



**50 Years of Conservation
1968 - 2018**

**LOWER TRENT
CONSERVATION**

50 Years of Conservation 1968 - 2018

Lower Trent Conservation



Lower Trent Conservation celebrated its 50th anniversary in 2018. To commemorate this golden occasion, the Conservation Authority created a '50 in 50' historical blog series – 50 articles published online throughout the year, highlighting some of the key achievements, milestones, and events of the past 50 years.

This book is a collection of these short stories and tells the tale of Lower Trent Conservation from 1968 to 2018.

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Written by: Lower Trent Conservation staff

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1969-Conservation Group Tours Domtar Newsprint Seated: W.T. Lawson-Trenton; Claude Trumble-Stirling; C.G. MacDonald-Murray Twp. Standing: Edward Colden-Rawdon Twp; Paul Tripp-Trenton; Arthur Wartman-Warkworth; W.R. Menzies-Trenton

Canadian Legion Branch 110 Lays Foundation for Local Conservation Authority (1968)

Our relationship with the Trent River stretches back thousands of years – indigenous people used the river as an ancient canoe highway, fur traders and lumberjacks relied on it as a commercial transportation corridor, and today recreational boaters travel the river daily.

The realization that the natural resources along the Trent River were not inexhaustible unless managed and protected began to take hold in the late 1950s and early 1960s. With the passing of the *Conservation Authorities Act* in 1946, the mechanism for the protection and management of local natural resources was put in place. The Act allowed for the “carrying out of conservation work on the basis of a river valley under the supervision of the municipalities within that valley”.

As early as 1955, discussions were being held regarding the possibility of forming a Conservation Authority for the entire Trent River watershed. Led by the Royal Canadian Legion, Branch 110 of Trenton, a conservation committee began the job of establishing a Conservation Authority to deal with concerns with industrial and sewage waste, weed control and garbage dumping along the Trent River. Unfortunately, due to the watershed size (14,000 sq. km. stretching from Algonquin Provincial Park to the Bay of Quinte), it was deemed too large to form one conservation authority for the entire Trent River watershed.

Through the 1960s, the Legion’s Conservation Committee turned its efforts towards forming a watershed-based organization focused on the Trent River downstream of Rice Lake. It took almost ten years of hard work and dedication by this group of conservation-minded individuals to make progress.

Finally, on April 30, 1968 with over one hundred people in attendance, and after a lively discussion, the majority of the municipalities voted in favour of the establishment of Lower Trent Conservation. An order-in-Council from the Province of Ontario for the formation of the Conservation Authority was received on May 16, 1968. Its watershed management area was determined to include the watersheds of the “Trent River, its tributaries Rawdon, Squire, Percy, Salt, Cold and Mayhew Creeks, and such streams as Brighton, Colborne and Shelter Valley Creeks” that flow into Lake Ontario.

Today, 36 Conservation Authorities provide watershed management programs and services across the Province of Ontario.

Murray Township Man Again Heads Authority

BRIGHTON — The Lower Trent Region Conservation Authority held its annual meeting at the Agriculture Centre Brighton Tuesday night.

Anthony Jennings, Toronto civil servant conducted the election of officers which saw the return of C. G. MacDonald, Murray Township, as chairman.

A. U. Wartman, Warkworth, was elected vice chairman. W. Lawson was confirmed in the position of secretary. The chairman read a letter stating that Pete McGillan, Rosemeath, Paul Heissler, Frankford and Donald Rodgers, Stirling, had been appointed by order in council to the authority, and invited them to take seats at the table.

John Wuite, Belleville, was introduced as the new resources manager. His duties also involve being the manager for the Moira Conservation Authority.

W. Carter reported that his committee would sponsor a prize for a Boy Scout project such as nesting houses for wood duck.

Mr. McGillan suggested that the area be explored to find a suitable place for a bird sanctuary. J. Bush, chairman of the education and information committee displayed a crest to be used by the authority on all its stationery, signs, vehicles, etc. The crest was adopted. He also reported that work on the Brochure is nearly completed.

At this point the authority recessed to meet in camera in another room. On their return Mr. McGillan asked that the Department of Lands and Forests place Coho salmon in the waters in this area.

Mr. Wartman, Warkworth, was asked to draw up rules of procedure for the guidance of the authority and to present them at the next meeting.

The members of the authority are, with the exception of the three appointed by order in council, all representatives of

their local municipal councils.

They are S. J. McMillan, Alnwick; M. J. Harvey, Brighton Township; H. R. Sharpe, Brighton; W. Carter, Campbellford; J. A. McComb, Cramahe; M. Dafoe, Frankford; R. Sills, Huntingdon; C. G. MacDonald, Murray; A. U. Wartman, Warkworth; R. E. Short, Rawdon; J. M. Bush, Sidney; C. Trumble, Stirling; Wilson, Trenton, Paul Tripp, Trenton; R. S. Blackwood, Colborne; E. Roddy, Haldimand; and K. Parr, Seymour.



1968

Board of Directors

Township of Alnwick

S.J. Flex McMillan

Town of Brighton

H. R. Sharp

Township of Brighton

Maurice Harvey

Town of Campbellford

David Wilson

Village of Colborne

R.S. Blackwood

Township of Cramahe

J.A. McComb

Village of Frankford

M. Dafoe

Township of Haldimand

Edward Roddy

Village of Hastings

unknown

Township of Huntingdon

Russell Sills

Township of Murray

C.G. Macdonald (Chair)

Township of Percy

Arthur Wartman

Township of Rawdon

R.E. Shortt

Township of Seymour

unknown

Township of Sidney

Jack M. Bush

Village of Stirling

Claude Trumble

Town of Trenton

Paul Tripp

R.E. Whitley

Provincial

Representatives

W.R. (Bill) Menzies

Paul Heissler

Pete McGillan

2018 Board of Directors

Township of Alnwick/Haldimand

Ray Benns

Municipality of Brighton

Mary Tadman

John Martinello

Municipality of Centre Hastings

Eric Sandford (Vice-Chair)

Township of Cramahe

Don Clark

City of Quinte West

Jim Alyea (Chair)

Karen Sharpe

Township of Stirling-Rawdon

Bob Mullin

Municipality of Trent Hills

Bill Thompson

Rick English

On Board for Conservation (1968)

Since the passing of the *Conservation Authorities Act* in 1946, the conservation movement in Ontario has been a movement by the people and for the people. Local initiative is the strength and success of every conservation authority. Without this local motivation, a conservation authority cannot be formed. The community must first recognize the need for environmental action and request the provincial government to form a conservation authority. In making the request, local municipalities must be willing to contribute financially to the works of the authority and face the responsibility of directing it.

For the people living within the Lower Trent watershed region, the programs and services of Lower Trent Conservation are focused on the Trent River valley, the watersheds of eight main tributaries, and areas that flow directly into Lake Ontario and the Bay of Quinte.

In 1968, the watershed included all or portions of 17 municipalities. Each municipality appointed representatives to the Board of Directors. As the provincial government also shared the financial responsibility of operating the Conservation Authority, three provincial representatives were also appointed to the Board.

The role of the Board is to oversee the annual budget and conservation activities of the organization. The Board also establishes policies that govern the operation of the Conservation Authority.

From 1968 to 1997, the Board consisted of 21 members. With municipal amalgamations during the late 1990s and the removal of provincial representation in 1996, today's Board of Directors is comprised of 10 members representing 7 municipalities. Large municipalities with a population over 10,000 have two seats on the Board.



Board of Directors (2018)



Sod turning ceremony for new office on Front Street, Trenton (July 6, 1978)



Office at 441 Front Street, Trenton (1978 - 2004)



Office at 714 Murray Street, Quinte West (2004 - present)

Lower Trent Conservation Headquarters – Changes Through the Years (1968)

For an organization that has grown from one employee in 1970 to 22 employees in 2018, it makes sense that the location from where the conservation program was directed would need to grow and adapt through the years.

In 1968, Lower Trent Conservation's first and only employee, Bill Lawson, worked out of the back of his house in Trenton where he kept financial books for a number of small businesses. In 1971, the Conservation Authority moved to Campbellford, as it needed more space for both files and employees. This office "left much to be desired because of the intense heat in the summer" and the rapidly growing Conservation Authority quickly outgrew the space. So, in 1972, the three employees took up residence in the back of the municipal building in Frankford.

By the mid 1970s, the conservation staff now included nine full time staff with an additional 65 people working out of the office in the summer months. After taking some time to consider a location at Proctor Park Conservation Area in Brighton, it was decided to build a new office along the Trent River waterfront in Trenton, close to financial and other business services. Described as an 'ultra-modern building boasting many interesting and modern features of construction', the office was officially opened in November 1978. The building included a reception area, five offices, an open space drafting area, and boardroom. By this time, the staff team consisted of 11 people.

In 1987, the Conservation Authority built a new workshop on Wall Street in Trenton, just up the street, to house the Conservation Lands staff. Prior to that, the field operations were based out of the old mill at King's Mill Conservation Area.

After 26 years at 441 Front Street in Trenton, Lower Trent Conservation moved its administrative office to the former Murray Ward office located between Trenton and Wooler just off County Road 40 (Wooler Road). With 14 staff and 26 years' worth of files, this latest office location at 714 Murray Street offered a more spacious setting with much needed storage and archive space. We're still here and hopefully the office will serve us well for years to come.

Building a Land Base of Our Natural Heritage (1969)

The conservation movement in Ontario began in the 1940s in response to droughts, floods and erosion, and resulted in the passing of the *Conservation Authorities Act* in 1946. In 1954, Hurricane Hazel hit southern Ontario, resulting in 81 deaths and causing \$100 million in damages. That same year, a Federal Commission reviewing the aftermath of the flood confirmed the merit of protecting flood plain lands from future development, while still permitting their use for recreational purposes. The revised *Conservation Authorities Act* of 1954 permitted any lands (flood plains, wetlands, headwaters, forests) to be purchased for conservation purposes. Public use of these lands for outdoor recreation was an integral part of the development and management directives in the legislation.

