

# The Thames River, Ontario

## Canadian Heritage Rivers System Ten Year Monitoring Report 2000-2012



*The Thames,  
A Canadian Heritage River*



Prepared for  
the Canadian Heritage Rivers Board

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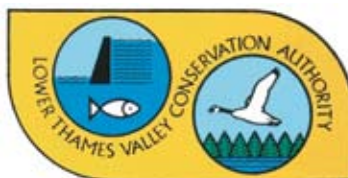
Cover Photograph: The Thames CHRS plaque at the Forks in London. C. Quinlan

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## Thames River, Ontario

### Canadian Heritage Rivers System, Ten Year Monitoring Report 2000 – 2012

#### UPPER THAMES RIVER CONSERVATION AUTHORITY



Canadian  
Heritage  
Rivers  
System



Le Réseau  
des rivières  
du patrimoine  
canadien

Compiled by Cathy Quinlan, Upper Thames River Conservation Authority, with assistance from members of the Thames Canadian Heritage River Committee.

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# Executive Summary

The Thames River nomination for inclusion in the Canadian Heritage Rivers System (CHRS) was accepted by the CHRS Board in 1997. The nomination document was produced by the Thames River Coordinating Committee, a volunteer group of individuals and agency representatives, supported by the Upper Thames River Conservation Authority (UTRCA) and Lower Thames Valley Conservation Authority (LTVCA).

The Thames River and its watershed were nominated on the basis of their significant human heritage features and recreational values. Although the Thames River possesses an outstanding natural heritage which contributes to its human heritage and recreational values, CHRS integrity guidelines precluded nomination of the Thames based on natural heritage values because of the presence of impoundments.

Following the production of the extensive Background Study document in 1997 and the Thames Strategy in 2000, the Thames was designated a Canadian Heritage River in the summer of 2000. The dedication ceremony took place in September of 2000 in London, Ontario.

This report attempts to collect and analyse the events, studies and any improvements or threats to the river and watershed for the 10 years after designation (2000 to 2012).

Many improvements have been made to the natural, cultural and recreational values as well as general river awareness. Some noted examples from Chapters 2 (Chronology of Events since Designation), 3 (Natural Heritage Values since Designation), 4 (Cultural Heritage Values since Designation), and 5 (Recreational Values since Designation) of this report include:

- The annual *Thames River Cleanup*, started in 2000, has grown each year,
- The Upper Thames River Conservation Authority has produced three sets of watershed report cards (2001, 2007, 2012), synthesizing a great deal of environmental data in a concise format, showing steady to improving conditions,
- New riverside trails have been opened on the North Thames and South Thames as well as in communities such as St. Marys, Ingersoll and London,
- The historic Thames River Lighthouse received a face lift in 2002,
- Several books have been written on the Thames dealing with local history, art and the War of 1812,
- Bridge signs at several Thames River crossings have been erected to raise awareness about the river and its CHRS designation,
- War of 1812 commemorative events were launched,
- Living History events and re-enactments continue across the watershed,
- *The London Free Press* ran a 5 month series called *A River* covering a wide range of Thames River related articles, videos, blogs, photos, etc.,
- Several museums have improved their infrastructure and programming,
- In 2009, London City Council adopted the *Thames Valley Corridor Plan, Phase 2* (2009) a long-range vision document that will be a key planning tool for sustaining the river's attributes, supporting environmental and economic vitality, tourism and local and regional recreation

initiatives. Also the plan requires appropriate integration of new buildings into the corridor environment rather than ‘turning their back’ on the corridor,

- In 2010/11, an updated Thames River Water Management Plan (TRWMP) was initiated. This plan is a key component of a broader Watershed Strategy known as the Thames River Clearwater Revival,
- The Conservation Authorities and many partner groups use the Canadian Heritage River logo or reference the CHRS status of the Thames in their correspondence and reports.

The analysis of Integrity Guidelines in Chapter 6 shows no threats to most values. The only threats are wide ranging issues, such as climate change, that are not isolated to the Thames River, and whose impacts are unknown at this time.

Chapter 7 (Management Plan Recommendations and Current Status) lists 12 objectives from the *Thames Strategy* and reviews achievements or lack thereof. In summary, five objectives are complete, one is addressed, three are ongoing, and three are partially complete.

Overall, the cultural and recreational values for which the Thames was designated remain intact. The natural, cultural and recreational landscape through which the river flows continues to be enjoyed, appreciated and celebrated by area residents and visitors.



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# Chapter 1. Introduction

## 1.1 Purpose

This report is a 10 year monitoring requirement to assess the status of the values identified in the Nomination Document and the management actions in *The Thames Strategy* (Management Strategy document).

The objectives of this report are to:

- Describe major changes and/or events on or of the River since 2000,
- Report on the current condition of heritage values for which the River was nominated and whether the River still possesses these values,
- Review CHRS integrity guidelines to determine if they are still being met,
- Determine the degree to which actions outlined in the Heritage Strategy have been implemented,
- Describe any threats to values or to integrity guidelines since nomination, and
- Make recommendations.

## 1.2 Background to Designation

In 1996, a broad-based community group of more than 70 people, representing many different local organizations and with support from all municipalities in the watershed, began to gather information and prepare the necessary documents for the nomination of the Thames as a Canadian Heritage River. Coordinated by a Steering Committee led by Dr. Douglas Bocking, retired Dean of Medicine at Western University, and with technical assistance from the Upper Thames River Conservation Authority (UTRCA), a request for consideration of the Thames watershed was made.

The committee and UTRCA staff prepared the Nomination Document in 1997, which was accepted by the Canadian Heritage Rivers Board. In 1997, following successful fundraising, researchers were hired to prepare the extensive Background Study document and Management Strategy, under the guidance of the Steering Committee and others.

The entire length of the Thames River was designated a Canadian Heritage River in the fall of 2000 by the governments of Ontario and Canada under the Canadian Heritage Rivers System (CHRS). The CHRS is a national heritage program, a cooperative effort by the federal, provincial and territorial governments.

In the 10 or more years following designation, many positive changes have occurred and the Thames continues to exemplify the outstanding cultural and recreational values for which it was nominated and designated.

The Thames Canadian Heritage River Committee, supported and guided by the Upper Thames River Conservation Authority (UTRCA) and Lower Thames Valley Conservation Authority (LTVCA), continued to meet regularly after designation, to find ways to increase awareness about the value and importance of the river. Other groups and agencies continue to promote and care for the river and watershed.

The Thames lies in a highly developed part of Ontario, outside of the provincial or federal park systems (see Figure 1). Managing the Thames as a Canadian Heritage River involves nurturing the values for which it was designated, with the following broad goal:

*To increase the appreciation, enjoyment and stewardship of the natural and cultural heritage and recreational opportunities of the Thames River and its watershed through community cooperation and involvement.*

A summary of the proposed Future Actions listed in *The Thames Strategy* include the following:

1. Establish and empower a Thames Implementation Committee to act as the catalyst that drives *The Thames Strategy*.
2. Monitor the river's values by completing the Thames River Annual Report Checklist; and monitor the progress of *The Thames Strategy* every 10 years and present the results to the Canadian Heritage Rivers Board.
3. Host a series of community workshops across the watershed inviting both non-government and government stakeholders and individuals.
4. Promote and distribute the Thames River Background Study (print and CD ROM) to schools, libraries and other interested groups.
5. Write and distribute a regular Thames River Newsletter.
6. Establish a Thames River website to communicate information.
7. Feature a regular column on the Thames in local newspapers.
8. Establish and celebrate an annual Thames River Heritage Day.
9. Erect plaques in communities explaining the designation of the Thames as a Canadian Heritage River.
10. Develop Thames River Heritage Tours.
11. Produce a War of 1812 Daybook and/or Tour and erect signage at battlefield sites.

### **1.3 Overview of the Thames River Watershed**

The Thames River watershed is nestled in the agricultural heartland of southwestern Ontario in close proximity to lakes Huron, St. Clair, and Erie. The river is 273 km long (as measured from the headwaters of the South Thames) and drains some 5,825 km<sup>2</sup> of land, making it the second largest watershed in southwestern Ontario. Figure 1 illustrates the major drainage pattern of the watershed and the locale of major urban centres.

The Thames rises at three distinct points. The South Thames or South Branch originates near Tavistock, and flows through Woodstock, Ingersoll and London, where it is joined by the North Thames. The North Thames River, also known as the North Branch, begins near Mitchell and flows through St. Marys to the Forks. The Middle Thames River starts near Hickson and enters the South Thames near Putnam. The Forks in London is the city's most important historical landmark. From this point, the river flows parallel to Lake Erie toward Lake St. Clair, passing through Delaware, Wardsville, Thamesville and Chatham as well as the Chippewa, Oneida, Munsee-Delaware and Moravian Delaware First Nations communities. The Thames empties into Lake St. Clair at Lighthouse Cove.

There are approximately 550,000 people living in the watershed. The river is under the jurisdiction of two conservation authorities: The Upper Thames River and Lower Thames Valley, with the dividing line at Delaware downstream of London.

The presence of dams on the river precluded its designation on natural values. However, the location of the Thames within the ecologically rich Carolinian Zone (Deciduous Forest Region) means it has a large diversity of plants and animals and also a large number of species at risk. These features are described in the *Background Study: Thames River Watershed, Ontario* (1997) and summarized in *The Thames Strategy: Managing the Thames as a Canadian Heritage River* (2000).

