

**Successful Advocacy:  
Case Study of the Creation of the  
St Lawrence River Institute of Environmental Sciences**



**By: Sara Bryce  
Student ID # 3692619  
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## **Abstract**

This case study proves the possibility that lies within proactive communities of empowered and informed individuals. Events in the small Canadian town of Cornwall along the shores of the St Lawrence River prove that grassroots advocacy can hold the capacity to change the future of a community – and play a role in shaping the future of all societies. This case highlights the advocacy approach taken by an empowered and concerned community who realize their place in the wider population of this planet. The ethical tradition historically imbued by the people of this community – the Mohawk – was not shared by the white culture that later made up the majority of the population. The people of the area learned from the Mohawk ethical framework and began to see sustainability as the only option.

A group of concerned individuals came together in a government initiative for remediation as a response to the polluted river on which they live. They soon realized, however, that this remediation plan was insufficient and that adequate, multi-layered research was needed to tackle the challenges they faced. Because the community took a multilateral approach and thought about the impacts on all areas of community – not just environmental research advancement, their success was significant and sustainable.

This paper outlines what led to this devastating pollution; how the community turned this negative situation into such an empowered one; how they acquired support from the local community, provincial, federal and transnational governments for their endeavour; and how they convinced the public that their vision was in the interest of the wellbeing of the wider community – that they were all stakeholders in the success of this enterprise. This study highlights a group of concerned and informed citizens in the Cornwall area who turned a negative situation – industry closures leaving behind a legacy of rising unemployment rates and contaminants polluting the river; and their home being named one of the worst polluted areas in all of Canada – into a positive opportunity.

## **Glossary of Acronyms**

ALCOA	Aluminum Company of America
AOC	Area of Concern
CBC	Canadian Broadcasting Company
GM	General Motors
IJC	International Joint Commission
NY	New York State
PAC	Public Advisory Committee
PCBs	Polychlorinated Biphenyls
RAP	Remedial Action Plan
SLRIES	St Lawrence River Institute of Environmental Sciences

## **Setting the Context**

### **History of Cornwall, Ontario, Canada**

In 1959, Canada saw the inception of the St Lawrence Seaway, a section of the St Lawrence River that was diverted through dredging and the creation of a locks system. This newly formed deep draft waterway allowed up bound ocean-liner ships to navigate into the upper body of the Great Lakes. This project also made way for a power development: the creation of an international hydro-electric station – a generating station that produces nearly 2 million kilowatts of power for both Canada and the US. However, these projects required the flooding of wide areas of land and consequently the resettlement of entire communities. In all, some 6,500 people were moved to new homes while some 550 dwellings were transported to awaiting foundations in the newly created towns of Long Sault, Ingleside and Iroquois, (Seaway Commission, 1995). The St Lawrence Seaway not only impacted the *human* residents of this area, but also the fragile St Lawrence River aquatic ecosystem.

Since the completion of the St Lawrence Seaway in 1959, the St Lawrence River has been an industrial main street. Factories on both sides of the river have used it as a dumping ground, polluting the water, soil and air.

On the northern banks of the mighty St Lawrence River lies Cornwall, Ontario, Canada. The Cornwall waterfront has been the location of industrial activities for more than 100 years, (City of Cornwall, 2000). Historically, Cornwall has been a ‘blue collar town’ with its main economic back-bone being the pulp and paper mill *Domtar*, the textile-manufacturing plant *Courtaulds*, *Cornwall Chemicals* and a chlor-alkali plant, *ICI Forest Products*. Across the St Lawrence River, into Massena, New York, lie many more factories, including *Alcoa* and *Reynolds*, both aluminium producing plants, and a *General Motors* industrial unit.

Historically, this has led to significant outputs of several pollutants which have impacted the aquatic environment of the St Lawrence River as contaminated sediment and organisms transfer and cycle PCBs (polychlorinated biphenyls), mercury and other metals. The contaminant sources include industrial and municipal discharges, and diffuse sources such as urban stormwater and agricultural runoff. Contaminants also enter this ecosystem from upstream and from the Great Lakes via Lake Ontario and, finally, from