During the early years of Lower Trent Conservation, the founders moved quickly to purchase a number of environmentally significant properties. Land acquisition was a reason to exist; it demonstrated to the people of the watershed that the newly established Conservation Authority was serious about the business of conservation.

In 1969, a long, narrow strip of shoreline along the Trent River in the hamlet of Glen Miller was leased from the Federal Department of Indian Affairs and Northern Development to create the first Conservation Area. Due to its small size, it was not considered that Glen Miller Conservation Area would attract people from great distances as would Provincial Parks in the area, but it would provide direct access to the Trent River.

Over the next 10 years, 11 additional properties were acquired to fulfill conservation objectives such as flood and erosion protection, natural resource protection, or cultural heritage preservation. Today, Lower Trent Conservation owns 17 properties totaling over 1,500 hectares (3,750 acres). These forests, valleys, shorelands, meadows, and wetlands are part of a regional system of protected landscapes that depict the natural diversity of the watershed region.

Lower Trent Conservation's properties also offer a wide range of outdoor recreation opportunities ranging from hiking, mountain biking, fishing, cross-country skiing, picnicking, canoeing, and more to residents and

visitors to the area. Ranging in size from small parkettes like Glen Miller Conservation Area to over 650 hectares, all are open to the public from sunrise to sunset. There are no admission fees to any of the properties although donation boxes are located at several locations to assist us with ongoing maintenance requirements.

Below is a list of the Conservation Lands owned and managed by Lower Trent Conservation including initial acquisition dates as well as subsequent property additions:

- Glen Miller Conservation Area – 1969, 1984
- Proctor Park Conservation Area - 1970
- King’s Mill Conservation Area – 1970, 2001
- Warkworth Conservation Area – 1971, 1972, 1981
- Sager Conservation Area - 1971
- Goodrich-Loomis Conservation Area – 1971, 1973, 1996
- Keating-Hoards Natural Habitat Area – 1971, 1975, 1976
- Trenton Greenbelt Conservation Area – 1972-1976, 1978-1982
- Seymour Conservation Area - 1973
- Haldimand Conservation Area – 1974, 1980
- Trenton Escarpment Natural Habitat Area - 1977
- Barnum House Creek Natural Habitat Area – 1978, 1980
- Murray Marsh Natural Habitat Area – 1986, 1987, 1989
- Alderville Woods Natural Habitat Area - 2001
- Douglas Spring Natural Habitat Area - 2002
- Bleasdel Boulder Conservation Area - 2005
- Burnley Creek Natural Habitat Area - 2006



First Conservation Area



**New Picnic Shelter for
Glen Miller Conservation Area**



Department of Energy and Resources Management

lower trent region conservation report volume I 1970

**An early blueprint for
conservation in the Lower
Trent Watershed Region**

Conservation Report 2018

The First 50 Years and Beyond



LOWER TRENT
CONSERVATION

**New Conservation Report
released in celebration of
Lower Trent Conservation's
50th anniversary**

An Early Blueprint for Local Conservation (1970)

“While most Conservation Authorities were created because of the urgent necessity to correct flooding, all were aware of the necessity of ferrying out supplementary measures such as improved methods of land use, reforestation, proper woodlot management, prevention of pollution, underground water supplies, wildlife studies and recreation.” -- Report to the Ontario Legislature from the Select Committee on Conservation – 1950

At the first meeting of the Conservation Authority in 1968, it was agreed to request the provincial Minister of Energy and Resources Management to undertake a study to assess the conservation problems and opportunities within the watershed. The study was conducted in the summer of 1969 at no cost to the Conservation Authority.

Extensive field studies were conducted to expand and fill gaps in existing information. The studies covered conservation aspects of land, forest, water, wildlife, recreation, and community planning. Survey crews consisted of university students in these subjects and worked under the direction of the experienced section heads of the Conservation Authorities Branch, Department of Energy and Resources Management.

A year later, the ‘1970 Conservation Report’ was released, providing a blueprint for the organization during the early years. The Report included three volumes: History; Volume I – Conservation Report and Plan; Volume II – Appendix.

The Conservation Report served as a guide to the Conservation Authority in formulating and carrying out a program of conservation in its area of jurisdiction. Some of the priorities outlined in the Conservation Report included plans for:

- improvements to creeks, mill ponds, lakes, marshes, and wildlife areas
- provision of public picnic, fishing, and hunting areas
- measures for safeguarding the vital outdoor areas against haphazard development which might destroy the environment.

In 2018, Lower Trent Conservation released a new Conservation Report to mark its 50th anniversary. It summarizes background information about the Lower Trent watershed region and identifies current issues, as well as additional information needed to better protect and manage our watersheds.



Proctor House (1972)



Conservation Area entrance off Young Street (2017)



Proctor House Museum today

Proctor House – A Step Back in Time (1970)

Proctor Park Conservation Area was donated to Lower Trent Conservation in 1970 by the heirs of the Proctor Estate. Josiah Proctor and his family came to Canada from Vermont in the 1790s as Loyalists fleeing from the United States. In addition to a mature woodland and babbling creek, the Proctor homestead also stood on the property. The family had many business enterprises including shipping, sawmills, grist mills, farmland, and retail stores.

John Edward Proctor, the grandson of Josiah Proctor, built the house that is now known as a prominent historic feature – Proctor House Museum – in 1867. The house, originally known as Millbank, is of the Italianate style, representative of architectural design of that era.

When the property, along with the house, was donated to Lower Trent Conservation in 1970, there was much discussion within the community as to the future of the house as it required considerable repairs. At one time, it was being considered as a possible office location for the Conservation Authority. There was also discussion about tearing the building down, but the community pushed back.

As members of the community realized the importance of preserving the house as a historical building, the Save Our Heritage Organization (SOHO) was formed. The house, along with an acre of land, was leased to the group for a nominal fee. Proctor House Museum was officially opened in 1976, depicting the period of the 1860s when the Proctors were a major influence in the community. SOHO continues to operate the museum today along with the Brighton Barn Theatre, also located within the Conservation Area.

Today, Proctor Park Conservation Area continues to serve as a memorial to the prominent Proctor family. In addition to Proctor House, the property bears some of the remains of John Edward's ventures – old apple orchards and farm fields form part of its landscape.

Provincial Water Quality Monitoring Network - Monitoring Local Waterways (1970s)

Ontario is rich in water resources. Our province borders four of the five Great Lakes, and we have more than a quarter of a million lakes, rivers, and streams. These water resources are the cornerstone of the quality of life that we enjoy in Ontario. Our health, the health of the environment, and our economic prosperity depend on them. They supply our drinking water and are home to many plant and animal communities. They also play a vital role in industry, agriculture, and recreation.

Monitoring our streams and rivers is crucial in order to assess the impact of human activities on surface water quality. Initiated in 1964, the Ontario government established the Provincial Water Quality Monitoring Network to measure water quality in rivers and streams across the Province. Today, there are over 400 locations monitored in partnership with Ontario's Conservation Authorities, participating municipalities, and provincial parks.

Within the Lower Trent watershed region, historic water quality records for several watercourses date back to 1964. Most likely, this early water monitoring was conducted out of growing concern about the state of local waterways through the 1950s and 60s. Following its formation in 1968, Lower Trent Conservation joined the provincial monitoring network in the early 1970s.

Water samples are collected on a monthly basis from March through October. The samples are sent to the Ministry of the Environment and Climate Change laboratory where they are analyzed for general chemistry.

Unfortunately, Lower Trent Conservation was forced to drop the monitoring program in 1999 following a dramatic cut in funding from the provincial government, but was able to rejoin the program in 2002. Many sampling locations have changed over the years and have primarily focused on the Trent River. Over the past decade or so, Lower Trent Conservation has collected water samples at nine locations including the Trent River (3), Cold Creek (2), Mayhew Creek (1), Trout Creek (1), Salt Creek (1), and Percy/Burnley/Mill Creek (1).

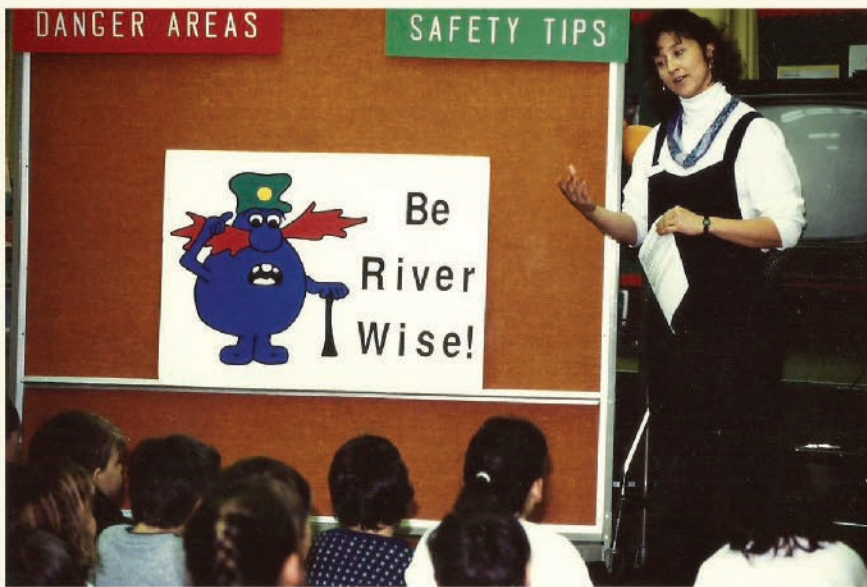
Starting in 2018, a new surge of funds and energy will be directed at the monitoring program. Nine new sampling sites for Colborne Creek, Butler Creek, Barnum House Creek, Shelter Valley Creek, Squires Creek, Rawdon Creek, Meyer's Creek, Burnley (Mill) Creek, and Rice Lake tributaries will be added to allow for a more comprehensive monitoring of watercourses across the entire watershed. As well, testing for *E-coli* will be carried out in addition to general chemistry for all 18 locations. The additional data will allow the Conservation Authority to provide a full report on surface water quality in its future Watershed Report Cards, which are produced every 5 years to outline the state of surface water quality, along with forest and wetland resources.