The Thames was known historically as Askunesippii or Antlered River by the Ojibway people, and later as La Tranche or The Trench by French fur traders, and finally as the Thames River by Governor Simcoe (circa 1784), after the Thames River in London, England.

## 1.4 Methodology

The following approaches were used to gather information towards assessing the river's status as a Canadian Heritage River in the ten years following designation:

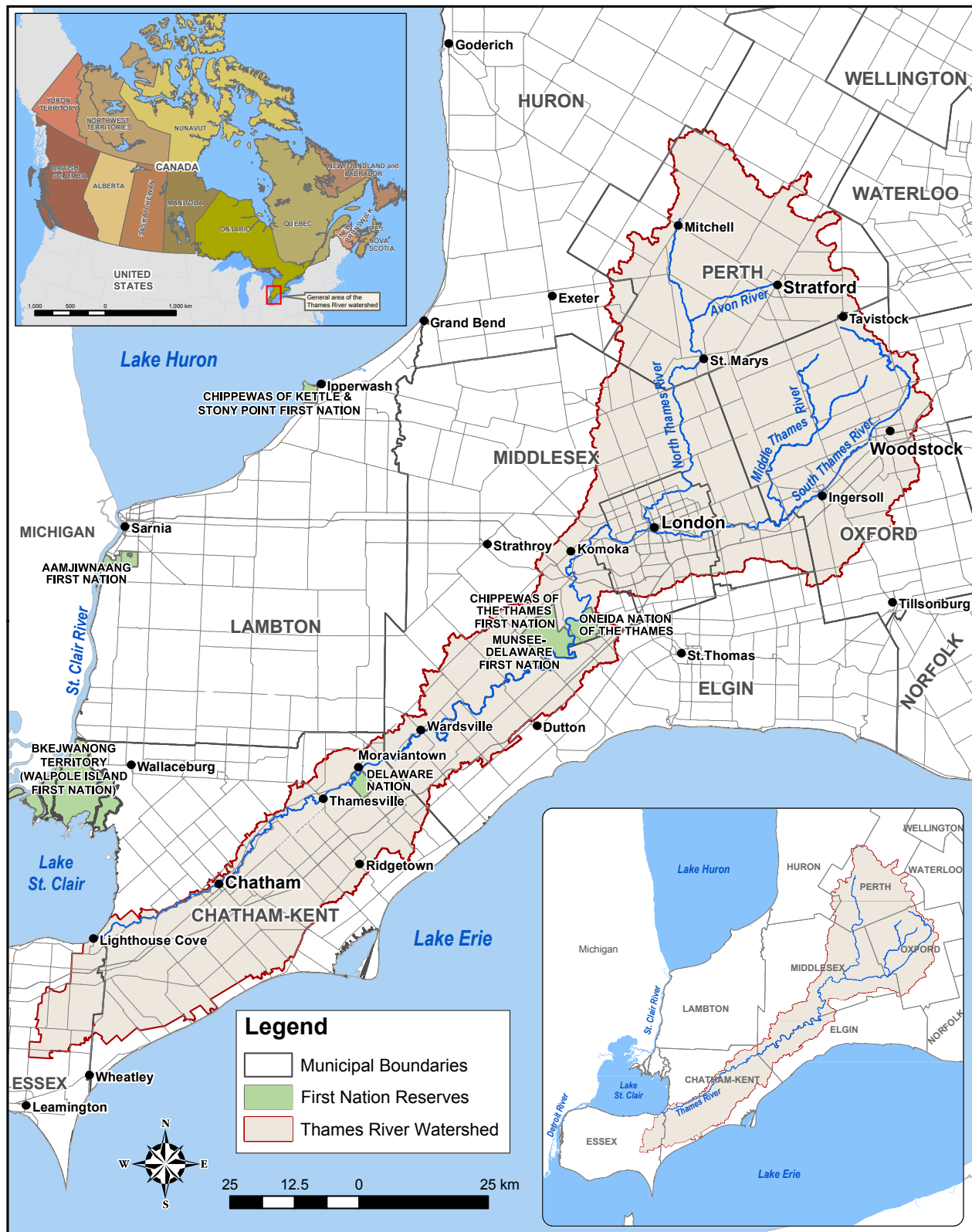
- Review of the *Background Study* (1997), Nomination Document (1997) and Management Strategy called *The Thames Strategy* (2000),
- Review of annual reports submitted to CHRS,
- Review of newsletters called *Thames River Happenings* prepared by the Thames Canadian Heritage River Committee,
- Interviews with key personnel with an interest in the river,
- Review of various literature, media sources, and websites having relevance to the river and watershed,
- Gathering and digesting of all the information received.

Tables provided by CHRS for Natural, Cultural and Recreational values as well as Integrity Guidelines were used to document the river's condition in a concise and complete manner.



*Some of the members of the Thames Canadian Heritage River Committee with the CHRS plaque at the Forks in London.*

**Figure 1. The Thames River Watershed**



## Chapter 2. Chronology of Events since Designation

The following section summarizes some of the key events, actions, research or studies that have occurred since designation in the year 2000 to present (2012). Many activities have been initiated by the Thames Canadian Heritage River Committee, the Upper Thames River Conservation Authority (UTRCA), and Lower Thames Valley Conservation Authority (LTVCA). However, an equally large number of events have been initiated by local citizens, communities and municipalities, each dedicated to sustaining the Thames River's values.

### 2000

- The Thames River and its watershed were officially designated to the Canadian Heritage Rivers System (CHRS). The designation event was held on September 29th next to the North Thames River in Gibbons Park, London, Ontario.
- The first annual *Thames River Cleanup* was started by Perth County resident, Todd Sleeper.
- A bronze plaque recognizing the historic significance of the Thames River and its CHRS designation was unveiled at Thamesgrove Conservation Area in Chatham on September 30th during the Heritage Days weekend. The Heritage Days Committee, with support of the Kent Military Re-enactment Society and Kent Historical Society, organized the erection of the plaque and the unveiling ceremony.

### 2001

- The Thames Canadian Heritage River Committee hosted the first *Thames River Symposium*, titled "Canadian Heritage Rivers Designation: Where do we go from here?" The one-day event took place on April 7th, 2001 at King's College, London, Ontario.
- The Upper Thames River Conservation Authority published its first set of *Watershed Report Cards*, giving grades for surface water quality and forest conditions for 28 subwatersheds within the basin. The average surface water quality grade was a C and the average forest conditions grade was a D. This report provided a benchmark for future report cards. It was the first watershed report card in Ontario that focused on environmental indicators and compiled a great deal of scientific data into one, concise, readable, document.
- Twenty-eight artists celebrated the designation of the Thames as a Canadian Heritage River (CHR) with paintings, quilts, fibre arts, photography and pottery. The show was called "River: A View of the Thames" and was held July 8-29 at the Ingersoll Creative Arts Centre.
- The Clean Water Project was launched in 2001. This tri-county program provided grants and technical advice to farmers and rural landowners in Oxford, Middlesex and Perth counties (most of the Upper Thames Watershed) to implement Best Management Practices around the farm such as soil erosion control and septic system repairs. Hundreds of projects were completed in the first year of the program.

## 2002

- The Thames Canadian Heritage River Committee hosted the 2nd annual *Thames River Symposium*, titled “Focus on the Thames,” on March 28th at the St. Marys Town Hall, St. Marys, Ontario.
- The new North Thames Walking Trail was completed, extending from Mitchell to Motherwell (14 km), the first trail in this region.
- The Thames Canadian Heritage River Committee published the first edition of the *Thames River Happenings* newsletter.
- The historic Thames Lighthouse received a much needed face lift, with funds raised locally in Lighthouse Cove, and overseen by the Lower Thames Valley Conservation Authority.
- The Middlesex Stewardship Committee and Resources Improvement Oxford improved river access at several locations in the watershed including Delaware, Woodstock and Wardsville. Signs thanking supporters and recognizing the Thames designation were installed.
- The Thames Talbot Land Trust acquired its first property, a 6 ha property along the South Thames in London, called Meadowlily Nature Preserve.
- Glenn Stott, member of the Thames Canadian Heritage River Committee, published *Greater Evils: The War of 1812 in Southwestern Ontario*. It provides an account of the events of the war in London and Western Districts of Upper Canada.

## 2003

- The Thames Canadian Heritage River Committee hosted the 3rd annual *Thames River Symposium* on March 28th at the Chatham Cultural Centre, Chatham, Ontario.
- The Thames Canadian Heritage River Plaque was installed at the Forks of the Thames in downtown London. A grant from the London Community Foundation was used to build a special stand for the bronze plaque, with in-kind donations from the City of London for the design and installation. Installation was delayed until major upgrades to the park system were completed.
- *The State of the Thames River Workshop* was held on Sept. 16th and 17th at Club Lentina’s in Chatham, Ontario. It was supported by the Lake Erie Lakewide Management Plan initiative and hosted by Environment Canada, Fisheries and Oceans Canada, Ontario Ministry of Agriculture and Food, Ontario Ministry of the Environment, Ontario Ministry of Natural Resources, Lower Thames Valley and Upper Thames River Conservation Authorities.
- The Thames Canadian Heritage River Committee published the *Thames River Happenings* newsletter, Volume 4.
- Richard Bain published a book of photographs called *The Thames, A Pictorial Journey*, with a launch at Museum London on April 26th.
- Zebra mussels were found for the first time in the Thames River.
- The Middlesex Natural Heritage Study was completed by the Upper Thames River Conservation Authority and County of Middlesex. The study identified significant woodlands at the county level for protection in the Official Plan.