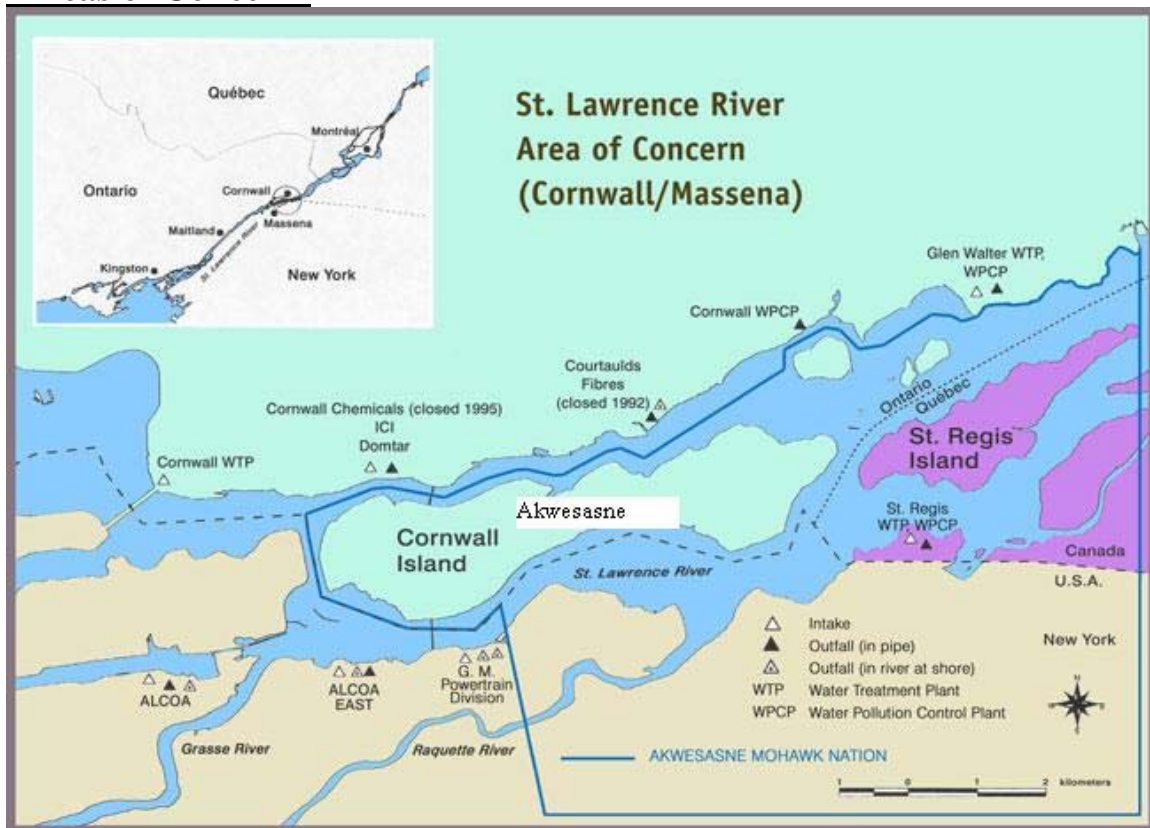
air deposition. Land use practices, shipping and the extensive shoreline and water flow alteration that resulted from the construction of the St Lawrence Seaway, continue to alter the natural ecosystem, (Environment Canada, 2003).

In the middle of the St Lawrence River, between Cornwall and Massena, lies the First Nations Mohawk reservation, Akwesasne, on Cornwall Island. The Mohawk and Iroquois people of Akwesasne once led a traditional, sustainable life. Over the years, industrial and shipping demands led to people and fish being poisoned by upstream smelters and industrial pollution. The social system on the reserve began to crumble and people turned to non-traditional activities like gambling, alcohol and making use of their trans-national border location for smuggling goods between Canada and the US. The ethical framework of their traditional value system was being threatened by interest in material wealth. These traditional values include loving the world as one's mother. The Mohawk believe that knowledge is powerful only when it is shared; that cooperation is the only means of survival; that the spiritual world is always present around us; that "the history of your people influences your future," (Lickers, 2002). This means that every action influences the communal future in ways people cannot imagine, so they need to remember to honour and respect the elders in their communities, and give thanks to every aspect of Creation in their daily lives. This belief system, which had sustained the people on the Akwesasne reserve for hundreds of years, "was being seriously eroded from the 1970s up until the Oka crisis,"<sup>1</sup> when the First Nations peoples' feeling of being helpless, isolated victims underwent profound change, (Lickers, 2002). They were forced to reach out to their white neighbours in their time of need. The outside society began to work *with* the First Nations people," (Lickers, 2002). Because the nearby white communities along the river were suffering from the same pollution problems and the loss of similar community values, local people from varied backgrounds were now able to create partnerships on a shared vision of the future.

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<sup>1</sup> Oka Crisis in Québec Canada: when confronted with a plan to expand a golf course on a long-held ancestral portion of their land, the Mohawks on the Kanesatake reservation decided to erect a barricade to city of Oka, Québec. Three months later, on July 11, 1990, the police intervened and attacked the barricade being guarded by the Natives. The conflict took on an entirely new perspective at that point and the Mohawk claims were no longer strictly territorial in nature, but rather a demand for recognition of Native independence, (Peace And Conflict, 1998).

## Development of the 'Remedial Action Plans' and appointment of 'Areas of Concern'



(IJC, 2003)

In 1909, long before the St Lawrence Seaway was built, the International Joint Commission (IJC) – a bi-national organization (Canada and the US) – was formed as part of the Boundary Waters Treaty. The treaty recognizes that pollution knows no boundaries and each country is affected by the other's actions in the lakes and river systems along their common border, (IJC, 1989).

Two major IJC initiatives have generated intensive study and action: the 1972 Great Lakes Water Quality Agreement which included additional commitments to rid the Great Lakes Basin ecosystem of persistent toxic substances; and the 1987 Great Lakes Remedial Action Plan Program, (IJC, 1989).