Monitoring surface water quality in the Lower Trent watershed region



Water temperature sampling equipment and water quality sampling bottles



Spring Water Awareness Program (1990)



Stream study at Goodrich-Loomis Nature Camp (2003)

Youth Education

- Connecting Kids with Nature (1971)

The youth of today are tomorrow's environmental leaders. Lower Trent Conservation has long embraced the need to "educate, educate, educate" to help ensure the future health of our watershed and the planet.

As early as 1971, Lower Trent Conservation was providing educational programs to some local schools. By 1975, sugar bush tours and Arbor Day activities were being offered to school groups across the watershed region. In 1985, a Spring Water Awareness Program was launched, creating awareness of the dangers of spring water runoff.

Other youth programs over the years have included Goodrich-Loomis Nature Camp summer program, Tri-County Children's Water Festival, Caring for Our Watersheds™ contest, and Yellow Fish Road™ program. All are very different types of programs, but have the same goal: to promote a deeper appreciation of the natural world and an understanding of how each of our actions impact the health of the watershed.

From in-class presentations to streamside studies, Lower Trent Conservation has provided youth environmental education for close to 50 years, teaching thousands of children to value the earth and all living things, and learning that everything is connected to everything else.



Tasting maple syrup

Operation Cleansweep

40 Tons Of Litter Are Removed On Saturday



Col. Angus B. Duffy, (left), Communications Director for Operation Clean Sweep held on Saturday by the Lower Trent Region Con-

TRACING OPERATIONS

servation Authority, William Lawson, secretary for the Authority, are marking the progress of the operation with C. G. Macdonald (right)

Operations director. The base of Operation Clean Sweep was the Oak Hills Flying Club.

Photo by Ronald Gibson

Operation Cleansweep held on Saturday by the Lower Trent Region Conservation Authority cleared about 40 tons of material from the Trent River banks. It took in an area of about 50 miles. The operation was divided into 10 districts.

District One began at Hastings and extended to the bridge at the Trent River. District Two reached from the bridge at the Trent River to Healey Falls. District Three was from Healey Falls to Ranney Falls. District Four began at Ranney Falls and went to Bradley Bay. The first four were combined into two districts for 1971.

District Six reached from Bradley Bay to Glen Ross. District Seven began at Glen Ross, and reached to Lock Six at Frankford. Districts Eight and Nine were combined, to include the area from lock Six at Frankford to the mouth of the Trent River. District 10 began at the north shore of the Bay of Quinte to the eastern boundary at CFB Trenton and to the east entrance of the Murray Canal.

C. G. Macdonald, operations director for the Cleansweep, said the first year of the operation dealt with removing a great deal of heavy material that had been lying in the river for years. Thus it came up with a relatively high tonnage. He said this year, the clean up involved removing material that was bulky but light such as plastic bake boxes, cartons, tires and papers. For the same effort much less tonnage was achieved.

He said, "Compared with last year we had a much larger turn out of boats, trucks and people. There were 69 boats used in the operation along with 40 trucks and 275 people. There were three aeroplanes from the Oak Hills Flying Club, from where Operation Cleansweep was being co-ordinated. Assisting were 26 people from Bell Telephone in Scarboro and Westward Junior High School in Scarboro, with 16 army cadets from the Hastings and Prince Edward Regiment in

Belleville. CFB Trenton gave a large turnout and handled the east end of the Bay of Quinte.

There were representations from the Trenton council, Percy Township council and Murray Township council. Col. Angus B. Duffy was the communications director in the operation.

The Piston Pushers from Belleville led by Ian Reilly, president of the club, provided despatch riders. Gordon Wright co-ordinated operations from the United Counties, and Col. Duffy co-ordinated operations from the Quinte area. The Emergency Measures Organization and St. John Ambulance also took part in Operation Cleansweep.

The district captains of the operation were John Greaves, Riverside Park; Hugh Jenny, deputy at Riverside Park; Robert Turnbull, Fisherman's Paradise; William Carter, Canadian Legion, Campbellford; Christopher Newman, Meysburg; D. N. (Smokey) Nelson, German's Landing Park; Charles Morton, at his residence north of Frankford; William Menzies, Batawa Fire Hall; David Stewart, Batawa Fire Hall; and Arden Royce at the dock south of the Trenton Cold Storage.

The Highlands of Hastings Tourist Association, under George Ellsworth, manager, took part in the operation. Domtar supplied 30 men and one truck. Miller Brothers, Glen Miller provided a tractor fork lift and a flat bed trailer and truck. Cooper Lais donated a low bed truck and trailer as well as seven men and a three ton truck.

Mr. Macdonald said that the ambition of Cleansweep sponsors is to have one year when they succeed in collecting only 100 pounds of litter.

"If we reach this objective the operation will be considered a success for the first time," he said.

Mrs. Vivian Hansen, St. John Ambulance, Belleville, came out to help in the operation after only

Operation Cleansweep – Giving Nature a Helping Hand (1971)

An army of more than 300 volunteers, 40 trucks, and as many boats converged on the Trent River on June 14, 1971 and removed an estimated 40 tons of debris from the Trent River. Operation Cleansweep was “designed to restore the Trent waterways between Hastings and the mouth of the Trent River to natural beauty and bountiful marine life.” The project focused on the river shore, shallow waters, and public lands adjoining the river with the goal of removing as much litter and rubbish as possible in one day.

Since Operation Cleansweep, Lower Trent Conservation has continued to engage many community groups and individuals in various conservation projects. For example, thousands of trees have been planted over the years on Conservation Authority owned lands by Beavers, Cubs, and Scouts as part of their Trees for Canada program.

In 1998, Lower Trent Conservation launched a ‘Volunteers for Conservation’ program so that the time, energy, and talents put forth by volunteers could be formally acknowledged.

Since the program was initiated, over 1,610 adults and youth have contributed close to 8,240 hours in support of our conservation programs! Planting trees and wildflowers, monitoring trails, establishing shoreline buffers, or helping children learn more about nature are just a few examples of projects where people continue to give nature a helping hand.

**Volunteers
- young & old -
give nature a helping hand
(1992)**



Warkworth Dam - Official Opening (1972)



Warkworth Flood Damage
(March 1980)



Construction of Floodwall
(1982)

Warkworth Dam – Protecting a Village (1972)

The Warkworth dam was officially opened on September 13, 1972 with much pomp and ceremony before a crowd of 600. Located in the Village of Warkworth on Mill Creek, the reconstruction of the dam and spillway was the first water management project of the Conservation Authority.

It is believed that a dam was in operation on the site before 1840, providing a source of power for saw and grist mills. After installing a diesel motor to operate its mill, Warkworth Co-operative Services sold the land surrounding the mill pond to the Township of Percy (now part of the Municipality of Trent Hills) in 1967 who in turn donated the property to Lower Trent Conservation in 1971.

To ensure the dam could be safely maintained, a preliminary engineering and feasibility study was conducted on the dam for the municipality in 1966. The job of repairing and reconstructing the earth dam and concrete spillways was subsequently turned over to the newly formed Conservation Authority. Construction began in 1971 and was completed in 1972.

In the spring of 1980, the dam was overtopped and the Village of Warkworth experienced severe flooding. A concrete floodwall downstream of the dam was constructed in 1982 to help protect against future flooding. The floodwall expanded the conveyance capacity of the channel, reduced ice jamming, and removed 50 homes from the 100 year flood hazard.

Each fall, stoplogs are removed from the dam to help reduce ice buildup over the winter, and ice jamming and flooding in downstream areas of the Village during the spring runoff. Stoplogs are replaced in the spring once high springtime flows have passed.

John R. Rhodes, MPP and Parliamentary Assistant to the Minister of Natural Resources, provided the following comments at the opening:

“This official opening of the Warkworth Dam and Reservoir is a ceremony of great pride to the members of the Lower Trent Region Conservation Authority, as it is another first for that body. This opening today signifies the first of what the authority hopes will be many in the years to come.”

After formation in 1968, the authority progressed rapidly, with projects started on many fronts. A great deal of activity occurred in all of the authority’s five advisory boards. Today we witness the completion of one of these projects.”



Lower Trent Conservation summer students (2017)

Summer Experience (1972)

Hiring summer students is an annual tradition started in the early years of the Conservation Authority. While the number of students hired each summer has varied over the years, one thing has remained unchanged. Every summer, Lower Trent Conservation gets a breath of fresh air and new life – an influx of students bounding with energy and ideas. At the end of each summer, these young adults head back to school with hands-on experiences, enhanced skills, and a clearer understanding of the many aspects of watershed management.

Below is a snapshot of some of the projects carried out over the years, made possible through a myriad of federal and provincial employment programs:

- **1972** - Eight young people were hired through Project SWEEP (Students Working in an Environmental Enhancement Program) to work on properties at Glen Miller, King's Mill, and Proctor Park Conservation Areas.
- **1975** – Five university students were hired through Experience '75 to develop a flood warning system and complete a resource inventory of the Cold Creek watershed. An additional eight high school students were hired through Experience '75 to work with field staff on Conservation Authority properties.
- **1979** – Thirty-four young people worked on various conservation projects through Young Canada Works, Katimavik, and Experience '79.
- **1988** – Through SCOUR '88 (Students Cleaning Out Urban Rivers), 14,886 kilograms of garbage was removed from 201 kilometres of creeks and rivers.
- **1991** – Twelve young people were hired through the Environmental Youth Corps Program to assess Cold and Shelter Valley Creeks and implement various shoreline improvement projects.
- **2003** – Nine students were hired for work terms ranging from seven to 15 weeks to conduct field work on headwater streams, carry out conservation area maintenance, provide youth programming for the Goodrich-Loomis Nature Camp, and collect surface and groundwater data.
- **2017** – Six students were hired through Canada Summer Jobs and Summer Experience Program to assist with water monitoring programs, invasive species awareness, conservation area maintenance, land stewardship services, community events, and youth education.