## 2004

- The Thames Canadian Heritage River Committee hosted the 4th annual *Thames River Symposium* on March 26th at Goff Hall, Woodstock, Ontario.
- Volume 5 of the *Thames River Happenings* newsletter was published.
- Longwoods Road Conservation Area hosted River Day walks in June.
- Fisheries biologists from the UTRCA discovered small populations of Northern Brook Lamprey in a tributary of the Thames near London. This non-parasitic species had not been seen since 1931.
- *The Recovery Strategy for the Thames River Aquatic Ecosystem* was completed in 2004, led by the Upper Thames River Conservation Authority. This strategy identified key threats and actions needed to recover aquatic species at risk.
- A patch of Blue Ash trees was discovered on the banks of the Thames near London, the most northerly record in Canada.
- Dr. Michael Troughton of the Geography Department at the University of Western Ontario completed a database of more than 12,000 historic (pre-1914) commercial and institutional buildings in the Thames and surrounding watersheds.

## 2005

- The Thames Canadian Heritage River Committee hosted the 5th annual *Thames River Symposium* on April 15th at the Stratford Kiwanis Community Centre, Stratford, Ontario.
- On April 22nd (Earth Day), over 1,000 people participated in the *6th Annual Thames River Cleanup*.
- The Thames Talbot Land Trust secured its first conservation easement of the Eberhardt property, a combination organic farm and wooded property north of Stratford in the headwaters of the Thames River.
- On March 6th, the Royal Scots re-enactors marched from Strathburn to Battle Creek to hold a memorial service for those who died at Battle Hill on March 6, 1814.
- The Thames Canadian Heritage River Committee published Volume 6 of the *Thames River Happenings* newsletter.
- Two small weirs were removed from tributaries of the Thames to improve water quality and fish migration. The project was led by the UTRCA.
- The Town of Ingersoll created a new walking trail linking the Cheese Factory Museum and the Sports Hall of Fame to other trails along the South Thames River.

## 2006

- The Thames Canadian Heritage River Committee hosted the 6th annual *Thames River Symposium* on April 1st at Glencoe Presbyterian Church, Glencoe, Ontario. This was a workshop on Exploring the Heritage of the Thames Valley through its Arts and Culture. It brought together artists and historians from across the watershed.
- In December, the Thames Canadian Heritage River Committee and Community Heritage Ontario co-sponsored a Cultural Heritage Landscape workshop in St. Marys.

- Approximately 140,000 trees and shrubs were planted across the watershed by the Upper Thames River and Lower Thames Valley Conservation Authorities in 2006.
- The long-running *Faire at the Forks* in Chatham hosted its final event in the fall of 2006. Also known as Heritage Days, this weekend re-enactment of the War of 1812 and voyageur life was a huge success for many years.
- The Oxford Natural Heritage Study was completed by the County of Oxford and the UTRCA. The study used landscape scale analysis to identify significant woodlands for designation (protection) in the official plan.

## **2007**

- The Thames Canadian Heritage River Committee hosted the 7th annual *Thames River Symposium* on April 14th at Ursuline College High School in Chatham.
- The Upper Thames River Conservation Authority published its second set of *Watershed Report Cards*, tracking changes in environmental conditions since the 2001 report cards. Some improvements were seen in surface water quality and new information on groundwater conditions was added.
- The North Thames River Canoe Route brochure was updated by the UTRCA and posted online for the first time.
- A group of London artists and supporters paddled down the river, recreating a journey taken a century earlier by renowned artist Paul Peel and others, from the Forks of the Thames to the mouth at Lake St. Clair. The artists connected with numerous communities along the way including First Nations communities. Their journey, artwork and what they learned was shared with many groups throughout the watershed in the months and years following.
- The West Perth Thames Nature Trail and Wetlands opened to the public. This 5 km trail along the top end of the North Thames River near Mitchell provided a much needed river experience.
- Chatham historian Jim Gilbert published *Looking Back, The Thames River, Ontario*. The book contains many wonderful historical photos from personal collections throughout the watershed as well as current views.

## **2008**

- *The London Free Press* ran a 5 month series called *A River* covering a wide range of Thames River-related articles, videos, blogs, photos, etc. Editor Paul Berton wrote “It’s not traditional journalism or breaking news about death, destruction, crime celebrity, sex or corruption. But it is education and story-telling, and it’s all about our community.”
- The Thames Canadian Heritage River Committee published the last issue of the newsletter *Thames River Happenings* in the spring of 2008.
- In May, artist and teacher Kevin Bice and a group of 18 other artists launched *The River Project*, a book that illustrates their collective works (the artists had initiated this project two years earlier). The well-received book sold out quickly and the art toured several local galleries.
- The historic Springbank Dam in London was retrofitted, but an important mechanism broke when tested the first time, leaving it inoperable for an indeterminate amount of time.

## 2009

- A 168-page, full-colour guidebook, *The Thames River Watershed: A Heritage Landscape Guide* by Michael Troughton and Cathy Quinlan was published and launched in June. Some 500 copies were donated to watershed schools and libraries thanks to a grant from the Ontario Trillium Foundation. Numerous copies were sold locally. The pocket-sized book was popular with history buffs, geographers, students, and local residents. Sadly, the main author, Michael Troughton, died in 2007 before it was published.
- The annual *Thames River Cleanup*, a community volunteer program, celebrated its 10th year in 2009. The event, initiated by Perth County resident Todd Sleeper, had grown to numerous communities in the watershed, with over 1,000 people participating each year.
- City of London council approved the *Thames Valley Corridor Plan, Phase 2*, a long-range vision document and planning tool for sustaining the river's attributes, supporting environmental and economic vitality, tourism and local and regional recreation initiatives.

## 2010

- A water fountain called the “jet d'eau” was installed at the Forks of the Thames in London as an additional attraction to this important site. It was funded, in part, by a donation from local philanthropist Martha Blackburn.
- The Thames Canadian Heritage River Committee's ongoing project to erect bridge signs across the watershed stating *THAMES RIVER – A Canadian Heritage River* was finally launched in 2010. Signs were installed at nine river crossings in the municipality of Chatham-Kent, the most southerly of the counties in the Thames watershed, with financial support from the Lower Thames Valley Conservation Foundation and local municipalities.
- The Karen Schuessler Singers, a classical choir based in London, presented a show called *River: Reflections on the Thames* in May. The performance featured river-related songs.
- Wardsville, a small town on the lower Thames River, celebrated its Bicentennial in June and featured a quilt depicting the life of founder George Ward and others of that era, including many river-related blocks.
- A 25 km foot/mountain bike trail around Wildwood Reservoir in Wildwood Conservation Area near St. Marys was opened to the public.
- The Longwoods Road Conservation Area launched its Carey Carolinian Arboretum trail, an interpretive trail through a lovely Carolinian deciduous forest.

## 2011

- The City of London, UTRCA and other municipalities initiated a project called “The Thames River Clearwater Revival” to focus on water quality and quantity issues. An updated Thames River Water Management Plan was also initiated as part of the Revival.
- Three Thames River bridge signs were erected at three river crossings in the municipality of Dutton-Dunwich in Middlesex County.
- The Clean Water Project, administered by the UTRCA and funded by the municipalities, continued to fund hundreds of projects on farms in the Upper Thames watershed to protect surface and groundwater.

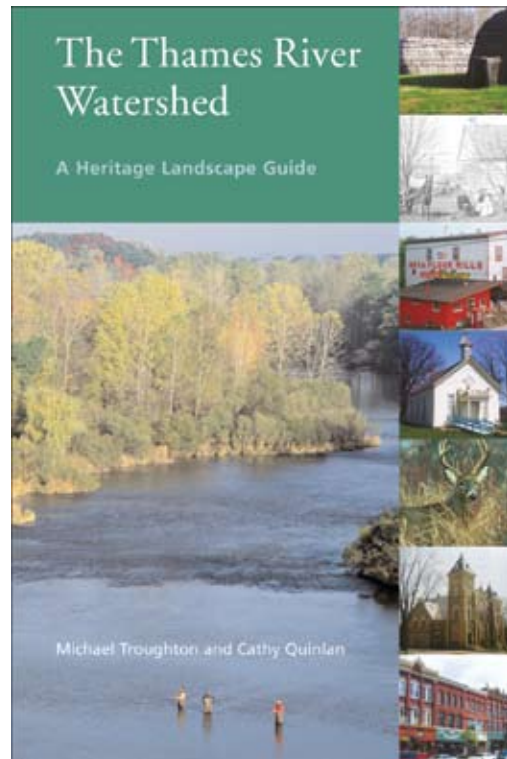
- In September, Doors Open London showcased many historical properties in and around the Thames River including the Coves and Museum London at the Forks. Doors Open Oxford has similar events.
- The Lower Thames Valley Conservation Authority celebrated its 50th Anniversary – 50 Years of Conservation – with events held in municipalities and conservation areas throughout the watershed. Many events highlighted the Thames as a Canadian Heritage River.