The Remedial Action Plan (RAP), which is a Protocol to the Great Lakes Water Quality Agreement signed by both the US and Canada, outlines the commitment from both parties to develop and implement, in cooperation with provincial and state governments, Remedial Action Plans (RAPs). The goal of the RAPs is to restore and

protect the Areas of Concern in the Great Lakes basin. These Areas of Concern (AOCs) are geographic areas where “human activities have caused or are likely to cause impairment of beneficial uses or the area’s ability to support aquatic life,” (RRCA, 1999). The implementation method of the RAPs was meant to be an ‘ecosystem approach’ for restoring and protecting environmentally degraded areas of the Great Lakes. An ecosystem approach considers humans, fish, wildlife and plants in environmental management, (RRCA, 1999).

In 1987, the Canada-Ontario Agreement Respecting the Great Lakes Water Quality was signed to provide a more specific framework for restoring Areas of Concern in Ontario. There were a total of 42 AOCs designated in Canada and the US, one of which was the section of the St Lawrence River at the Cornwall, Akwesasne, and Massena, New York borders. This AOC, as noted above, is a complex jurisdictional section with water that falls inside Canada, the US and on land belonging to the Mohawks of Akwesasne. The AOC is an 80 kilometre section of the river; the watershed of the AOC which includes tributaries entering the St Lawrence along this stretch is mainly agricultural and woodland with Cornwall forming the largest community, (RRCA, 1999).

Each AOC developed a Remedial Action Plan (RAP) to address environmental issues affecting the health of the ecosystem. In the Cornwall municipality, the RAP team was comprised of members from local communities including Akwesasne, Environment Canada, the Ontario Ministry of the Environment and the Ontario Ministry of Natural Resources, (Environment Canada, 2003). A Public Advisory Committee (PAC) was formed to provide input to the development of the plan and to build community support for implementation. The PAC held constituents from all walks of life within the community – from industry, academia, and community members who were interested in getting involved. In addition, the PAC established a technical-advisory committee. The RAP volunteer committee represented a wide variety of stakeholders including local municipalities, the Raisin Region Conservation Authority, industry, environmental organizations, First Nation groups and other local groups and individuals, (Eamon, pers comm.).

The New York RAP was led by the New York State Department of Environmental Conservation and had its own PAC with local members, (RRCA, 1999). The contamination of water, fish and sediment by the three industrial units mentioned previously on the river's southern shore, was addressed by state and federal Superfund processes. The Superfund Program was established in 1980 to locate, investigate, and clean up the worst polluted sites in the US. The EPA (Environmental Protection Agency) administers the Superfund program in cooperation with individual states and tribal governments, (EPA, 2006).

### **Unhealthy Ecosystem – Unhealthy residents**

The technical-advisory committee of the Public Advisory Committee (PAC) was responsible for reviewing remedial plans for their Area of Concern (AOC). The ecosystems encompassed many communities and this consequently led to differing goals within the remediation groups. In New York State, for example, the RAP members knew that Reynolds, Alcoa and GM employed a large bulk of their community. There were various stakeholders – industry representatives, community members, some of whom were also factory workers and environmentalists – with competing interests. An ethical dilemma was faced between prioritizing short-term economic gains and long-term ecological priorities. The presence of big multinational corporations was a complicating factor. There was growing debate on the best remediation plan, and a growing concern for what impacts the remediation plans would have on the community and its economy.

Impacts on the environment and on human health were taken into consideration in view of these proposed remediation plans. Through these proposals and further research, the Canadian RAP committee acquired a growing concern for St Lawrence AOC communities, particularly Akwesasne which lies adjacent to industries on both sides of the river. The contaminants had resulted in high levels of fluoride in the water of the Akwesasne peoples' home. These high levels of fluoride led to cases of fluorosis and “chronic fluoride poisoning in Akwesasne cattle ... manifested clinically by stunted growth and dental fluorosis to a degree of severe interference with drinking and mastication,” (Cornell, 1990). In other words, the cattle – along with fish and other native wildlife traditionally trapped by the Akwesasne peoples – were affected from

fluoride poisoning that weakened their bones and decayed their teeth, leading to stunted growth and low life expectancy.

In addition to high fluoride levels, there were also high levels of PCBs, mirex, mercury, zinc, lead, copper and other contaminants, (Richman and Dreier, 2001). Many Akwesasne residents made claims that “cattle died while giving birth, while others lost their teeth and died from malnutrition,” (Johansen, 1995). In addition, “Mohawk fishermen landed perch and bass with deformed spines and large ulcers on their skins,” (Ibid, 1995).

The risks of this pollution extend beyond direct health effects to humans and wildlife – both in Akwesasne and throughout the communities within the Area of Concern. It results in various economic, social and cultural impacts on the affected entities. Reductions in property values, health effects due to changes in diet from a fish-based diet to a less healthy diet, loss of health benefits due to avoidance of the river, increased costs due to purchasing bottled water, potential closures of industry and consequently a loss of jobs; these are just some of the issues that the peoples of this polluted ecosystem face.