Field survey starts on flood plain

By RICK HOBBS
Staff Reporter

TRENTON - Work is continuing on the floodplain mapping of the Trent River all the way from Rice Lake to Trenton.

Robert Messervey, resource manager for the Lower Trent Region Conservation Authority (LTRCA) said the consultant who is doing the mapping has completed the aerial photography and will soon start a field survey.

The cost of the project is \$133,000 but under a special federal-provincial flood damage reduction program 90 per cent of the money is coming from the two levels of government.

Money collected from the 10 benefitting municipalities is going to their assessment so Trenton is not paying for the cost.

Cryser and Latham, the consultants, have to map 61 miles of the river, Messervey said, and they should have the preliminary maps produced and given to the authority by the end of this year.

The ultimate aim of the program is to discourage development along the river in areas which are prone to flooding.

"If there is already some development there then the other aim is to prevent further development," Messervey said.

He said each year the government has to pay out vast sums of money to replace or repair homes damaged by flooding and by supplying the money the government hopes developments in flood-prone areas will be stopped.

So far the LTRCA is the only conservation authority in the area to apply for and use the funds to have this type of mapping produced, Messervey added.

Mapping Top Priority

Mr. Murray said hopefully the floodplain mapping would be completed on the entire Trent River from Rice Lake to Trenton as soon as possible. One of the most significant aspects of floodplain management is emergency flood planning, he said.

With the disappearance of the Emergency Measures Organization, there is no provincial body capable of coordinating a flood emergency response. Consequently, the responsibility has been placed on the municipalities.

Haldimand Township and Shelter Valley Creek, Haldimand Township.

Mr. Murray said hopefully the floodplain mapping would be completed on the entire Trent River from Rice Lake to Trenton as soon as possible. One of the most significant aspects of floodplain management is emergency flood planning, he said.

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NIS MURRAY
has changed
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Village asks conservation authority for flood mapping in Brighton Bay

Brighton Village Council has moved to ask the Lower Trent Region Conservation Authority to prepare flood plain maps of marsh areas in Brighton Bay.

Mike LaFortune, the village LTRCA representative outlined the financing for flood plain mapping at council's meeting February 24.

Seventy-five per cent of the cost, Mr. LaFortune said, would be borne by the provincial government. The village would pay 95 per cent of the remaining 25 per cent, with the LTRCA picking up the

balance. Mr. LaFortune estimated the village's cost would be about \$1,000.

Flood plain mapping is the first step towards council's gaining some control of development in marsh areas, Mr. LaFortune said. After the map is prepared, bylaws could be written which prohibit any alteration of the flood plain area, he went on.

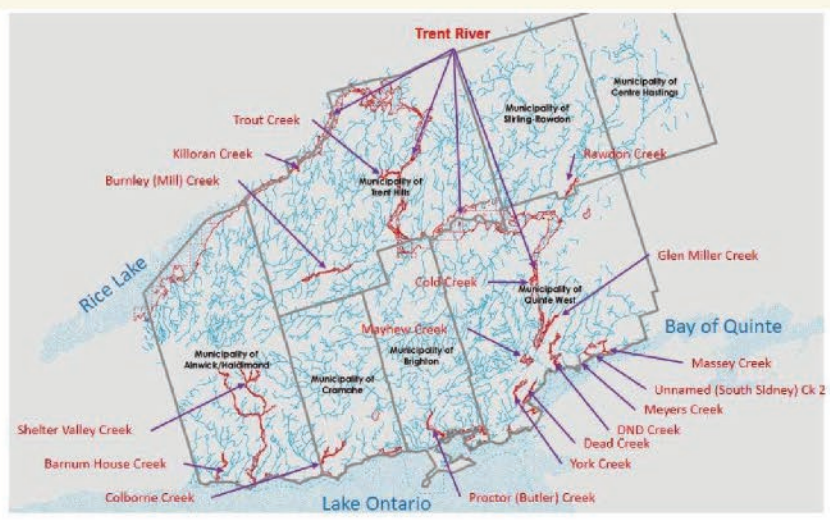
LTRCA would actually stand up to anyone with a development proposal.

"There's no point doing the mapping if they won't back it up," Mr. Dunk said.

But councillor Scotty Broughton disagreed, saying "If they don't back it up, then it's up to us to go out there and make them."

Mr. Broughton proposed a motion to request the LTRCA to undertake the project. The motion was seconded by councillor Ruby Johnson and carried unanimously.

Reeve Dorothy Brintnell and Deputy Reeve Bill Dunk expressed the feeling that the mapping might be an exercise in futility. They were sceptical that the



Mapped flood plains in Lower Trent watershed region

Flood plain mapping is a key tool used by Conservation Authority staff in delivering its environmental planning and flood plain regulations programs.

Flood Plain Mapping (1975)

In 1975, Lower Trent Conservation, along with other Conservation Authorities, took on the task of preparing emergency flood contingency plans and flood plain mapping. The first projects undertaken in the Lower Trent Conservation watershed were mapping for the Trent River flood plain in Trenton (from Highway 401 to the mouth of the river), and Mayhew and Rawdon Creeks, all in 1975.

Flood plains are low lying areas near watercourses that are naturally subject to flooding. Flood plain maps are produced using a science-based method of field surveys and computer models. Background data is gathered on land use, land cover, topography, soils, stream flow, and precipitation. Field surveys collect information on local infrastructure (culverts, bridges, etc.). Data is then entered into computer models to calculate stream flow and water levels. Review of technical work and modelling are completed to finalize the flood plain map. These maps establish protection areas to guide development projects to safe areas.

In 1975, the federal government initiated the Flood Damage Reduction Program (FDRP) to discourage future flood vulnerable development. The FDRP was carried out jointly with the provinces under cost sharing agreements; Ontario joined the Flood Damage Reduction Program in 1978. Municipalities, or Conservation Authorities where they existed, were partners with the federal and provincial governments in the FDRP mapping process and paid a portion of the cost.

A large flooding event in 1980 (over 2 inches of rain on frozen ground) resulted in severe flooding and ice damage in many communities across the watershed, prompting many watershed municipalities to initiate the FDRP funding opportunities. Once a flood risk area was mapped and designated, Lower Trent Conservation worked with local municipalities to keep development away from flood vulnerable areas.

Some local municipalities also opted to investigate whether a 2-zone flood plain concept could be applied in more developed areas of their municipalities. The 2-zone concept identifies a *floodway* and the *flood fringe*. The *floodway* refers to the portion of flood plain where there is a high threat to public safety and property damage from flooding. The *flood fringe* is the portion of the flood plain where development may be permitted, as long as certain flood protection standards and procedures are put in place.



**Memorial honouring
Frank E. Goodrich (1975)**



**Memorial of Thanks to Frank E.
Goodrich along the Esker Trail**



Trout fishing in Cold Creek



Cross-country running event



Dion snowshoe races



**Incredible trails for
hiking, biking and more!**

Goodrich-Loomis Conservation Area – In the Heart of the Northumberland Hills (1975)

A Wildlife Sanctuary was officially opened in June of 1975 with the unveiling of a cairn located on a clearing in the trees on property known today as Goodrich-Loomis Conservation Area. The stone cairn and plaque were dedicated in memory of Frank E. Goodrich.

Frank Goodrich was a very tall, quiet man who had a great attachment to the land. He was a farmer and a woodsman. He also had a vision for Cold Creek, which ran through his property, as being the best fishing spot in the area. He hauled trout fingerlings in milk cans from a hatchery near Toronto and fed them ground liver every morning. Marjorie Morgan, his daughter, recently stated in a local newspaper article that “their ancestors are still in that creek.” Today, Cold Creek remains a popular spot for fishing. After his death in 1969, 145 acres were sold to Lower Trent Conservation with the understanding the property would be named to perpetuate the memory of the late Frank E. Goodrich.

An adjacent parcel of land was purchased 2 years after the Goodrich property in 1973. Brothers Ray and Allen Loomis farmed the land, raising horses, chickens, pigs and cattle and had an orchard, vegetable garden, and grew raspberries and strawberries. When the property was sold to the Conservation Authority, Ray Loomis was given a lifetime lease to his home.

Nestled in the scenic, rolling hills of Northumberland County, Goodrich-Loomis Conservation Area offers some of the most scenic natural beauty found in the Quinte area. With 12 kilometres of trails, it is a great place to take a hike, mountain bike, snowshoe, or cross-country ski.

In addition to boasting one of eastern Ontario's finest trout streams, the 179 hectare (441 acre) parcel of land supports a wide variety of ecological communities: remnant prairie; oak savannah; provincially significant wetland; and mature mixed forest. There is also an established bluebird population.

At the unveiling of the Goodrich cairn in 1975, it was acknowledged that “the area, which abounds in wildlife, fish, and trees, would serve as an excellent retreat for those seeking outdoor recreation activities.” A statement that rings very true almost 50 years later!

Reforestation (1976)

You wouldn't guess it today, but following rampant land clearing during European settlement of southern Ontario in the 1800s, the landscape was left denuded of nearly all its trees. Without that green spongy natural cover that helps rain and melted snow soak into the ground, flash floods and soil erosion were commonplace and a great concern. In large part, Conservation Authorities were formed across southern Ontario to help with tree planting efforts. Lower Trent Conservation joined the movement in the 1970s, shortly following its formation.