## 2012

- The Thames Talbot Land Trust acquired its 11th property, a woodland site near Wardsville, a short distance from the Thames River. This property was the third secured parcel in the area known as Skunk’s Misery, the most significant cluster of Carolinian woods in the Thames watershed.
- The UTRCA released its third set of *Watershed Report Cards* for 28 watersheds in the Upper Thames. Surface water quality conditions remained steady in 16 watersheds and improved in 12, compared with results five years earlier. Forest conditions also remained steady.
- The Longwoods Road Barn Quilt Trail was officially launched in 2012. This series of painted blocks from quilts, made by local volunteers and students, were mounted on barns and buildings along the 65 km section of Longwoods Road from the Tecumseh Monument near Thamesville to Delaware. The barn quilt project depicts sections of quilts illustrating how the War of 1812 impacted the lives of women and children.
- Approximately 90,000 trees and shrubs were planted through conservation authority forestry programs in 2012.



*The Thames Happenings Newsletter and various published books on the Thames.*



*The Thames Heritage Landscape Guide by Dr. Michael Troughton and Cathy Quinlan was published in 2009.*



*River cleanup days removes large volumes of garbage from the Thames each year.*



*Thames River Symposium 2004 in Woodstock.*



*Thames River Symposium 2003 walking tour in Chatham.*



*Thames River Bridge sign in Thamesville, Chatham-Kent.*



## Chapter 3. Natural Heritage Values since Designation

The Thames River was not nominated on its natural heritage values because of the presence of dams on the river system. However, the river and its watershed do possess an outstanding natural heritage that contributes to both its human heritage and recreational values. It is the natural heritage of the watershed that has supported the evolution of human heritage and recreational values.

The Thames watershed, with its temperate climate, highly productive soils, and abundant water supply, has attracted human habitation for over 10,000 years. The Thames was one of the first rivers formed following the retreat of the last glacier in Ontario. The upper branches of the river still flow through the ancient spillways. The lower river flows through flat plains of clay and sand, the result of thousands of years under glacial lakes.

The Thames River is the only major river in Canada located almost entirely within the Carolinian Life Zone, one of the most biologically productive eco-regions in Canada. The watershed provides habitat for several rare and endangered species of flora and fauna as well as one of the most diverse fish and freshwater mussel communities in Canada, resulting in outstanding opportunities for nature and scientific appreciation.

Changes over the last decade have been positive for river water quality. *Watershed Report Cards* produced by the Upper Thames River Conservation Authority have shown improvements in key indicators in many subwatersheds, despite continued population growth in the basin. These improvements can be attributed to ongoing rural stewardship programs, tree planting and naturalization projects, environmental regulations, and waste water treatment upgrades.

The table that follows provides additional detail on the condition of the river and the actions and changes that have taken place since 2000.

**Table 1: Natural Heritage Values since Designation**

<b>CHRS Natural Framework (2001) Themes &amp; Sub-themes</b>	<b>Natural Heritage Elements Description</b>	<b>Significant Actions, Research or Studies</b>	<b>Changes or Threats to Nomination Value(s)</b>
<b>1. HYDROLOGY</b>			
<b>1.1 Drainage Basins</b>	The Thames watershed is part of the Lake St. Clair/Lake Erie basin(s).	Lake-wide Management Plans (LaMP) are underway for Lakes St. Clair and Erie, led by Environment Canada, and the UTRCA is participating.	None
<b>1.2 Seasonal Variation</b>	The river tends to carry its largest flows in March and April (spring freshet) and lowest flows in July and August when evapo-transpiration, and evaporation are highest. Monthly precipitation is fairly uniform, at 60-90 mm per month, with about 1 m of precipitation annually.	The UTRCA added additional flow and weather stations to the watershed, as well as radar technology, to provide better and quicker weather and stream flow information. Western University professor Slobodan Simonovic of the Institute for Catastrophic Loss Reduction has been working on climate change models for the Thames region for several years.	Climate change is predicted to bring more extreme weather to the Great Lakes basin (more floods any time of year, hotter summers, less snow and thus reduced spring freshets). The lack of heavy spring flows may have negative consequences on aquatic life that rely on the scouring action of ice and water to maintain a healthy stream bed.
<b>1.3 Water Content</b>	Water quality ranges from fair to poor based on three indicators: <i>E. coli</i> , phosphorus, benthic organisms. Conservation Authorities have ongoing water quality monitoring stations, most in conjunction with the Ministry of Environment (i.e., the Provincial Water Quality Monitoring Network).	<i>Watershed Report Cards</i> released in 2001, 2007 and 2012 by the Upper Thames River Conservation Authority (UTRCA) consolidate, interpret and report conditions in a concise and understandable format for the public and other agencies. It is now easier to detect and report changes over time. The Lower Thames Valley Conservation Authority (LTVCA) will be releasing its first set of watershed report cards in 2013.	Overall, water quality has remained steady, despite a population increase. Water quality in some subwatersheds has improved over the last decade as a result of stewardship work, waste water treatment improvements, regulations, etc.



<b>CHRS Natural Framework (2001) Themes &amp; Sub-themes</b>	<b>Natural Heritage Elements Description</b>	<b>Significant Actions, Research or Studies</b>	<b>Changes or Threats to Nomination Value(s)</b>
<b>1. HYDROLOGY</b>			
<b>1.4 River Size</b>	The Thames is the second largest river in southwestern Ontario, but small in Canadian terms. At Thamesville (60 km from the mouth), discharges vary from 20 cubic metres per second (cms) in summer to 140 cms in March.	Additional flow monitoring stations have been added to the system over the last 10 years by the UTRCA with support from the Ministry of Natural Resources (MNR), to monitor high and low flow conditions.	None
<b>2. PHYSIOGRAPHY</b>			
<b>2.1 Physiographic Regions</b>	The upper basin is made up of silt and clay tills (Stratford and Oxford Till Plains), broken by several terminal moraines. The lower basin contains sand and gravel deposits formed under glacial lakes. Farther downstream are the tills of the St. Clair Clay Plain.	None	None
<b>2.2 Geological Processes</b>	<p>The ancient granitic Precambrian bedrock of the Canadian Shield is buried under 1500 m of younger sedimentary bedrock and another 30 m of overburden (till). The sedimentary bedrock is from the Upper and Middle Devonian Periods (black shale, grey shale and sandstone, and limestone).</p> <p>The Thames is not effective at illustrating geological phenomena due to the great depth of the bedrock and the gentle nature of the landscape. Glacial rebound is negligible.</p>	Active quarries exist at Beachville on the South Thames and St. Marys on the North Thames. Heritage buildings in parts of the watershed owe their charm to the use of local limestone.	None

<b>CHRS Natural Framework (2001) Themes &amp; Sub-themes</b>	<b>Natural Heritage Elements Description</b>	<b>Significant Actions, Research or Studies</b>	<b>Changes or Threats to Nomination Value(s)</b>
<b>2. PHYSIOGRAPHY</b>			
<b>2.3 Hydro-geology</b>	There was limited understanding of local groundwater levels, quality and movement until the Source Water Protection program began in 2000, following the Walkerton water contamination disaster.	Significant work has been completed on understanding local groundwater and drinking water resources through the Source Water Protection planning process undertaken by conservation authorities under the Ministry of Environment. Significant Groundwater Recharge Areas and Highly Vulnerable Aquifers have been mapped. In 2013 a Source Protection Plan will be completed. Water budget modelling has shown that about 60-70% of local streamflow comes from groundwater discharging into streams.	None
<b>2.4 Topography</b>	The topography is flat to rolling in upper watershed, flat in lower watershed.	None	None
<b>3. RIVER MORPHOLOGY</b>			
<b>3.1 Valley Types</b>	The Thames is a fluvial river valley, slightly entrenched in a gentle landscape made up of glacial till and clay and sand plains. Above the Forks, the branches of the Thames occupy former glacial spillways. Below the Forks, the Thames occupies a small valley of its own making, carved through soft glacial lake sediments.	The 2012/13 update to the Middlesex Natural Heritage Study will incorporate Significant Valley Lands using Digital Elevation Model technology to map the valleys.	None

CHRS Natural Framework (2001) Themes & Sub-themes	Natural Heritage Elements Description	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>3. RIVER MORPHOLOGY</b>			
<b>3.2 Channel Types</b>	<p>The Thames River takes on several channel patterns, but overall is best described as having a sinuous channel pattern or irregular meanders.</p>	<p>The main channels of the Thames have remained unchanged over the last decade, for the most part. Smaller tributaries have been altered over the decades in rural and urban areas.</p> <p>The UTRCA has classified all open watercourses in the upper Thames and found: 39% have been channelized, 35% are natural (mainly the larger rivers and streams), and 26% are buried. These statistics have not changed much in 10 years. This data came from the Drain Classification Project that began in 1999 with support from the Department of Fisheries and Oceans, combined with UTRCA Geographic Information Systems technology.</p>	<p>There continue to be petitions to put natural watercourses (often intermittent streams) under the Drainage Act, where they can be dredged, straightened or buried. In urban areas, streams can be altered by stormwater pond construction.</p> <p>Education and stewardship work by the conservation authorities attempt to mitigate these destructive practices. The UTRCA has had some success in working with drainage superintendents and consultants to bring back natural meanders to smaller drains that have been channelized in the past.</p>