Many unanswered questions surfaced during the preparation of the Cornwall and Massena RAPs. There was a lack of available and relevant resources for research that had been conducted on large fresh water river ecosystems. The groups experienced particular difficulties in obtaining scientific data pertinent to the ecosystem they were dealing with. The technical-advisory committee realized that there was no place that was designated specifically for research of aquatic ecosystems and environmental conditions of the world’s large rivers.

This underlines the complexity of the challenges faced by the remediation plans. There were competing interests within the government initiated Remedial Action Plans and the community members had a growing concern about the possibility of remediation without a truly integrated holistic and transdisciplinary approach that took all their needs and concerns into consideration. The RAP’s technical-advisory committee noted the lack of available resources that took a holistic approach of studying the Area of Concern and consequently incorporating all facets into the remediation plans. An approach that

includes society, culture, and spiritual values, beliefs and practices that link the members of the ecosystem with their environment was needed.

### **A Concerned Community Advocating for a Better Future: Turning a Negative Situation in to a Positive Opportunity**

The Co-Chair of the Technical Sub-Committee for the Canadian Remedial Action Plan was Rick Eamon. Eamon was also the President of the Cornwall Chamber of Commerce at the time. He had previously worked for the Ontario Ministry of the Environment for fifteen years, while teaching Water Supply and Pollution Control and Hydraulics at Cornwall St Lawrence College for two years, and has since been working as Vice-President and Director of a Cornwall-based engineering firm managing the Environmental Department, as well as President and sole proprietor of a water and sewage operations company. With the influence of his background and as a life-long community member, Eamon wanted to “make a positive contribution to [his] community and to the local environment,” (Eamon, pers comm.). At the time that Cornwall was named one of the Areas of Concern, it was also undergoing scrutiny for its reputation for smuggling and as a ‘blue-collar’ mill town facing industry closures. As Eamon states, “many of these industries, which made up Cornwall’s economic foundation, were closing up shop and moving overseas where they could acquire cheaper labour and lower environmental restrictions – leaving in their wake a legacy of contaminants polluting the St Lawrence River ecosystem,” (Eamon, pers comm.). This negative situation could have led to disparagement and pessimism for Cornwall’s situation; instead however, the technical advisory committee proposed a solution that bridged the nexus of Cornwall’s pertinent issues.

Through the process of developing the Remedial Action Plan (RAP), it became evident that not only was this section of the St Lawrence River not well integrated into existing research programs, but information and research on the special problems facing large rivers was scarce. Thus, Eamon, as both a member of the technical-advisory committee of the Canadian Remedial Action Plan, and the President of the Cornwall Chamber of Commerce, wanted to not only clean up the environment, but also turn Cornwall’s reputation around. Taking the state of Cornwall’s ecosystem into account,

along with its economic and social condition, the technical-advisory committee of the Cornwall RAP decided that “Cornwall should lead in the development of a research institute that would focus on holistic, transdisciplinary research,” (Great River Quarterly, 1994). Another member of the PAC, Henry Lickers, a Seneca, a biologist and the Director of the Mohawk Council of the Akwesasne Department of the Environment, shared in this vision of creating a river research institute. The community felt that a research institute would improve human relationships with river ecosystems in their area and throughout the world. The institute would do large river scientific research to assist with the remediation of the St Lawrence ecosystem, and simultaneously create jobs and a positive reputation for the Cornwall area.

The community of the polluted ecosystem understood that they had been implicitly responsible for the degradation of their ecosystem through the industries that had been the backbone of their economy. Not only were they beginning to understand that they were responsible for the pollution and thus the clean-up process, they were beginning to recognize their *right* to viable information to help them with the remediation of their home. One of the driving forces behind the birth of the River Institute was the belief in the Cornwall community that they were entitled to reliable and accurate information about the state of their natural environment. How better to ensure the quality of testing and research than to carry it out oneself? By advocating for the existence of a river research institute and by lobbying to have it located on the banks of the St. Lawrence in Cornwall, the local community made huge strides towards taking control of, and responsibility for, the information that would shape its future. This passionate campaign focused on community empowerment impressed the Federal Government, and helped lead to the formation of the St Lawrence River Institute of Environmental Sciences in Cornwall.

Rick Eamon states that through fostering a relationship with Henry Lickers, “I have certainly learned a great deal about stewardship of the environment through the way of life of the Mohawk community, which includes awareness that they have a responsibility for seven generations that follow them. Despite the fact that their natural way of life has been significantly impacted by the degradation of the St Lawrence ecosystem, the Mohawk community has made significant contributions to the ...

development of the St Lawrence River Institute of Environmental Sciences,” (Eamon, pers comm.).