Lower Trent Conservation's reforestation program likely started with the revitalization of Arbor Day, which was first established in Ontario in 1915 to encourage children to plant trees on school grounds. In 1975, Lower Trent Conservation rallied to reinstate Arbor Day, proposing to hold it every first Friday in May. The idea was a hit and countless schools took advantage of trees supplied by Lower Trent Conservation for spring events. Trees were also planted on newly acquired Conservation Lands, as well as other unusual areas in need such as the old Dead Creek garbage dump near Carrying Place, and along Main Street in Brighton where trees were lost to the 1973 tornado.

Lower Trent Conservation's reforestation program continued to evolve over the next few years. In 1976, free advice and support with tree planting were offered in headwater areas. By 1980, Lower Trent Conservation took on large tree planting projects by launching the Tree Planting Assistance Program, also known as the Private Land Reforestation Program. There were two options available to interested landowners, both had a few strings attached. For example, a landowner could plant trees by themselves at no cost (thanks to a subsidy), or have Lower Trent Conservation plant the trees at a cost of 1 cent per tree. Between 2,000 and 20,000 trees were available per property on a first come first serve basis. The trees could not be cut for at least 15 years, had to be fenced off from livestock, and, needless to say, had to be planted in the watershed region. Special Tree Planting recognition pins were awarded to those who planted at least 2,000 trees. The first, and later in 1991, the one-millionth tree of the reforestation program, were planted on Russell McComb's property in Cramahe Township. Tree survival back then was estimated at 60%, which was considered very good.

Thousands of trees were also planted on Conservation Lands under the Conservation Areas Reforestation Program. Of course, many volunteer groups were involved in getting trees in the ground, including school groups, Boy Scouts, Cubs, and Beavers through the Trees for Canada Program, which was focused on improving the environment while preserving land heritage across Canada. Many tree planters also worked under the national Katimavik program, which offered young adults opportunities to gain life skills and work experience while contributing to community development.

At the peak of the reforestation program in 1994, nearly 180,000 trees were planted across the watershed that year. Unexpectedly, the following year, massive provincial budget cuts put a stop to the program. Luckily, a new partnership with the Ontario Forestry Association was struck in 1996 to re-establish a tree planting program with renewed funding but at a less ambitious scale. Lower Trent Conservation was back in the tree planting business!

Over 40 years since its humble beginnings, the reforestation program (now called the Tree Seedling Program) is still popular with landowners. Although forest cover has returned to a modest 35% of the watershed landscape, trees and shrubs are still much needed to help reduce erosion along streams and shorelines, to create wildlife habitat, to cool waterways and urban areas, to help rain replenish groundwater, and to sequester carbon. Annually, about 15,000 native species of bare root tree and shrub seedlings are ordered and planted by watershed residents and the surrounding community. You'll be happy to know that, nowadays, only native species of trees and shrubs are sold by Lower Trent Conservation, recognizing their many ecological benefits compared to some non-native and invasive species (e.g. Russian olive, black locust, tatarian honeysuckle, Scotch pine) offered in the past. Today, you can order your native seedlings in early November and roll up your sleeves for planting in late April.



The 1,000,000th tree planted at the McComb property, the site of the first reforestation project
(May 9, 1991)



**Family Ski Day at
Goodrich-Loomis Conservation Area**



**'Forest bathing' at Goodrich-Loomis
Conservation Area
(September 2016)**



**Paddle the Trent
- Outdoor Series Event
(June 25, 2017)**



**Seymour Family Fishing Day
(May 12, 2018)**

Stepping into Nature (1977)

With the acquisition of several properties during Lower Trent Conservation's early years, the organization was eager to give the public an opportunity to explore and get to know these newly acquired conservation lands.

Goodrich-Loomis Conservation Area, with its network of 12 kilometres of trails, presented a perfect venue for a special event. The first annual Ski Day was held in 1977 but, as stated in the 1977 Annual Report, it was "a complete failure – it was a rain-out and therefore the ski trails, along with those brave people that did come out, only managed to get wet." Not to be discouraged, the event was scheduled the following year and over 200 people showed up! The annual Ski Day events were considered very successful over the next decade but, due to lack of snow for several years in a row, the event was cancelled in 1990.

Not to be disheartened by uncooperative weather conditions, the Ski Day was replaced with Ontario Hiking Day activities at the Conservation Area, followed by other events such as the Christmas for the Birds bird feeding workshop, Wildflower Walks with Don Hedger, Volkssport walking events, Rural Ramble, and a Fall Fling geocaching event, to mention a few.

Seymour Conservation Area, located just south of Campbellford, has also been a popular venue for an event over the years. Since 2004, Seymour Family Fishing Day has attracted around 180 eager anglers of all ages to the quarry each spring at Seymour Conservation Area. Partnering with the Kids, Cops and Canadian Tire Fishing Days program, youth have been given the opportunity to try their luck with fishing, as well as a chance at winning a tackle box or fishing pole.

More recently, a series of outdoor excursions (hiking, biking, and paddling) have been introduced. These guided events have given the Conservation Authority the opportunity to not only continue to introduce the public to our conservation lands, but explore other unique natural areas across the region like Peter's Woods Nature Reserve or Nawautin Nature Sanctuary.

Whether you venture to one of our 10 conservation areas for a special event or explore one on your own, with a friend or your family, stepping into nature is a great way to get outside and be active. In addition to improving your physical wellbeing, being surrounded by nature, even for just an hour, reduces stress and boosts mental wellbeing.

Original Outdoor Education Centre at Goodrich-Loomis Conservation Area
(established in 1978)



New Goodrich-Loomis Conservation Centre
(built in 1997)

Outdoor Education at Goodrich-Loomis Conservation Area (1978)

In July 1978, Lower Trent Conservation was presented with a proposal from a local school board to locate a building at Goodrich-Loomis Conservation Area for their Out of School Learning Program. Recognizing the importance to have students get outside to develop a curiosity and love for the outdoors, Lower Trent Conservation was very supportive of the idea. The Outdoor Education Centre was established by the Northumberland Newcastle Board of Education. In the fall, they moved a one room portable onto the site where students from their school board would attend outdoor activities.

Over the years, this building offered many students a home base for amazing outdoor experiences. The Conservation Area offered an exceptional backdrop for outdoor learning, utilizing the stream and trails to its full capacity. Though the building had no plumbing and had outhouses for bathrooms, the winter was one of the favourite times of the year for the students to visit this special place.

By the early 1990s, the busy outdoor education centre was beginning to show signs of age and wear. Unfortunately, with no excess funds available within the Conservation Authority's small property management budget, a replacement facility seemed very remote.

The hope of continuing the long standing tradition of youth environmental education at Goodrich-Loomis Conservation Area was renewed in 1997. A financial windfall of court directed funds from a local environmental spill permitted the building of a new facility on the property.

The official opening for the Goodrich-Loomis Conservation Centre took place in the fall of 1997. The outdoor centre has hosted special interest groups, day camps, and students of all ages. The Conservation Authority entered into an agreement with the Kawartha Pine Ridge District School Board to offer outdoor education at the Conservation Centre and this arrangement continues today.

Welcome conservation authority delegates

Starting this weekend, the Lower Trent Region Conservation Authority will be hosts for the 17th Ontario Conservation Authorities Biennial Conference.

With "Conservation Authorities role in the '80's" as the theme, representatives of Ontario's 39 conservation authorities will assemble at the Wandlyn Inn from Sunday, Sept. 14 until Wednesday, Sept. 17. The total number of delegates and their spouses should exceed 500 persons consisting primarily of Conservation Authority members, authority staff and personnel from the ministry of natural resources making it one of the largest conventions in Trenton's history.

The conference begins officially on Monday, with a meeting of the chairmen of the

authorities at the Wandlyn Inn. A meeting of the newly formed staff committee will be held simultaneously at the Lower Trent Region Conservation Authority Office on Front Street. The staff committee, with Vickie Barron as its president, is made up of conservation authority staff including resources managers.

All delegates will then attend a non-hour luncheon at the Wandlyn Inn where Russell Sills (chairman, LTBCA) will officially welcome the conference delegates to Trenton.

Beginning at 2:15 p.m. on Monday, delegates will have the opportunity to participate in one of four workshops on the following topics: Plan Review; development proposal through a plan review process concern-

ing on the conservation authorities role and mandate on the subject.

Stream Management Techniques. Methods of rehabilitating cold water trout streams for fish habitat will be the focus of this presentation.

Environmental Assessment. Since conservation authority undertakings are subject to the provisions of the Environment Assessment Act, a presentation on the procedure for carrying out an environmental assessment will be offered.

Private Land Extension: This fourth session will explain the private land assistance programs offered to private landowners through conservation authorities.

Later on during the day, a panel of four will lead a discussion on the subject of

vandalism in conservation areas. This panel will be chaired by Bob Hartley of the Lakeshore Region Conservation Authority to consist of representatives of the Ontario Provincial Police, the ministry of natural resources, the legal profession and the conservation authorities.

During the evening, Ontario's ten eastern region conservation authorities will host a banquet at the Knights of Columbus Hall in Trenton. Members of the head table will include Russell Sills, chairman of the Lower Trent Region Conservation Authority and Mayor Duncan McDonald of Hillsborough. Prince Edward Island, will be the theme speaker.

Tuesday morning will be highlighted by four presentations to the delegates beginning at 9:45 when Russ Powell of the Upper Thames Conservation Authority will provide a critique of the past four decades of conservation authority activity in Ontario. Following Mr. Powell, representatives of the ministry of natural resources will present three audio-visual presentations on: Provincial flood plain criteria, Federal-Provincial flood damage reduction program, Canada-Ontario Great Lakes Shore Management.