<b>CHRS Natural Framework (2001) Themes &amp; Sub-themes</b>	<b>Natural Heritage Elements Description</b>	<b>Significant Actions, Research or Studies</b>	<b>Changes or Threats to Nomination Value(s)</b>
<b>3. RIVER MORPHOLOGY</b>			
<b>3.3 Channel Profile</b>	<p>Above the Forks, the North, Middle and South Thames occupy former glacial spillways. The broad valleys are about 1 km wide and up to 33 m deep. The river is confined by its valley. There are steep valley slopes or bluffs on at least one side, and gentle terracing on the other bank.</p> <p>Below the Forks to the Chatham-Kent County line, the valley is about the same width but only 23 m deep.</p> <p>Farther downstream, the river is generally not confined by its flat valley. Below Chatham, dykes have been constructed to control flooding of adjacent lands. The level of the river is higher than the surrounding land at the mouth at Lake St. Clair.</p>	The river and tributaries continue to be protected by regulations made under the Conservation Authorities Act.	None

CHRS Natural Framework (2001) Themes & Sub-themes	Natural Heritage Elements Description	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>3. RIVER MORPHOLOGY</b>			
<p><b>3.4 Fluvial Land-forms</b></p>	<p>The valley of the Thames River, like most river valleys in southern Ontario, can be classified as fluvial. Fluvial valleys are slightly entrenched in a gentle landscape made up of glacial till and clay and sand plains. They flow through materials deposited by meltwater of a glacier, not the river's own alluvial deposits.</p> <p>A variety of erosional and depositional forms can be found along the mid to upper Thames River including bank erosion, slumping, gullies, pools and riffles, and bars and islands.</p>	<p>Research on the Spiny Softshell Turtle by Scott Gillingwater and others at the UTRCA over the last 15 years has shown that gravel bars and islands are important turtle nesting sites. Natural erosion of banks is important to maintain these dynamic landform features.</p> <p>Aquatic habitat monitoring and mapping by the conservation authorities have provided a great deal of information on the presence/absence of pools and riffles throughout the river system. Many stream bed remediation projects have been undertaken to restore pools and riffles.</p>	<p>Attempts to mitigate man-made erosion through stewardship and vegetated buffer plantings should not impact natural fluvial landforms. The conservation authorities work in partnership with landowners, municipalities and community groups to do this type of erosion-control work.</p>



*Through the Clean Water Program, landowners are given advice and funding to repair erosion problems and other issues on farmland, such as this low berm.*

CHRS Natural Framework (2001) Themes & Sub-themes	Natural Heritage Elements Description	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>4. BIOTIC ENVIRONMENTS</b>			
<p><b>4.1 Aquatic Eco-systems</b></p>	<p>The Thames River sustains one of the most diverse fish communities in Canada. The river's complex system of interconnected springs, swales, ravines, streams and rivers provides a broad range of habitats for 93 fish species from 19 families, including at least 5 species with historic records only and 6 non-native species.</p> <p>In addition, there are 30 native species of freshwater mussels in the Upper Thames watershed, eight of which are Species at Risk.</p>	<p>Since 1999, the Upper Thames River Conservation Authority has undertaken extensive research and monitoring of the aquatic ecosystem, initially as part of the Drain Classification System project. Field data have been collected on channel descriptions, fish species and populations (via electro-shocking sampling), and benthic invertebrates.</p> <p>Also, in partnership with the Department of Fisheries and Oceans (DFO), freshwater mussels have been inventoried, resulting in the discovery of new species, as well as local losses of species.</p> <p><i>A Fisheries Management Plan</i> (<a href="http://www.thamesfishplan.ca">www.thamesfishplan.ca</a>) for the Thames was initiated in 2004. A Background Summary Report was prepared and public input meetings were held. The remainder of the work has stalled due to lack of funding.</p>	<p>The threats from new, non-native fish and mussel species are being monitored but no significant impacts are expected.</p>

CHRS Natural Framework (2001) Themes & Sub-themes	Natural Heritage Elements Description	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>4. BIOTIC ENVIRONMENTS</b>			
<b>4.2 Terrestrial Eco-systems</b>	<p>The vegetation of the Thames River basin is extremely diverse, primarily because it spans the Carolinian (deciduous) and Great Lakes-St. Lawrence (mixed) Forest Zones. In this largely agricultural watershed, woodland cover is low, around 15%.</p>	<p>Since 2000, there has been a great deal of improvement in the protection of terrestrial ecosystems. In 2003, the Middlesex Natural Heritage Study was completed. It identified significant woodlands in the county (at the centre of the Thames watershed) based on landscape-scale criteria. Over 80 woodlots were inventoried as well.</p> <p>In 2006, the Oxford Natural Heritage Study was completed (at the east end of the Thames watershed), providing similar information for Oxford County, as well as documenting aquatic conditions and categorizing watercourses.</p> <p>In addition, the conservation authorities and Ministry of Natural Resources (MNR) have invested in newer aerial photography and GIS technology to map woodlands, wetlands and meadows at a more detailed scale.</p> <p>The MNR has updated approximately 20 wetland files over the last eight years, most of them provincially significant wetlands.</p>	<p>Woodland cover is about 12% in the Thames watershed, below the target of 30% set by Environment Canada to sustain native plants and animal species. The amount of forest cover has not changed much in the last 10 years.</p> <p>Woodland/tree preservation bylaws are working, for the most part. However, Chatham-Kent, in the lower watershed, has no tree cutting bylaws and there may be more forest loss there.</p> <p>Fortunately, tree planting projects continue to grow, with the conservation authorities planting about 100,000 trees per year, and landowners planting more in addition.</p>

CHRS Natural Framework (2001) Themes & Sub-themes	Natural Heritage Elements Description	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>5. VEGETATION</b>			
<p><b>5.1 Significant Plant Communities</b></p>	<p>The flora of the Thames River basin is extremely rich and diverse as it spans two species-rich zones: The Carolinian and Great Lakes-St. Lawrence. The Carolinian Life Zone encompasses the lower Thames valley up to the London area. The Carolinian Zone is recognized as one of the most biologically significant and diverse regions in Canada, home to more than 2,200 species of vascular plants including 70 species of trees.</p>	<p>The Skunk's Misery Natural Area, made up of a series of large Carolinian woods and swamps in southwest Middlesex, is one of the most significant natural features in the Thames basin. Forest research is carried out here by MNR. The County of Middlesex has set up a Woodlands Advisory Committee to help oversee management of the publicly owned lands (additional lands are in private ownership).</p> <p>Sifton Bog in London, Canada's most southerly publicly-owned bog, was the subject of much study leading to the 2009 Conservation Master Plan by the UTRCA and City of London. Numerous researchers, especially from UWO, conduct research in the bog.</p> <p>The Canadian Wildlife Service continues to manage and protect the 244 ha St. Clair National Wildlife Area, part of the Lake St. Clair marshes near the mouth of the Thames. This Important Bird Area constitutes one of the most important staging areas for waterfowl on the Great Lakes. Marshes are now a rare plant community in the watershed.</p> <p>Tallgrass Prairie is one of the most endangered plant communities in Canada. There are a few remnants in the watershed. Groups such as Tallgrass Ontario have done considerable research and outreach over the last decade. Restoration with prairie plants (vs. reforestation) is now growing in popularity, thanks to efforts of Tallgrass Ontario, Stewardship Councils and Conservation Authorities.</p>	<p>Climate change will threaten plant communities across the globe, the Thames being no different. The diverse plant communities and rich soils of the region may buffer the impact of species shift.</p> <p>The invasive Emerald Ash Borer entered the area within the last 10 years and has now been found in many parts of the Thames Watershed. Ash species make up about 20% of forests, so the loss of these trees will be devastating.</p> <p>Fortunately, there is high species diversity in the area, so shifts in the canopy makeup will occur to fill the void. The risk of non-native invasive plants taking the place of the ash is a threat.</p>



CHRS Natural Framework (2001) Themes & Sub-themes	Natural Heritage Elements Description	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>5.VEGETATION</b>			
<p><b>5.2 Rare Plant Species</b></p>	<p>There are at least 22 vascular plant species (with records from the Natural Heritage Information Centre from 1984 to present) that are designated under COSEWIC and/or SARO in the Thames River watershed. An additional 70 species have S-Ranks (given by MNR) of S1-S3, meaning they have very low populations in Ontario.</p> <p>Some of the better known rare plants include Green Dragon, Blue Ash, Golden Seal, Black-gum and Wood-poppy. Most of these species are Carolinian and reside at the northern limit of their ranges.</p>	<p>Blue Ash, a species of Special Concern in Ontario, has a good foothold along the Thames River. Currently, a recovery plan and status report is being written for Blue Ash. Blue Ash may be less susceptible to the Emerald Ash Borer.</p> <p>The Wood-poppy Recovery Team formed in 1997 and undertook research for seven years on the Wood-poppy (<i>Stylophorum diphyllum</i>). It is found in only three locations in Canada, two of which are in the valley of the Thames. A Recovery Strategy was posted in 2006, written by Dr. Jane Bowles of Western University.</p> <p>The Regionally Rare Plant List for Middlesex County was updated in 2005 (one of the few to be done) and contains 360 species. The Thames is the largest watershed in Middlesex County.</p>	<p>The Endangered Species Act protects designated species and their habitats.</p> <p>However, over-harvesting of forests, fragmentation, and continued nibbling away at forest edges threaten the ability of woodlands to maintain the native flora.</p> <p>Work is still needed to change bylaws in favour of basal area cutting over diameter limit cutting to preserve the integrity of the remaining woodlands where rare species are found.</p>