These words are significant for a number of reasons. First of all, the source is notable: they are spoken by the President of the Chamber of Commerce. This suggests that Cornwall's business community had a vision for the area's economic future which was compatible with a goal of sustainable environmental practices. Also, and perhaps more importantly, it suggests that the *relatively new* inhabitants (the descendants of European settlers) of the area had considerable respect for the ethical frameworks and wisdom of the traditional caretakers of the land, the Mohawk. Further, it illustrates that the development of a River Institute would be a shared undertaking and would incorporate the ideals and values of all stakeholders. The community, as it looked to the future, was developing a philosophy of shared stewardship. They were incorporating the system of values, customs and practices of the First Nations people that had eroded in the wake of industrialization. The community realized that their own ethical framework needed to include environmental respect in order to achieve sustainability and they were beginning to shift their beliefs to include the *intrinsic value* of the natural world.

In order to ensure a holistic approach, the technical-advisory committee believed it was the people of this Area Of Concern – including residents, industry, local, provincial, state and federal governments, together with academics – who should make up the research institute’s members. It was to be a truly community developed research institute that would benefit the community on many levels. Thus, the motto “Communities for Rivers, Rivers for Communities,” emerges, (SLRIES, 2000).

### **What Next? Getting the Support Needed to Create The St Lawrence River Institute of Environmental Sciences (SLRIES)**

“The formation of the River Institute was fostered by a community desire to take a proactive approach to local and regional environmental distresses,” (SLRIES, 2000). The first step that the technical-advisory committee took after creating the vision of the River Institute was to approach Paul Fitzpatrick, the Manager of Economic Development for the City of Cornwall. At this time, in 1991, the City of Cornwall’s Economic Development Department was undertaking a major plan of community development. By

happenstance, one week prior to being approached by the technical-advisory committee about the possible creation of a river institute research facility, Mr. Fitzpatrick had been approached by Jeannine Roy-Poirier and Father Rudy Villeneuve, the two local directors of the Ottawa University Cornwall campus. Ms Roy-Poirier and Mr. Villeneuve wanted to extend the capabilities of the university's Cornwall campus and had approached Mr. Fitzpatrick with a proposal to expand post-secondary education opportunities in Cornwall. With this fresh in Mr. Fitzpatrick's mind, he advised the technical-advisory committee to generate a proposal to create a river research institute in association with the University of Ottawa's Cornwall campus. Thus, the technical-advisory committee submitted a proposal to the University of Ottawa, (Eamon, pers comm.).

The proposal outlined the concept of an Institute of Environmental Sciences in Cornwall which, they stated, was "born of the realization [that] in Canada, and perhaps anywhere in the world there is no place of learning, no place for research specifically dedicated to the aquatic ecosystems and environmental conditions of the world's large rivers," (Eamon, 1991). It then went on to outline the problems encountered when trying to utilize suitable research for the local Remedial Action Plans due to a lack of such analysis. It outlined the reasons that Cornwall made an ideal location for a river research institute – including the documentation of the history of the area, its industrial polluters and the disruption to the natural shoreline from the St Lawrence Seaway. Furthermore, as community members of the AOC, which was the proposed site of this Research Institute, they felt that it was their *right* to develop sound research methods to assist them in forming a viable remediation plan. In accordance with this, the proposal states,

"As David Suzuki once said, 'our bodies are over 70% water by weight and those water molecules in each of us were once part of the Amazon rainforest, the Serengeti Plains and the oceans of the world.' In this case a large percentage [of the water that makes up our bodies] would be from a section of river which has been identified as one of the most heavily contaminated areas in the Great Lakes Basin. The biological reality is that we are totally dependent upon an intact and pristine environment," (Ibid, 1991).

This is an important quote from the proposal for a research institute in Cornwall, and illustrates some ethical dilemmas faced by the communities within the environmentally degraded ecosystem. The community felt that a research facility would become a platform through which they could begin a proper remediation process for their

community; while, at the same time, the research information it would gain would be a viable platform through which they could advocate, by setting an example, for other communities to avoid the same mistakes that had been made in the St Lawrence ecosystem. They could provide hope towards a less polluted and consequently healthier future for the generations that would come after them; and they could advocate for industries and people to learn from their errors and thus, change their habits. Sound alternatives to past actions would be provided through thorough and holistic research methods.

The proposal then went on to outline the vision for what would be undertaken at the St Lawrence River Institute of Environmental Sciences (SLRIES), including a holistic research approach involving the diverse community needs dedicated to aquatic science systems through both pure and applied research methods. It would be a creator of a Scientific Association of the Large Rivers of the World and would stage international conferences aimed at examining the diverse aspects of the large rivers and addressing river remediation throughout the world. SLRIES would also have a multi-media facet and would study air emissions and atmospheric deposition as well as water.

It was proposed that SLRIES would be developed with links in industry; they believed that both during and after the clean-up, there would be a need for industries to have available research facilities to assist them in making appropriate clean-up decisions and to avoid repeating that which had occurred before. It would be a place of holistic learning, including studies in engineering, arts and social science, cultural studies as well as scientific education.