After a luncheon at the Knights of Columbus, buses will take the delegates and their spouses on pre-selected tours of the area including: The Canadian Forces Base in Trenton, Bata Shoes of Batavia, Lower Trent Region Conservation Authority Projects, a visit to Prince Edward County and the

and vote on resolutions pertaining to the activities and operations of conservation authorities as a whole. Following the morning session on resolutions, all the delegates and their spouses are invited on a boat tour of the Bay of Quinte and the Murray Canal followed by a beef barbecue at Presqu'ile Provincial Park in officially and the conference.

Since approximately two spouses or non-delegates are expected at the conference, a special program has been created for the non-delegates as follows:

On Monday, Sept. 15 at 10 a.m., an "Icebreaker Reception" will be held at the Sun Valley Motor Inn in Belleville followed by a buffet luncheon. During the afternoon, the women will be welcome to

participate in one of the following optional activities: show and display tour of Lower Trent Region Conservation Authority, Visit to Waterford House Antique and Gift Shop.

The non-delegates are also invited to attend the luncheon and two banquets at the Knights of Columbus in Trenton as well as joining one of the optional tours on Tuesday afternoon.

Separate functions are also planned for the spouses on Wednesday morning. Beginning at 9:30 at the Wandlyn Inn in Trenton, three optional activities will include: a tour of the Proctor House Museum, a tour of Bess Harman for a tour of greenhouses with a demonstration on plants and plant care, golfing.

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1980

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ONTARIO CONSERVATION AUTHORITIES
17th BIENNIAL CONFERENCE
SEPTEMBER 1980
HOST
LOWER TRENT REGION CONSERVATION AUTHORITY

LOWER TRENT REGION CONSERVATION AUTHORITY

Quinte area welcome

TRENTON Delegates participating in the 17th Ontario Conservation Authorities Biennial Conference are being welcomed to the Wandlyn Inn, Trenton, by the staff of the Lower Trent Region Conservation Authority.

The three-day conference, which is being held at the Wandlyn Inn, Trenton, is expected to generate between \$50,000 and \$75,000 in income for local businesses.

There are 500 delegates in the conference, the many for the first time. The majority of the delegates is being hosted by the Wandlyn Inn and the Sun Valley in Belleville, as well as several local inns.

Starting Monday morning a meeting of the chairmen of the authorities will be held at the Wandlyn Inn while at the same time the newly formed staff committee, made up of conservation authorities staff, will be meeting at the headquarters of the Lower Trent Region Conservation Authority (LTBCA).

A husband and wife team will be the hosts for the 17th Ontario Conservation Authorities Biennial Conference. The couple, L. T. & C. O., will be the hosts for the conference.

In the afternoon, the delegates will be invited to attend a luncheon and two banquets at the Knights of Columbus in Trenton as well as joining one of the optional tours on Tuesday afternoon.

Separate functions are also planned for the spouses on Wednesday morning. Beginning at 9:30 at the Wandlyn Inn in Trenton, three optional activities will include: a tour of the Proctor House Museum, a tour of Bess Harman for a tour of greenhouses with a demonstration on plants and plant care, golfing.



Conservation delegates at dinner

A provincial dinner was held for the 500 conservation delegates attending the 17th Biennial Conference in Trenton. The conference was represented by the 39 Conservation Authorities in

Ontario. William Foster, assistant deputy minister, Ministry of Natural Resources served as chairman for the dinner. - Staff Photo.

Biennial Conference

- Largest Conference in Trenton's History (1980)

On September 14 to 17, 1980, Lower Trent Conservation hosted over 500 delegates for the 17th Biennial Conference of Conservation Authorities. Delegates from across the Province, including Conservation Authority board members and staff as well as personnel from the Ministry of Natural Resources, converged on the Wandlyn Inn in Trenton for the four day conference which was reported to be "one of the largest conventions in Trenton's history."

Due to the number of delegates, too large for just the Wandlyn Inn, additional accommodations were handled by the Black Hawk and Sun Valley Motor Inns in Belleville. The itinerary for the conference included workshops, tours, and guest speakers which showcased a broad range of watershed programs and projects.

Topics included:

- Land use planning
- Stream management techniques
- Environmental assessment
- Private land assistance programs
- Conservation area regulations and vandalism
- Provincial flood plain criteria
- Federal/Provincial Flood Damage Reduction Program
- Canada/Ontario Great Lakes Shore Management

Delegates enjoyed bus tours of Canadian Forces Base Trenton, Bata Shoe Factory, Domtar Packaging paper mill, and local conservation authority projects as well as a boat tour of the Bay of Quinte to Presqu'ile Provincial Park.

At the conclusion of the conference, the Minister of Natural Resources, the Honourable James Auld addressed the large group, emphasizing the role conservation authorities play in flood control, flood plain management, and flood forecasting and warning. He said he was proud of the "unique system of conservation authorities that our province has pioneered. The vital part conservation authorities play is the envy of many jurisdictions."

These biennial gatherings of conservation authority staff and municipal representatives to share ideas, showcase conservation projects, and inspire new approaches continue today.

Flooding: Not If, But When . . . (1980)

Flooding is a natural event. Floods can be expected at any time during any year. Past records clearly document the serious and unpredictable nature of flooding. Many flood events occur in the spring as a result of precipitation and snowmelt, but heavy rain or ice jamming at other times of the year can also result in flooding issues.

Lower Trent Conservation, like all 36 conservation authorities in Ontario, is responsible for providing early warning of flood emergencies to municipalities and the public. The flood forecasting and warning program is intended to reduce the risk to life and damage to property caused by flooding.

The flood of 1980 demonstrated that, while Lower Trent Conservation had an operational flood warning program, the system lacked refinement and adequate coordination with provincial and municipal emergency planning. Lower Trent Conservation immediately responded to this need with the development of a comprehensive flood warning plan that included extensive contact lists, identification of roles and responsibilities, and procedures for disseminating water level bulletins. Flood contingency plans are reviewed and updated on an annual basis.

In that same year, the Conservation Authority also began the formulation of a network of stream gauges to further augment its flood forecasting capabilities.

Today, Lower Trent Conservation's flood forecasting and warning program consists of the daily collection of data from a network of stream gauges, weather stations, snowpack measurements, weather forecasts, and computer models to determine the potential for flooding.

When spring melt or severe storms are anticipated, Lower Trent Conservation estimates the severity, location, and timing of possible flooding and may issue bulletins to municipalities and watershed residents using three types of messages:

- **Flood Warning:** flooding is imminent or already occurring
- **Flood Watch:** there is the potential for flooding
- **Watershed Conditions Statements:** flood outlook (an early notice of the potential for flooding based on heavy rain, snow melt etc.) and water safety information.

Water Level Bulletins - Definitions



Normal Conditions: No flood conditions exist.

Water Safety Statement: High flows, unsafe banks, melting ice or other factors that could be dangerous for recreational users such as anglers, canoeists, hikers, children, pets, etc. Flooding is not expected.

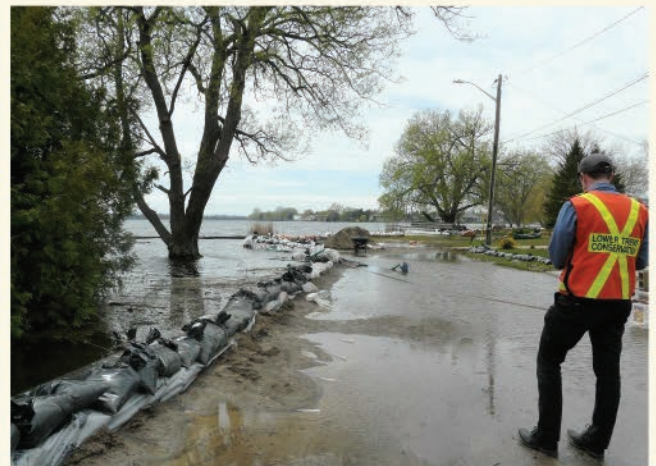
Flood Outlook Statement: Early notice of the potential for flooding based on weather forecasts calling for heavy rain, snowmelt, high wind, or other conditions that could lead to high runoff or cause ice jams, lakeshore flooding, or erosion.

Flood Watch: Flooding is possible to occur in the near future in specific watercourses or municipalities. Nuisance flooding of access roads, backyards, basements, etc. may be occurring. Buildings/people are not at risk. The Flood Watch is intended to provide notice to municipalities, emergency services, and individual landowners in flood prone areas that measures should be taken to prepare for possible flooding.

Flood Warning: Flooding is imminent or occurring. The Flood Warning is intended to provide notice to municipalities and emergency services that action is required on their part.



Frankford
(March 1980)



Lake Ontario flooding, Brighton
(2017)

Warkworth Journal

THE TOWN OF NORTHUMBERLAND COUNTY

Second Class Mail Registration No. 0845

VOLUME 80

THURSDAY, MARCH 27, 1980

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WARKWORTH IS FLOODED!

Friday March 21 was a black day for Warkworth from the middle of the afternoon on into the early morning. The heavy rain and snow melt caused the water level to rise so much that the pumping station was unable to pump out the water. The big turbines of the station were off in some parts of the village as well. No water again on Monday.

Mr. and Mrs. W. Grant Allen report that they have never seen anything like it in the thirty-six years they have been living at 94 Hastings Road, which borders on the Creek at the back. It is a considerable distance from the Creek but the water rose and washed right up and flooded their basement.



Area flood damage extensive

Extensive flooding throughout the area... The water level in the creek... The damage to the houses... The water was so high that it was impossible to walk through the streets... The water was so high that it was impossible to walk through the streets... The water was so high that it was impossible to walk through the streets...



Rainfall record

The rainfall record for the area... The rainfall was so high that it was impossible to walk through the streets... The rainfall was so high that it was impossible to walk through the streets... The rainfall was so high that it was impossible to walk through the streets...



Warkworth



Frankford



Stirling

The Flood of 1980

“Warkworth is Flooded!” – Warkworth Journal

“Warkworth Hit Hard by Flood” – Campbellford Herald

“Ice Chunks ‘Size of Freezers’ Float Through Warkworth Downtown”

“Flood Waters Choke Trenton Highway Exits”

“Flood Closes 401”

“Area of Flood Damage Extensive”

These were among the headlines in newspapers across the Lower Trent watershed region on the days following intense rainfall.