CHRS Natural Framework (2001) Themes & Sub-themes	Natural Heritage Elements Description	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>6. FAUNA</b>			
<p><b>6.1 Significant Animal Populations</b></p>	<p>The Thames watershed supports a diverse mammal population. Approximately 36 species of mammals have been recorded in the watershed including aquatic and semi-aquatic species such as beaver, mink, star-nosed mole, muskrat and long-tailed weasel. The lack of large tracts of woodland or natural habitat in the watershed limits the introduction of larger mammals.</p> <p>There are about 160 species of birds that breed in the watershed according to the <i>1984-1987 Atlas of the Breeding Birds of Ontario</i>.</p> <p>There are approximately 12 species of amphibians and 29 species of reptiles in the watershed. The “hot spot” for many of these species is the Skunk’s Misery forest complex in Southwest Middlesex.</p>	<p>Several generalist mammal species have shown increases in population densities over the last decade, most notably white-tailed deer, beaver, and coyote. The over-abundant deer population has caused problems in some habitats due to over-browsing and the loss of young trees.</p> <p>Research into white-tailed deer numbers and impacts on Environmentally Significant Areas was undertaken by consultants for the City of London in 2009. In 2008, MNR released a <i>Strategy for Preventing and Managing Human-Deer Conflicts in Southern Ontario</i>.</p> <p>Beaver populations have also made a noticeable increase over the last decade, based on calls to conservation authorities and MNR and evidence of tree felling.</p> <p>More recently, increases in coyotes, especially in the London area, have been noted. The coyotes are likely filling a void in large carnivores in the area.</p> <p>The <i>2001-2005 Atlas of the Breeding Birds of Ontario</i> provides extensive data on bird species, breeding and population trends. The data have not yet been mined/ synthesized for the Thames watershed (as a subset of the Ontario data).</p>	<p>Bats are experiencing white-nose syndrome North America-wide and this threatens their survival.</p> <p>The decline of many grassland bird species is a North American-wide issue as well, owing to the loss of pasture land and meadows.</p> <p>The lack of large forest tracts in southwestern Ontario is also a problem for forest interior birds.</p>

CHRS Natural Framework (2001) Themes & Sub-themes	Natural Heritage Elements Description	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>6. FAUNA</b>			
<p><b>6.2 Rare Animal Species</b></p>	<p>Reptiles at risk include the Spiny Softshell Turtle, Snapping Turtle, Spotted Turtle and Eastern Hognose Snake and Queen Snake.</p> <p>The American Badger and Woodland Vole are the only mammal species at risk in the watershed.</p> <p>There are 14 designated species-at-risk bird species in the watershed including Peregrine Falcon, Bald Eagle, Hooded Warbler and Black Tern.</p>	<p>Extensive research on the Spiny Softshell Turtle in the Thames River has been carried out by Scott Gillingwater, UTRCA, for over 15 years. Nesting habitat improvements, including collecting, incubating and releasing healthy hatchlings, have been successful in maintaining population levels.</p> <p>The Ministry of Natural Resources and volunteers have been gathering information on American Badgers in southwestern Ontario for the last 10 years. Any possible sightings of badgers are followed up. Very limited records are available thus far.</p> <p>Nature London, a local naturalist club, has been monitoring a Peregrine Falcon nest at a high rise building in downtown London since 1996. Banding, nest monitoring and tracking take place each summer, though fledglings are not always produced.</p>	<p>The lack of large tracts of natural habitat will continue to put some species at risk. However, many groups are working to increase vegetation cover in strategic areas and protect the “hot spots.”</p>



*Spiny Softshell turtle hatchlings are released to the river after being hatched in a protective setting by researchers at UTRCA, to bolster the population of this endangered reptile.*



*The Ministry of Natural Resources studies Walleye in the Thames as part of their Great Lakes studies.*



*Students and UTRCA staff work on a bioengineering structure on Victoria Lake to protect the bank from erosion.*



*The Thames Talbot Land Trust celebrated the acquisition of the Five Points Woods Driedger Tract near Ingersoll in 2009.*



*The Fairfield Museum planted a tallgrass prairie on its grounds to restore some of this endangered habitat, a part of local heritage.*



*The UTRCA's annual Earth Day tree planting event is one of numerous projects across the watershed each spring.*

## Chapter 4. Cultural Heritage Values since Designation

The Thames River watershed possesses great cultural heritage themes based on its long sequence of human occupation extending back 11,000 years. Six distinct periods can be identified including:

- Pre-contact Aboriginal
- Initial European contact and conflict
- Pioneer European settlement
- Mature agrarian
- Evolving urban
- Present day integrated city and countryside

The Thames, with its abundant fish and game and connection to the Great Lakes, provided a focus for each group in the sequence. Agriculture was first practiced in Canada in the Thames watershed between 500 and 1650 A.D. by Aboriginal people. In the 1700s, the river attracted French fur traders and European settlers, as well as First Nation peoples displaced from the U.S.

Following the role of the Thames valley as a major theatre in the War of 1812, pioneer settlement developed into the first successful commercial agrarian society in Canada, based on the wheat staple. In turn, many of the watermill sites provided the basis for industrial and urban development, including the major riverine cities of Chatham (an early river port and ship-building centre), London, Stratford and Woodstock as well as a network of smaller towns and villages.

Among those whose names are linked to the Thames River are the Shawnee Chief Tecumseh, John Graves Simcoe, Timothy Eaton, Frederick Banting, Thomas Talbot, John Carling, John Labatt, Amelia Harris, Paul Peel, Adam Beck, and Arthur Meighen. More recently, Robertson Davies of Thamesville, Tom Patterson of the Stratford Festival on the banks of the Avon, and Silken Laumann, Kathleen Heddle and Marnie McBean at the National High Performance Rowing Centre on Fanshawe Lake are internationally significant names.

The cultural heritage values of the Thames River watershed continue to meet the integrity guidelines. The Thames River valley possesses an amazing similarity to its appearance 200 years ago. The history of the Thames has been preserved in many museums and historic sites located throughout the watershed. Many of the first private and public buildings established in the watershed exist today. As well, numerous roads, bridges, and communities owing their origins to the river remain along its shores.

The biophysical quality of the water is suitable for non-contact recreation such as boating and is continually being monitored and improved.

Table 2 provides additional detail about the cultural heritage values since designation in 2000.

**Table 2: Cultural Heritage Values since Designation**

CHRS Cultural Framework (2000)	Cultural Heritage Value(s)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>1. RESOURCE HARVESTING</b>			
<p><b>1.1 Fishing</b></p>	<p>First Nations people, pioneers, and present day citizens have fished the Thames River and its tributaries for a wide variety of fish species.</p> <p>Commercial fishing in the lower reaches of the river took place in the late 1800s. Today, recreational anglers continue to boast of the Thames River as a prime fishing ground.</p>	<p>Numerous fishing clubs and individuals continue to use the river for recreational fishing throughout the entire watershed.</p> <p>In 2010, the Thames River Anglers and UTRCA undertook a Rainbow Trout tagging study. A fish tagged in Komoka Creek near London was caught four months later in Lake Erie near Rondeau Provincial Park, providing evidence of the river's connection to the lakes.</p> <p><i>The Thames River Fisheries Management Plan</i> (<a href="http://www.thamesfishplan.ca">www.thamesfishplan.ca</a>) was initiated in 2004. A Background Summary Report was prepared and public input meetings were held. The remainder of the work has stalled due to lack of funding.</p> <p>The UTRCA has conducted extensive fish monitoring over the last 15 years and has a detailed database of fish species by location and habitat conditions.</p>	None

CHRS Cultural Framework (2000)	Cultural Heritage Value(s)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>1. RESOURCE HARVESTING</b>			
<b>1.2 Shoreline Resource Harvesting</b>	Extraction of aggregates near the valley of the Thames continues to take place in a few locations in the watershed, namely St. Marys (limestone quarry), Beachville (lime), and north London (gravel).	<p>The St. Marys quarries continue to be a significant source of jobs and resources for the area. The old St. Marys Quarry continues to be a popular public swimming venue, located in a former quarry just east of the Thames River.</p> <p>The Beachville quarries have the purest, deepest, and most uniform deposits of limestone (98% calcium carbonate) in the country, and will likely continue quarrying here for many decades.</p> <p>The London area gravel pits are depleting. Within Fanshawe Conservation Area, two former gravel pits are being naturalized using innovative techniques.</p>	None
<b>1.3 Extraction of Water</b>	Historically, the Thames was the main source of water for domestic and industrial uses. Today, no community relies on river water for drinking water because quantity and quality are not sufficient.	<p>The UTRCA and LTVCA operate numerous flow stations throughout the watershed to monitor water levels, to ensure there is adequate supply. The conservation authorities participate in Ontario's Low Water Response System and issue Level 1, 2 or 3 notices when conditions warrant.</p> <p>The Ministry of the Environment administers the Permit to Take Water Program. Based on the number of permits, the major uses are: agricultural (33%), water supply (24%), commercial (17%), and industrial (10%).</p>	None

