	370	-
Interfund transfer (Note 12)	(32,366)	32,366	-	-	-
Fund balances, end of year	\$ 122,073	\$ 44,706	\$ 852,821	\$ 1,019,600	\$ 1,024,024

Copies of the audited financial statements with auditor's report are available upon request.

Financial Statements

St. Lawrence River Institute of Environmental Sciences
 Statement of Financial Position
 As at December 31, 2008

	General Fund	Sustainability Fund	Capital Asset Fund	December 31 2008 Total	December 31 2007 Total
Assets					
Current assets					
Cash	\$ 66,059	\$ 354	\$ 1,531	\$ 67,944	\$ 93,851
Cash – restricted (Note 11)	10,420	-	-	10,420	10,010
Investments (Note 3)	100,000	6,900	-	106,900	32,366
Accounts receivable	152,252	-	-	152,252	119,436
Due from General Fund (Note 4)	-	957	-	957	-
Due from Capital Asset Fund	-	-	206	206	3,223
Due from related party (Note 5)	11,798	-	-	11,798	-
Prepaid expenses	12,590	-	-	12,590	16,051
	353,119	8,211	1,737	363,067	274,937
Investments (Note 6)	-	36,495	-	36,495	-
Capital assets (Note 7)	-	-	851,084	851,084	879,081
	\$ 353,119	\$ 44,706	\$ 852,821	\$ 1,250,646	\$ 1,154,018
Liabilities					
Current liabilities					
Accounts payable and accrued liabilities	\$ 19,843	\$ -	\$ -	\$ 19,843	\$ 21,364
Due to Capital Asset Fund (Note 8)	206	-	-	206	3,223
Due to Sustainability Fund (Note 9)	957	-	-	957	-
Due to related party	-	-	-	-	6,209
	21,006	-	-	21,006	30,796
Deferred contributions (Note 10)	199,620	-	-	199,620	89,188
Cash - restricted (Note 11)	10,420	-	-	10,420	10,010
Fund balances					
Unrestricted	122,073	-	-	122,073	143,462
Invested in capital assets	-	-	851,084	851,084	879,081
Internally restricted (Note 12)	-	32,736	-	32,736	-
Externally restricted (Note 13)	-	11,970	1,737	13,707	1,481
	122,073	44,706	852,821	1,019,600	1,024,024
	\$ 353,119	\$ 44,706	\$ 852,821	\$ 1,250,646	\$ 1,154,018

Copies of the audited financial statements with auditor's report are available upon request.

Notes





The St. Lawrence River Institute of Environmental Sciences was established in 1994 as a unique community partnership involving the Mohawks of Akwesasne, government, education, business, and industry.

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