The proposal emphasized the need for a holistic approach to research. They understood the connection between the natural environment and the social sciences which were believed to be strongly linked. They knew that people were the creators of the environmental problems they faced. This was key in the advocacy approach that the creators of SLRIES undertook. They knew that common perceptions were that environmental issues were local affairs that could be resolved by relatively simple means: regulations to modify human behaviour or technological fixes to limit the discharge of pollutants. People sought solutions in the natural sciences, and social sciences were not recognized as integral to addressing environmental problems. The proposal noted that

many research scientists concentrated solely on their individual domains, rather than working in an interdisciplinary manner toward an understanding of the interactive processes that shape the natural world.

At this time, in the early nineties, however, shifts were beginning to be made, and people were beginning to see the need to recognize that environmental issues were regional, national, and global in scope. Thus, the proposal for SLRIES focused on the need to think in terms of sustainable development. The committee that submitted this proposal was forward thinking and knew that they must “take into account the needs of future as well as present inhabitants of the earth,” (Eamon, 1995). In line with this, the empowered group recognized the interrelated nature of all elements within the environment, including human beings, stating that “none of us can claim to be separate from the environment. We all form a common ecosystem consisting of nature and the human interaction with it. As our Mohawk partners have taught us, ‘everything is connected to everything,’” (Ibid, 1995).

The committee recognized that a river research institute that took a truly holistic approach to the natural environment and included factors such as the economy, behavioural sciences, environmental ethics and environmental law would improve understanding of the natural world, and would ultimately lead to a change in the development of public policy. This group of informed and empowered citizens had found a platform through which they could bring about a paradigm shift in order to advocate for changes in environmental policies and thus create effective solutions.

Through the education element that SLRIES would offer, this knowledge would be passed on to future generations. Rick Eamon states, “Our Mohawk partners best describe the significance of education with the phrase “knowledge is powerful, but only when it is shared,” (Ibid, 1995).

In line with this, they also noted that they “must move beyond the react-and-cure approach – the old method of seeking remedial action to repair environmental damage – to an approach that anticipates and prevents environmental problems from occurring in the first place,” (Ibid, 1995). Thus, the advocates for the creation of SLRIES were framing their stance on their own terms, noting the need to initiate a paradigm shift in the way their community – and societies as a whole – thought about environmental

degradation: they were no longer taking a reactive, *remediation* approach, but instead a proactive, *prevention* approach.

### **Events in the Successful Creation of the St Lawrence River Institute of Environmental Sciences**

Following the proposal, the next step was to establish a working group or ‘steering committee’ that would determine the basis upon which further involvement might be developed. This committee included the technical-advisory committee of the Cornwall RAP, members of the Massena, NY RAP, the University of Ottawa Faculty members, the Cornwall mayor, the local Member of Provincial Parliament and Member of Federal Parliament as well as scientific personnel from some of the local industries.

Their main goal was to establish themselves as a viable and responsible community group, advocating for a sound and necessary cause. According to Rick Eamon they had to “knock on the right doors, and get those doors opened,” (Eamon, pers comm.). The alliances and partnerships formed with the local, respected government officials and faculty members of Ottawa University aided in the establishment of SLRIES’ reputation from the outset. The Rector and Vice-Rector from the University of Ottawa came to meet with the SLRIES steering committee, and members of the committee travelled to Ottawa and Toronto to meet with government officials to seek support.

The committee realized that it had to demonstrate its understanding of the environmental degradation in Cornwall and to work within the frameworks of society in order to be respected; and to be prepared to provide a viable step towards a solution. They became experts in framing the need for a river research institute, and in turn, gained legitimacy.

The steering committee ensured local cognizance by doing interviews on local television stations and in the local press. Interest and awareness was raised and resulted in further support.

Next, the University of Ottawa, along with the SLRIES’ steering committee developed a funding proposal through the Canadian Government’s “The Green Plan,” a Government contribution to further national cooperative efforts to protect and enhance

Canada's water resources, (Environment Canada, 2000). The proposal was for the establishment of a program for "Ecosystem Recovery on the St. Lawrence," (Eamon, 1991) which was later coined the 'Eco-Recovery Program.' In the proposal, Rick Eamon is quoted as reinforcing that he "believe[d] it [was] essential that our [proposal] emphasizes that it is not only a university research project, but that it is a community driven project and that the research itself and the results of the research will at the very least enhance the community and hopefully go a long way towards improving the quality of the ecosystem and bringing Cornwall closer to sustainability," (Crabbé, 1992). This shows the determination to involve all parts of the community which they saw as integral in ensuring the sustainability of not only the St Lawrence River Institute of Environmental Sciences (SLRIES), but of the ecosystem community as a whole.

In 1992, the Eco-Recovery program proposal was approved – a three-year, \$2.3 million grant to study pollution in the Cornwall section of the St. Lawrence River basin, (Eamon, pers comm.). It was the first program of its kind to include experts (biologists, ecologists, chemists, sociologists, geologists, and economists) from so many disciplines and communities on all sides of the Canada-US-Akwesasne borders. All of these experts met at SLRIES where the transdisciplinary group worked together in an effort to clean up the river. National coverage from CBC (Canadian Broadcasting Company) was provided through interviews with SLRIES members during the Eco-Recovery Program and aided in the establishment of SLRIES' reputation.