CHRS Cultural Framework (2000)	Cultural Heritage Value(s)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>2. WATER TRANSPORT</b>			
<b>2.1 Commercial Transportation</b>	<p>Although the Thames is a river of modest size and flow, its lower reaches from Chatham to Lake St. Clair provided opportunity for various types of early vessels including sailing vessels and steamships to transport commercial goods, grains, people and military supplies.</p> <p>For the last several decades, this stretch of the river is used primarily by pleasure craft.</p>	None	None
<b>2.2 Transportation Services</b>	<p>Historically, the stretch of the Thames from Chatham to Lake St. Clair was used to transport people and goods. In the early 1800s, passengers (and their wagons) preferred to travel by steamer between Chatham and Sandwich (Windsor) until the rail and road network developed in the mid 1800s.</p> <p>Today, this area is used primarily by pleasure craft.</p>	None	None
<b>2.3 Exploration &amp; Surveying</b>	<p>The ability to use canoes on the river was important to early Aboriginal settlement which, in turn, prompted European exploration in the watershed.</p> <p>When Lieutenant Governor John Graves Simcoe arrived at the Thames in 1792 and 1795, the navigability of the river allowed only small boats and rafts to travel down river from what is now Woodstock to London.</p> <p>One of the earliest reports relating to navigation on the river was written in 1793 by Patrick McNiff, Deputy Surveyor, who surveyed the river beginning at the mouth to the Forks (now London).</p>	None	None



CHRS Cultural Framework (2000)	Cultural Heritage Value(s)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>3. RIPARIAN SETTLEMENT</b>			
<p><b>3.1 Siting of Dwellings</b></p>	<p>Human occupancy in the watershed dates back to the Middle Woodland Period (300 BC to 800 AD) when many large groups occupied seasonal sites along the Thames in spring and summer. Later, following the appearance of corn, permanent settlements appeared on the fertile valley soil.</p> <p>As Europeans immigrated to the area, they often chose land bordering the Thames River as it was conducive to agriculture, industry, trade and travel.</p>	<p>Many of the original houses still exist along the river system throughout the watershed.</p> <p>Eldon House, London's oldest remaining house, was built in 1843 by Captain John Harris overlooking the North Thames River just above the Forks. It still operates as a museum and park with ongoing programming.</p> <p>Ska-Nah-Doht Village and Museum in Longwoods Road Conservation Area maintains three First Nations log cabins from three local Thames settlements (Oneida, Munsee-Delaware and Chippewa).</p>	<p>Occasionally, historic buildings are threatened with demolition because of the costs of upkeep, etc. Some are preserved, some are not.</p> <p>Locust Mount, a historic London home built in 1854 on the North Thames River, was left vacant. It was vandalized and subsequently torn down a few years ago.</p> <p>An historic former church at 275 Thames Street in London, built in 1848 by American slaves who fled to Canada along the Underground Railroad, came into the media in late 2012, threatened with demolition. Supporters are looking for ways to move and preserve it, and the outlook is promising.</p>

CHRS Cultural Framework (2000)	Cultural Heritage Value(s)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>3. RIPARIAN SETTLEMENT</b>			
<p><b>3.2 River-based Communities</b></p>	<p>Virtually all of the major and minor nucleated settlements in the watershed have grown up along the river.</p> <p>Most European settlements, especially Chatham, began and grew because of the river's transportation opportunities.</p>	<p>Many cities are trying to revitalize their river connections. For many years, Chatham has had a downtown revitalization plan that includes the water front and docks.</p> <p>The City of London recently approved the <i>Thames Valley Corridor Study</i> as part of their Re-think London Official Plan update. The study takes a holistic view of the river corridor through the city with an aim of preserving and enhancing natural, cultural and recreational values. London has also undertaken a major face lift of the Park at the Forks in the last 10 years.</p> <p>The Town of St. Marys passed a heritage designation on the main street that leads from the North Thames River.</p>	<p>No major changes have occurred in the last decade. However, many small rural communities struggle to stay alive as the population shifts to larger urban centres.</p>

CHRS Cultural Framework (2000)	Cultural Heritage Value(s)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>3. RIPARIAN SETTLEMENT</b>			
<p><b>3.3 River-influenced Transportation</b></p>	<p>Historically, the Thames River was the key to entering the interior of the province from the Detroit area. As Aboriginal paths followed the river, they allowed for valuable and quick routes which promoted settlement.</p> <p>For example, above the Moravian First Nation settlement, a blazed Aboriginal trail enabled settlers to reach Delaware through the “long woods,” now known as Longwoods Road (formerly Hwy 2).</p> <p>Dundas Street, Oxford County’s first surveyed road, also followed an old Aboriginal trail. It was designed as a military road with a garrison town at each end to move military supplies to Lake St. Clair via the Thames River.</p>	<p>Longwoods Road (County Road 2 and formerly Hwy 2) through Middlesex and Chatham-Kent is still a major road that connects communities such as Kent Bridge, Thamesville, Melbourne and Delaware from Chatham to London on the north side of the Thames River.</p> <p>Dundas Street remains another important east-west road in the Thames watershed, connecting London to Dorchester, Ingersoll, Woodstock and Brantford.</p> <p>New bridge crossings (not reconstructions) are rare, but in the last 10 years there have been two new crossings: the Oxford Street Extension bridge over the Thames in west London and a bridge over the South Thames in the Town of Dorchester. The bridge it replaced was left as a foot bridge.</p>	None

CHRS Cultural Framework (2000)	Cultural Heritage Value(s)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>4. CULTURE &amp; RECREATION</b>			
<b>4.1 Spiritual Associations</b>		<p>In 2012, the Museum of Ontario Archaeology in London displayed “The Native Women’s Trail of Tears Quilt.” It tells the story of First Nations women and families from the Thames First Nations and area, many of whom fought in defence of Canada from American invaders during the War of 1812.</p> <p>Ska-Nah-Doht Village and Museum holds a <i>Nightwalk with the Spirits</i> each summer.</p> <p>In downtown Chatham, a lantern-guided Spirit Walk is held each fall, focusing on the historic district near the river.</p>	None

CHRS Cultural Framework (2000)	Cultural Heritage Value(s)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>4. CULTURE &amp; RECREATION</b>			
<b>4.2 Cultural Expression</b>	The Thames River is featured in many historical literary works from journals of early pioneers and travellers, to paintings by important 19th and 20th century artists. These books and paintings allow historians to piece together various components of the watershed's natural and human heritage.	<p>Artistic expression of the river continues today. For example, a multi-community effort that included three local First Nations produced the Longwoods Barn Quilt Trail to commemorate the War of 1812 women. Barn quilts, brightly painted 8'x8' replicas of actual fabric quilt squares have been installed on barns, businesses and in gardens along the Longwoods Trail / Road. Each painting has a story that is historically significant for the area. This "art corridor" officially opened in 2012.</p> <p>In 1880, William Lee Judson along with Paul Peel and others, made a canoe trip from London to Lake St. Clair and wrote <i>Kuhleborn, a Tour of the Thames, Written and illustrated by Professor Blot</i>. In 2007, a group of London artists, naturalists and paddlers re-created the canoe trip. The artists connected with numerous communities along the way including First Nations communities. Their journey, artwork and what they learned were shared with many groups throughout the watershed in the months and years following.</p> <p>Art groups in numerous communities have been inspired to produce river-related art shows, musical events, and photographic books since 2000.</p>	None

CHRS Cultural Framework (2000)	Cultural Heritage Value(s)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>4. CULTURE &amp; RECREATION</b>			
<p><b>4.3 Early Recreation</b></p>	<p>In the mid-1800s, rowing and canoeing were the most common forms of recreational boating. Regattas in London and Stratford (Avon River) were enjoyed by men and women.</p> <p>It is believed the first game of baseball was played in 1838 next to the South Thames in the village of Beachville. In nearby London, the London Tecumseh's ball team first played ball in Tecumseh Park in 1877. Renamed Labatt Park in 1936, it is London's oldest existing sports facility and believed to be the oldest baseball grounds in continuous use in North America. It is located next to the North Thames River.</p> <p>Lawn bowling was another popular form of early recreation on riverside lands, attracting elitist groups.</p>	<p>Today, rowing is concentrated at Fanshawe Reservoir. It is the site of the Women's High Performance Rowing Centre. Regattas still occur regularly, though with school teams rather than the general public.</p> <p>Several canoe clubs still exist in the watershed and many recreational canoeists use the river.</p> <p>Labatt Park (baseball field) is still in use in London today. The Canadian Baseball Hall of Fame is located in St. Marys and has undergone upgrades recently.</p> <p>Many lawn bowling clubs still exist across the watershed, especially in London and Chatham, attracting citizens of all ages.</p>	None

CHRS Cultural Framework (2000)	Cultural Heritage Value(s)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>5. JURISDICTIONAL USES</b>			
<p><b>5.1 Conflict &amp; Military Associations</b></p>	<p>Of particular historic significance is the role of the Thames in the military events of the early 19th century, especially in the War of 1812. The Battle of Moraviantown took place on the shores of the Thames near Thamesville. It was this battle that led to the death of the Shawnee Chief Tecumseh in 1813.</p> <p>The Battle of Longwoods took place on March 4, 1814 near present day Wardsville.</p>	<p>A large monument to Tecumseh is maintained near the battle site on Longwoods Road. A cairn and plaque monument are also maintained at Battle Hill in memory of the Battle of Longwoods. Members of the Kent Military Re-enactment Society continue to conduct research into the names of the men who died and will be placing their names on plaques.</p> <p>Events commemorating the Bicentennial of the War of 1812-14 occurred in 2012 and will continue into 2014. In August 2012, Fanshawe Pioneer Village held a Fanshawe Frolic Dance Weekend, focusing on the music and dance of 1812, including costume ball and period tea. In the fall of 2013, a re-enactment of the Battle of the Thames at the Tecumseh monument on Longwoods Road is planned.</p>	None
<p><b>5.2 Boundaries</b></p>	Not applicable		None