The day was Friday, March 21st, 1980 – a rainfall record was set for a 24-hour period in the month of March. The weather station at CFB Trenton recorded 58mm.

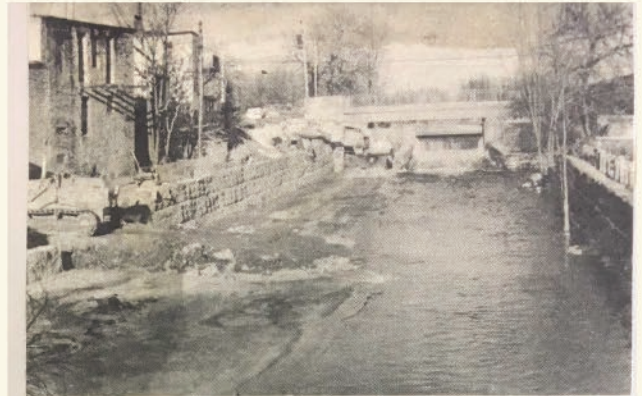
The next day, another 6mm fell, adding to the record rainfall for a total of 64mm (close to 2.5 inches) in a 36-hour period. All of this rain fell on frozen ground, which was unable to absorb much of the precipitation, if any at all. In addition to the excessive flows, ice formations and debris intensified the flooding, blocking culverts and other ways for water to move through and out of the area.

Local accounts claimed that this was the worst storm to hit Warkworth since that of 1928, which also resulted in a flood. In Frankford alone, approximately 25 houses and businesses were severely damaged by the floodwaters. A flood relief worker reported up to 1½ feet of water rushing between these properties and across the main street and into the Trent River.

The damage to property and risk to the wellbeing of residents created by the 1980 flood reinforced the need for the development of an improved flood contingency plan. Today, Lower Trent Conservation continues to play an important role in monitoring water levels and potential or occurring flood conditions, and reporting these to the public and local municipalities. The 1980 flood provided Lower Trent Conservation with more concrete information about how local watercourses respond under such extreme conditions. It also prompted municipalities to seek funding for flood plain mapping under the Flood Damage Reduction Program. This accelerated the development of flood plain mapping, which Lower Trent Conservation uses to make decisions about planning and development applications in an attempt to eliminate or reduce the risk to life and property.



Trout Creek Capital Works Project (1980s)



Creek work flowing along.

Creek work to continue in 1981

Rawdon Creek, in the Village of Stirling, has seen a lot of activity in the past few weeks. The northwest and southeast banks, between the James Street dam and covered bridge, have seen extensive work in an attempt to alleviate serious erosion along the banks of Rawdon, as well as protect the dam, bridge, and several homes from structural damage caused by spring runoff and flooding.

The work, supervised by the L.T.R.C.A. is being done by Ivan Hubbard Construction Limited of Peterborough. Funding is through the Water and Related Land Management Program at a total cost of \$70,000.00.

At present the project is two-thirds complete. The northwest embankment when finished will have a vertical, stepped back gabion wall sitting on a one-foot thick apron which extends out below creek level. This apron will prevent any undermining by the creek and will help in stabilizing the wall. Further structural support is obtain-

ed by setting the gabion wall on an angle of 1 to 8 which puts the load on the rear of the structure reducing the tendency of the wall to shift. A special feature of gabion walls is their natural ability to allow water drainage through percolation thus reducing water pressure behind the wall, which if left to build up, could cause structural damage. A concrete retaining wall with drainage out through the structure will be constructed

to give added protection to the lower three properties on the downstream section of the creek.

Work will continue in 1981 with final leveling and sodding on the northwest bank and work on the southeast bank getting underway. When completed, the channel should be aesthetically pleasing and will provide flood protection when the next 1 in 100 year storm hits.



Flood Control Structures – Protecting People & Property (1980)

Many of the urban centres within the Lower Trent watershed region were settled along river valleys and in close proximity to watercourses. While there were many benefits to locating in these places, there were also risks from flooding and erosion.

Following the flood of March 1980, Lower Trent Conservation spent the next 10 years focused on constructing various flood protection projects to protect people and existing homes and businesses from future flooding. Ten flood and erosion control projects were built in various municipalities throughout the watershed.

Grants were provided by the Province of Ontario to implement these projects with the remaining funds coming from the individual municipalities that directly benefited from the project. Flood protection projects include a dam, flood walls, berms, weirs, and by-pass channels located in Trenton, Brighton, Campbellford, Hastings, Warkworth, Stirling, and Frankford.

As most of these structures were constructed over 30 years ago, a maintenance program and yearly inspections are required to ensure that they are in good condition and continue to function as originally designed to protect lives and property in the event of a severe flood.

Flood Protection & Erosion Control Structures:

- Burnley/Mill Creek (Warkworth) Flood Control: dam (1972, 1991) & flood wall (1982)
- DND Creek (Trenton) Flood Control: berm & gabion channel (1981)
- Cold Creek (Frankford) Flood & Erosion Control: berm & channel improvements (1982)
- Mayhew Creek (Barry Heights - Trenton) Flood Control: channel improvements (1982-1984)
- Mayhew Creek (Trenton) Flood Control: by-pass channel, weirs & berms (1985-1986)
- Glen Miller Creek (Trenton) Flood Control: berm & channel improvements (1983-1984)
- Trent River (Trenton) Flood Control: berm (1986)
- Rawdon Creek (Stirling) Flood & Erosion Control: gabion channel (1980-1981), flood wall, berm & weir (1986-1988)
- Trout Creek (Campbellford) Flood Control: flood wall & channel improvements (1986-1988)
- Killoran Creek (Hastings) Flood Control: flood wall & channel improvements (1986-1987)

Amazon of the Trent River - Murray Marsh (1981)

For much of history, people have thought of wetlands as wastelands or waste of space. Today, some call wetlands kidneys of the earth, hinting at their job as critical organs of a healthy watershed. With their organic soils and multitude of plants, wetlands can trap sediment and filter out pollutants. They help prevent flash flooding by sucking up and holding on to rainwater in their mucky soils and thick vegetation. In dry summer periods, wetlands release groundwater into creeks to keep them flowing and the fish swimming. Wetlands house and sustain rich biodiversity. Alarmingly, in southern Ontario, only about 30% of wetlands have survived land clearing, filling, and draining of the past 200 years.

Beginning in 1981, Lower Trent Conservation came to recognize the value of one very special wetland – the Murray Marsh. Affectionately dubbed the ‘Amazon of the Trent River’, this vast wetland sits in the heart of the watershed region, stretching for 10 kilometres along the Trent River south of Campbellford, and extending 8 kilometres south nearly reaching the hamlet of Wooler. A large portion of Murray Marsh is located within the geographic Township of Murray (today known as Quinte West - Murray Ward), and thus bears its name. Additionally, a portion of the Murray Marsh is also located in the Municipality of Brighton. Even though Murray Marsh was mostly inaccessible and not suitable for farming, interest in resort development and peat extraction threatened its existence. To protect it, Lower Trent Conservation wanted to buy it. Four students completed a detailed biological inventory of the wetland in 1982. Then we started looking for money to purchase some swamp.

Lower Trent Conservation bought 667 hectares of this fantastic “swampland” in 1986 and 1987 with funding from the Nature Conservancy of Canada, Ontario Heritage Foundation, Ministry of Natural Resources, and Wildlife Habitat Canada. As a result, over half of Murray Marsh was now protected from disturbance and development through the combined ownership between Lower Trent Conservation and the Ministry of Natural Resources and Forestry.

Today, Murray Marsh is one of the largest non-fragmented wetlands left in southeastern Ontario. Encompassing 3,760 ha of diverse habitats, rich biodiversity and a flood storage area, Murray Marsh is classified as a

Provincially Significant Wetland and a Life Science Area of Natural and Scientific Interest. Its geography is also pretty extraordinary with drumlin fields to the east, sand and clay plains to the west, and an esker ridge to the south. Several watercourses flow through this huge wetland before joining the Trent River. Its varied and scenic topography includes 27 drumlin islands, which offer spectacular views of the Trent River valley.

Indigenous people, who lived in the Trent River valley for thousands of years, have used the wetland and its abundant resources. An indigenous sugar bush was recorded on Potts Island, on the northern edge of the wetland, during the survey of the 10th Concession in Murray Township in 1820. Burial mounds have also been identified on Jett and Potts Islands within the wetland.

In 1863, parcels of land on Austen and Ames Islands in the Murray Marsh were also surveyed. Surrounding the two islands, the surveyor described a cedar and tamarack swamp, just like today. More recently, Charlie Puddephatt moved to farm on the drumlin hills surrounded by the Murray Marsh in 1934. The Puddephatt property was purchased by Lower Trent Conservation; however, Charlie had a life lease on the property, which he managed until his death in 2010. Today, the site of his farmstead is marked by a commemorative boulder and a map kiosk.



LTRCA buys a swamp

Everybody has heard the story about the fellow who bought a parcel of land at a good price, and then found out that most of it was underwater much of the year.

The Lower Trent Region Conservation did exactly that recently, and feel that they got a very good deal.

The land is situated in the Murray Marsh on the west half of lot 25 and all of lot 26, Concession 8, in Brighton Township. The marsh consists of 10,000 acres and serves as a habitat for a variety of flora and wildlife.

The LTRCA's acquisition was paid for by Wildlife Habitat Canada and the Nature Conservancy of Canada. Each paid 50 per cent of the purchase price, said Nancy Archer of the LTRCA.

John Crittenden, the owner of the land, accepted the Authority's offer to purchase March 21. They will take possession June 30.