Aside from the research scientists that were working on the Eco-Recovery plan, SLRIES set up a board of directors that worked countless hours to ensure the development and establishment of a sustainable institute. At this time, SLRIES was operating out of a donated section of an old cotton mill along the river's shore in Cornwall, and in sections of the Cornwall campus of Ottawa University at St Lawrence College. The renovated cotton mill space was donated by the Kaneb family, who were a very successful family from Cornwall that operated a number of businesses in the community. Tom Kaneb was a member of the board of SLRIES and through his generous donations the institute became a reality. Mr Kaneb donated office space as well as significant corporate donations to fund the implementation of a Natural Sciences and Engineering Research Council of Canada (NERSC) chair in Ecotoxicology at SLRIES,

and the capital infrastructure that SLRIES needed to get underway. Other privately owned corporations within the community donated significant in-kind and cash donations to the institute, (Eamon, pers comm.). This signifies the community conscience that they held. The community was becoming aware of the challenges they faced, and working together to find a solution.

Through the Eco-Recovery Program and the Cornwall and Massena RAPs, lasting alliances and bonds were formed between members of Cornwall, Akwesasne, and Massena, NY – who were all major stakeholders in the creation of SLRIES. With these partnerships, came additional support and research at SLRIES in association with educational institutes from the US. At the same time that SLRIES was getting established, across the border in Massena, members of the NY RAP were developing the St Lawrence Aquarium and Ecological Centre. This was a centre to provide environmental education and programming and had the hopes of doing research as well. The partnerships founded through the RAPs and SLRIES helped all parties in furthering their own goals, and in the process advancing all involved – they came to understand the need to work together to sustain the ecosystem in which they lived.

The next step in the establishment of SLRIES was the development and hosting of an international conference, which would attract environmental scientists and professionals from around the world. These annual conferences would not only further the research at the institute, but would establish partnerships with scientists from around the world; provide some funding for SLRIES; and would develop the reputation of SLRIES and give it recognition as a leading research institute. At the first conference in 1993, *Sharing Knowledge, Linking Sciences; An International Conference on the St Lawrence Ecosystem*, Environment Canada assisted in bringing different researchers to the conference by designating it a platform through which Remedial Action Plans' implementations could be discussed, (Eamon, pers comm.). Furthermore, the national media covered the St Lawrence River International Conference, and the RAP research progress. Prime Minister Jean Chrétien wrote a letter to SLRIES to be read at the first annual international conference. This honour enhanced the reputation and recognition that SLRIES and the conference were gaining, (Chrétien, 1993).

Between November of 1993 and April 1995, a main portion of the ‘incubation’ stage of the institute occurred. Sandra Lawn was the Empowerment Director for SLRIES and contributed significantly to its establishment. The board continued to advocate for funding and the Canadian Government’s Human Resources and Skills Development Canada (HRDC) provided SLRIES enough funding to hire a full-time scientist and executive director, Jeff Ridal, along with some other paid staff; the bulk of those working to make SLRIES a reality, however, were the determined volunteers, (Eamon, pers comm.).

The next stage of SLRIES’ development occurred during the period of April 1995 through April 1997. During this period the board was successful in ensuring support of Environment Canada, Industry Canada and the University of Ottawa. Funding assistance was provided to retain SLRIES’ Research Director, a research scientist, and a Community Resource Coordinator. Funding was received from Science Culture Canada to provide educational programs to elementary students in Eastern Ontario that focused on the science of large rivers. Environment Canada also provided funding to undertake research on taste and odour in the Upper St. Lawrence River, and an agreement was reached with the Raisin River Conservation Authority to operate at the Cooper Marsh Interpretive Center, (Ibid, 2006).

In 1997 the NSERC Chair in Ecotoxicology was approved and provided another researcher and support staff at the institute. The funding for this Chair was about \$300,000 per year funded equally by the federal government and industry. From 1997 to 2000 SLRIES operated out of the former La Cite College, in Cornwall. That space was rented and donations of lab equipment were received from Environment Canada and Domtar. After this college was sold to the French Public School Board, SLRIES had to move out, and temporary space was rented from St Lawrence College in Cornwall until a permanent research facility was constructed on the Windmill Point site in 2003. Today, research and education is undertaken at its permanent home on Windmill Point where SLRIES has a strong partnership with St Lawrence College and delivers educational programs for the college’s Environmental Technology program, (Ibid, 2006).

### **SLRIES a Success story**

“The formation of the River Institute was fostered by a community desire to take a proactive approach to local and regional environmental distresses,” (SLRIES, 2000). The support of the stakeholders (citizens, business, industry and governments) resulted in the first ever community built research institute of its kind. From its conception through a vision for a holistic research facility to assist in the remediation plans for the area, dedicated volunteers worked many long hours for many years to establish SLRIES, and it is still evolving to this day. SLRIES is a result of an empowered and informed community that shifted from relying on a government implemented remediation program to creating a community driven research facility that would improve the future of their community and the ecosystem in which they lived. The community advocated on the belief that they had a *right* to knowledge and understanding of how to remediate their damaged ecosystem and to assist in finding viable alternatives to ensure that communities worldwide would not only be able to clean-up past mistakes, but ensure that these mistakes did not happen again.