Archer said out of the 300 acres, 260 acres are wetland and 40 are marginal uplands. The authority hasn't decided what they will do with the land. Before they decide they want to arrange meetings with other environmental groups in the area and with two agencies that paid for the land, Archer said.

This is the LTRCA's first land purchase in the marsh. They have looked at other land properties when they became available, but there will be no other purchases for the present. Archer said they only acquired this land because the two agencies were willing to pay for it. The Authority usually receives money through the Ministry of Natural Resources, who own 3,000 acres in the marsh, but funding was not available from them for the Authority to acquire additional land.



First Hydrometeorological Station - Keeping Tabs on Local Waterways (1981)

They've been called many different names: hydrometeorological station, hydromet station, hydrometric station, stream gauge, stream flow recording station, water monitoring station to mention a few. But the one thing that is the same – these small outhouse or dog house sized metal buildings, located most often beside a bridge where roads cross over a waterway, play a critical part in Lower Trent Conservation's flood forecasting & warning program.

In the aftermath of the 1980 flood, which impacted many communities across the watershed region, Lower Trent Conservation began installing water monitoring stations. The gauges would provide remote access to real-time stream flow and precipitation data, providing up-to-the-minute information vital to forecasting future flood events.

The first water level and precipitation gauge station was installed on Cold Creek at Orland on County Road 30 in 1981. Two more were installed on Rawdon Creek near Stirling and Burnley Creek near Warkworth, one each in the following two years. Next came Mayhew Creek in 1992, with three more stations installed in 2005 on Salt, Squires, and Trout Creeks. Today, Lower Trent Conservation accesses water level/flows from 13 monitoring stations and precipitation at 10 stations in partnership with the Water Survey of Canada and Parks Canada.



ENVOY 100 used a telephone line and modem to remotely communicate monitoring data



Official Opening of Salt Creek Stream Gauge (2005)

The first stations were equipped with a data logger to collect and store data. From each location, using a telephone line and modem, the information was remotely telemetered to the Conservation Authority office and Flood Forecast Centre in Toronto using the ENVOY 100 system, a text-based messaging service and early form of electronic mail (e-mail).

The water monitoring network has evolved since the early years of the program to integrate new technologies and to improve efficiency and reliability of monitoring information. Telephone lines are being switched to satellite communications and new data management and software solutions have been introduced in the past several years.

Techniques of actual water level measurement have changed as well. The standard wet well, where a pipe from the stream was connected to a well inside the gauge house with a float measuring the water level in the well, was originally used. Some newer stations have been fitted with measuring devices that don't require as much infrastructure or modification to the stream, including simple pressure transducers or a bubbler system where the pressure from the water is measured and it changes with changes in water depth. While the tools and technology used to collect real-time streamflow and precipitation data along local waterways has changed over the years, the importance of providing municipalities and the public with advance warning of potential flooding remains unchanged.



Precipitation monitoring equipment





To conservationists, the stream is

No. 1

Photos and story
by Jody Farrell

Fencing protects from cattle; 'rip-rap' guards against ero



The Lower Trent Region Conservation Authority (LTRCA) is well into its stream rehabilitation program, preventing erosion and obstructions, and helping improve the quality and quantity of local water.

The program is a continuation of a project done last summer through the Shelter Valley and Rawden Creek areas. Through the experience of '81 students mapped out along the streams. Earlier this year, the LTRCA approached various landowners with damaged banks of those interested in stream rehabilitation, and signed contracts for the work. Three students hired through the program are assisting field supervisor Paul Hinde with the work.

Hinde and the students have spent several weeks "rip-rapping" the stream banks. Rip-rapping involves regrading the stream banks with rocks.

"For this site," Hinde explains, "we placed loads of rock. For every one foot high we placed it to go back three feet. Once this is done, we'll plant seed, so that the stream goes back to sod."

The different methods used in the program depend on the particular sections of the stream. To prevent livestock, for example, the LTRCA has installed fencing alongside the stream. Areas where boulders have created obstructions to permit water to flow more freely.

The students had nearly completed the rip-rapping of the stream along the Broomfield property. Fencing was to be put up along the stream by Broomfield's cattle trampling by Broomfield's cattle. The rocks, carried back by hand-placed on the stream.

The LTRCA have also allowed access points along the Broomfield property where animals can access the stream without trampling down the stream. The access points have been filled with rocks to assure a solid surface will be placed over the "driveway" type access route.

Hinde says that the total cost of the stream rehabilitation program (aside from the student labor) is \$10,000. Ninety per cent of this will be paid for by the landowner. The cost to the landowner is about \$1,000.

The LTRCA have signed 9 agricultural contracts for stream rehabilitation along the Shelter Valley and Rawden Creek landowners. Because of the need for stream rehabilitation work areas, the LTRCA will access about 23 sites throughout the shelter valley.

Who, besides the landowner, is responsible for stream rehabilitation?

"We all do," Hinde says. "If there is erosion, we increase the quantity of water by speeding it through the area."

The regrading of streams increases the quantity of water by speeding it through the area, Hinde says. Increased speed allows more oxygen to be dissolved in the water, thereby further improving its quality.

STREAM

REHABILITATION

Lower Trent Region Conservation Authority is working throughout the summer to improve local streamways.

Above right, a section of the Shelter Valley streambank has been lined with rocks, in a process known to conservationists as "rip-rapping." Prior to rehabilitation, the soil bank was continuously being cut back by the water-flow. The newly regraded stream area will permanently prevent bank erosion.

Experience '82 summer student, Gary Bolman, (right), Brighton, hand-places the rocks carried to the stream by back hoe. Above, student worker Laurie Chapman, Stirling, replaces the soil after regrading the banks. Below, Cobourg back hoe operator Mike Kloostr moves rocks to the "cattle access" section of the stream.



Protecting Local Waterways

- Conservation Services to Landowners Expanded (1982)

In 1982, the Conservation Services Program available to landowners was expanded to include streambank rehabilitation in addition to the reforestation activities that had been offered for over five years. The Conservation Services Program was considered a way the Conservation Authority could work towards achieving its early water and related land management goals. The Program made these two valuable conservation services available to watershed landowners for very little cost.

Extensive inventories were undertaken in 1981 for the Rawdon Creek and Shelter Valley Creek watersheds by summer technical staff. Areas experiencing significant erosion and topsoil loss, dams and stream obstructions, cattle access problem areas, and marginal lands suitable for reforestation were identified and prioritized.

Following a number of successful pilot projects on Shelter Valley Creek in 1981, the streambank rehabilitation program was implemented in earnest in the spring of 1982. Private landowners stepped up to the challenge and embraced stewardship to improve the local watershed. Agreements were signed and Lower Trent Conservation covered 90% of the project cost with the landowner paying 10%. Rehabilitation techniques included planting shrubs, installing rock rip rapping, constructing log cribs along streambanks, clearing in-stream obstructions, limiting livestock access to streams, and establishing buffer strips and grassed waterways.

In the first four months, 38 sites with nine landowners on Shelter Valley and Rawdon Creeks were completed. As the years went on, many more creeks were inventoried, sites were prioritized, and rehabilitation plans were developed to fix the identified problems.

Many landowners benefitted, including members of the Cold Creek Improvement Association. The association consisted of a voluntary group of 30 to 40 cooperating landowners dedicated to the natural rehabilitation of the Cold Creek watershed. Projects comprised of streambank erosion protection, tree and shrub planting, livestock exclusion fencing, machine and cattle stream crossings, construction of manure storage facilities, and creek obstruction removal.

The Conservation Services Program was discontinued in the mid 1990s as a result of significant provincial funding cuts.

The Bay of Quinte Remedial Action Plan

– Restoring the Bay (1985)

The Bay of Quinte was designated an Area of Concern in 1985 by the International Joint Commission (a Canadian-American Great Lakes watch dog), under the *Great Lakes Water Quality Agreement* between Canada and the United States. Areas of Concern are communities, bays, and rivers on the Great Lakes system where human activities have severely damaged the quality of the environment. There were 43 Areas of Concern around the Great Lakes, 17 are on the Canadian side, and 5 of those are binational. Each Area of Concern must develop a *Remedial Action Plan (RAP)*.

Before the Bay was designated an Area of Concern, research and monitoring on environmental issues was already underway by a multi-agency program called Project Quinte, which started in 1972. The formal Remedial Action Plan process started with the establishment of a multi-agency Coordinating Committee in 1986. Its task was to define the Bay's environmental problems and report on findings.

In 1990, a document defining the environmental conditions and problems was compiled. It outlined four ecosystem problems: excess nutrients, bacterial contamination, toxins, and loss of fish and wildlife habitat. In 1993, another document was written that listed eleven environmental challenges and made 80 recommendations for remedial actions to complete the Bay's rehabilitation and protect it from future damage.

Public involvement has always been an integral part of the Remedial Action Plan process. In 1988, a Public Advisory Committee was formed to involve the public in the decision making process for remedial actions. As the Bay's restoration program has evolved, so has the public's contributions to the process.

Since 1997, implementation of recommended actions for the Bay of Quinte has been facilitated by members of the Bay of Quinte Restoration Council. It is co-chaired by Lower Trent Conservation and Quinte Conservation and comprised of federal and provincial agencies, municipalities, Mohawks of the Bay of Quinte, CFB Trenton, and the public.

Over the years, there have been numerous initiatives to help restore the water quality in the Bay of Quinte. There have been sewage treatment plant upgrades, stormwater management plans, rural water quality programs, water treatment plant upgrades, habitat and shoreline restorations, fish management plans, industrial abatement strategies, community stewardship projects, and natural heritage strategies, all designed to rehabilitate the Bay's ecosystem.

Today, most of the environmental challenges have met their criteria and most of the recommended actions to rehabilitate water quality in the Bay have been completed. One final action is the development and implementation of a Phosphorus Management Strategy.

Today, the Bay of Quinte is a healthy and vibrant ecosystem. Now, we must focus on keeping it that way.