Thus, the research facility became a platform through which they could begin a proper remediation process for their community; while, at the same time, the research information it would gain would be a viable platform through which they could advocate, by setting an example, for other communities to avoid the same mistakes that had taken place in the St Lawrence ecosystem. A paradigm shift had taken place for the way that communities saw the natural world, the way their community – and societies as a whole – thought about environmental degradation: they were no longer taking a reactive, *remediation* approach, but instead a proactive, *prevention* approach.

Today, SLRIES is an “incorporated, not-for-profit, and charitable organization based in Cornwall that is dedicated to environmental research and education of large river ecosystems,” (SLRIES, 2000). SLRIES’ approach is best described by its motto: “Communities for Rivers, Rivers for Communities.” The River Institute strives to serve as a common ground where communities (environmental, industrial, scientific, educational, Canadian, Mohawk, and American) can “work toward the common goal of responsibility to the great river for the benefit of the communities that live along, and in

it,”(Ibid, 2000) SLRIES’ successes serve as examples for large rivers ecosystems worldwide.

SLRIES celebrated its tenth anniversary in 2004 and is hosting its thirteenth annual St Lawrence River Ecosystem International Conference in May, 2006. SLRIES has also taken a lead role in the formation of the St Lawrence River Restoration Council to implement the St Lawrence River Remedial Action Plan, (Ibid, 2000).

The success of SLRIES is evident in the passionate words of Jeff Ridal, the Executive Director of SLRIES: “We will continue to be anchored by the undeniable fact that the sustainability of large rivers like the St. Lawrence is the only option...it is a fundamental requirement,” (Ridal, 2004).

### **What made SLRIES a success?**

The community of the St Lawrence ecosystem was eroding as a result of pollution. There was a loss of traditional practices and values on the First Nations reservation of Akwesasne; in all areas unemployment was increasing due to industries leaving; health issues were becoming evident and wildlife populations were either negatively affected, declining, or becoming extinct; lawlessness and disparity were on the rise. In addition to all of this, the community was named one of the worst polluted parts of Canada. It was a crucial time – a community in the crux of a conundrum. Instead of giving up, the community came together and sought a viable solution. They became informed and empowered and advocated towards a more sustainable future.

The years of dedication, perseverance and hard work of community members, led by the vision of Cornwall’s Remedial Action Plan’s technical-advisory committee, resulted in the success of SLRIES. Members met with local, provincial and federal government officials to acquire support. They succeeded in obtaining community and national support in the form of government grants and funding. The ‘steering committee’ included members from all facets of the community to ensure community involvement. The local and national media played a major role in obtaining support; this media coverage led to SLRIES maintaining its viable reputation. The community was involved and consequently informed, resulting in unwavering support for SLRIES.

A pivotal progression in the success of SLRIES was the realization by the technical-advisory committee of the Cornwall Remedial Action Plan that clean-up of the St Lawrence River ecosystem was not only part of the trans-national community, but part of our larger planet as a whole. They began to advocate for what they believed was their *right*: the necessary means to a sustainable end – the St Lawrence River Institute of Environmental Sciences.

The goal of sustainability is an ethical choice. It represents the opportunity to place longer term interests ahead of those in the short term. In this case, however, the advocates for SLRIES framed their advocacy as one where short term and long term interests were *not* in ethical conflict. Rather, sustainability was needed – a pristine and habitable environment – in order to provide a future for the area both tomorrow and for the generations to come. SLRIES, in the short-term, provided jobs and prestige for the community; also, it provides a future for the area for the long-term, benefiting all members of the ecosystem in perpetuity. The advocates intelligently framed their advocacy as if there was only *one right path* – that being the ethical one.

Most citizens of a nation assume that there is a “government program in place to ‘look after things;’ however, environmental responsibility is spread over many ministries, departments and jurisdictions. Consequently, resolving issues of environmental degradation in a river such as the St Lawrence requires the consensus of industry, governments, NGOs and concerned citizens,” (SLRIES, 2000). The St Lawrence River Institute of Environmental Sciences provides an avenue for research and discussion in open forums – a holistic, transdisciplinary and transnational approach – where empowered communities work together for a resolution.

Much can be learned through the traditions of the Mohawk community’s belief that we have a responsibility for the seven generations that follow us. This awareness and consequential paradigm shift within the Cornwall community, and the members of the St Lawrence River ecosystem as a whole, resulted in forward-thinking and the establishment of a reputable and admirable research institute. Rather than resorting to pessimism or estrangement of the community with the news that it ranked as one of the worst polluted areas in all of Canada, they joined together and have made steps toward making their home a safer and healthier place to live.

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