CHRS Cultural Framework (2000)	Cultural Heritage Value(s)	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>5. JURISDICTIONAL USES</b>			
<p><b>5.3 Environmental Regulation</b></p>	<p>Spring flooding was a regular occurrence along the Thames after the forests were cleared for settlement in the mid 1800s.</p> <p>In 1946, the <i>Conservation Authorities Act</i> was passed and in 1947 the Upper Thames River Conservation Authority (UTRCA) was formed to control flooding and undertake stewardship programs such as floodplain regulation, reforestation and wetland acquisition.</p> <p>The Lower Thames Valley Conservation Authority (LTVCA) was formed in 1964 and work began on dykes on the lower river. One of the first actions of the LTVCA was to implement <i>Fill, Construction, and Alteration of Waterways Regulations</i> (Ontario Reg. 170/90).</p> <p>Sewage in the river has been a long-standing problem. Significant advancement in sewage treatment and enforcement in the last 40 years has resulted in significant water quality improvements in the Thames system.</p>	<p>Since the early years, conservation authorities have increased their role in watershed management. Authorities now have extensive tree planting programs, conservation services for farmers and landowners, and environmental education programs. They also maintain the dams and administer the <i>Conservation Authorities Act</i> to limit development in the floodplain and on hazard lands and wetlands.</p> <p>Conservation Authorities have partnership agreements with the Department of Fisheries and Oceans to review projects that may affect fish habitat.</p> <p>The Provincial Policy Statement has played a large role in regulating development of natural lands as well. Natural Heritage Studies in Middlesex and Oxford Counties have been undertaken to identify significant woodlands for protection in Official Plans.</p> <p>The Ministry of the Environment monitors and regulates most of the sewage treatment plants to ensure they meet strict guidelines. All of the large cities in the watershed have tertiary treatment facilities and are now rarely a main source of pollution in the Thames.</p>	<p>In 2012, the federal government changed the Navigable Waterways Act and now the Thames is no longer classified as a navigable waterway. It is unclear what the implications of this change will be.</p> <p>Recent changes to the Federal Fisheries Act and downsizing of DFO will affect partnership agreements with conservation authorities but the extent of the changes are not known at this time.</p>





*Cabins originally from the three First Nations along the Thames (Oneida, Munsee-Delaware, and Chippewa) were restored recently and are on display at Ska-Nah-Doht Village and Museum.*



*The Battle of Longwoods is re-enacted each spring at Longwoods Road Conservation Area.*



*The Longwoods Barn Quilt Trail commemorates the War of 1812 women.*



*The Flood of 1937 and other floods spurred the creation of the Upper Thames River Conservation Authority in 1947 and the Lower Thames Valley Conservation Authority in 1964.*



*This Thames Tree was carved by local artists and is on display in the London Airport.*



*The Thames Lighthouse at Lighthouse Cove on Lake St. Clair received repairs in 2002.*



## Chapter 5. Recreational Values since Designation

The Thames River supports a large range of outdoor recreational activities. It is this diversity of recreational activities, combined with national calibre attractions such as the Stratford Shakespearean Festival and the National High Performance Rowing Centre at Fanshawe Conservation Area, which make the Thames unique.

Examples of this recreational diversity include such forms of boating as canoeing, kayaking, power-boating and yachting.

The major hiking trails in the watershed include the Thames Valley Trail and the Avon Trail; both connect to other trails including the provincially famous Bruce Trail. Multiuse urban trails for walking, cycling, and roller-blading are found along the river in numerous urban centres. Two mountain biking/hiking trails have been launched at conservation areas in the upper Thames in the last 10 years including the 21 km Fanshawe Lake Trail and the 25 km Wildwood Trail.

The extremely diverse fish community in the Thames River system provides anglers with choice fishing opportunities.

The unique flora and fauna of the Carolinian Life Zone provide excellent amateur and scientific natural study for the many naturalist clubs in the watershed, including Nature London (formerly McIlwraith Field Naturalists), the oldest naturalist club in Canada.

Heritage appreciation is strong and includes Iroquoian Villages (e.g., Ska-Nah-Doht), pioneer villages (e.g., Fanshawe), military re-enactments, and tourist attractions including powwows, local festivals and fairs. Not only does the Thames provide opportunities for over half a million watershed residents, it attracts national and international audiences as well.

The water quality of the Thames River and its tributaries is suitable for many non-contact recreational activities.

Table 3 summarizes some of the recreational values and recent changes since designation.

**Table 3: Recreational Values since Designation**

Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>1. BOATING</b>			
<b>1.1 Whitewater Canoe, Kayak &amp; Raft</b>	Not applicable	Not applicable	Not applicable
<b>1.2 Extended Canoe Tripping (motor &amp; non-motor)</b>	Extended canoe tripping on the Thames is not a common activity, though occasionally people do plan trips from the London area down to Lake St. Clair. There are a limited number of places/parks to stay along the way.	None	None
<b>1.3 Day Paddling &amp; Rowing</b>	<p>Recreational canoeing in spring and summer is a popular activity throughout the watershed. Depending on water levels, numerous day trips are possible on the main Thames as well as the North, Middle and South Branches. Low water levels in summer often limit paddlers to lower sections of the river.</p> <p>Rowing is limited to the reservoirs. In 1986, London's Fanshawe Reservoir was chosen as the site of the women's High Performance Rowing Centre, one of only two training centres in Canada for national and Olympic athletes.</p> <p>Sailing also takes place only on the reservoirs. The Fanshawe Yacht Club has a long history of sailing on Fanshawe Reservoir.</p>	<p>The UTRCA and LTVCA maintain brochures on canoeing specific reaches of the river. These brochures have been updated in the last 10 years and are now available online on the authority websites.</p> <p>The UTRCA provides current flow data on their website with specific information on flows for paddlers. This feature was added in 2008.</p> <p>The High Performance Rowing Centre on Fanshawe Lake continues to train athletes and hosts numerous regattas each year.</p> <p>Novacraft Canoes operates a store in London and rents canoes. Most of the large conservation areas rent canoes for use in the reservoirs.</p> <p>Dragonboat racing has become a popular event on reservoirs throughout the watershed.</p>	<p>The reservoir above Springbank Dam in London had been a popular spot for the London Canoe Club and London Rowing Club for many years. However, the dam has been inoperable for several years due to technical and legal issues. Rowers and canoeists have found other nearby areas in the Thames watershed to enjoy their sport.</p>

Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>1. BOATING</b>			
<b>1.4 High Speed Boating</b>	Not applicable	Not applicable	Not applicable
<b>1.5 Motorized Pleasure Cruising/ Houseboats</b>	The 30 km stretch of river from Chatham to Lighthouse Cove on Lake St. Clair is the focus of an active pleasure boating industry, used by both American and Canadian recreationists.	Some 915 m of serviced docks still operate in the heart of Chatham, open to both power boats and sailing vessels. Several marinas are located along the river and at Lighthouse Cove.	Dead trees and debris have been clogging the Thames River mouth for many years. The material moves down the river and settles out in the shallow area at the mouth. The boating hazard it poses may be a reason for the drop in boating traffic coming up river. The community continues to seek funding and advice to clear the debris.
<b>1.6 Commercial Tour Boats</b>	Commercial tour boats are limited to the reservoirs. Passenger boat tours on Lake Victoria (Avon River tributary) in Stratford take visitors for short tours of the man-made lake in this picturesque theatre town. The line of cruising vessels named <i>The Juliet</i> have been cruising up and down the Avon River since 1916.	<i>The Juliet</i> boat tours are still popular in Stratford.	The Princess Cruise Lines in Springbank Park closed down about 10 years ago. It had operated for many years, taking passengers on short trips from the park to the Forks in summer when Springbank Dam was operating.

Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>2. ANGLING</b>			
<b>2.1 Day Angling</b>	Day angling is very popular throughout the watershed. The Thames River and its tributaries are easily accessible to thousands of local residents. The Canada Land Inventory has identified opportunities for angling or viewing sport fish along the entire length of the river.	There continues to be approximately six fishing clubs in the watershed where anglers can get together, fish and share information. Over the last decade, there have been some improvements to river access at locations such as Delaware Conservation Area, and Greenway and Harris Parks in London, thanks to stewardship councils and others. Many fishing clubs work on education and fish habitat restoration and enhancement projects in partnership with MNR and the conservation authorities.	None
<b>2.2 Weekend Angling</b>	Not applicable	Not applicable	Not applicable
<b>2.3 Extended Angling Vacation</b>	Not applicable	Not applicable	Not applicable
<b>2.4 Fly Fishing</b>	Fly fishing is popular throughout the watershed, though less common than line fishing. There is a fly fishing club based out of London.	None	None

Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>2. ANGLING</b>			
<b>2.5 Ice Fishing</b>	Ice fishing for walleye is popular amongst Thames River anglers but limited to locations such as the mouth of the Thames and the reservoirs of Wildwood, Fanshawe and Pittock Conservation Areas.	The UTRCA does not test ice conditions on the reservoir, so anglers must do their own precautionary testing.	Increasingly mild winters limit the amount of ice fishing that is feasible in this part of southwestern Ontario.
<b>2.6 Specific Fish Species</b>	Popular game fish include the following: smallmouth and largemouth bass, rock bass, yellow perch, northern pike, trout, pumpkinseed, carp, white sucker, walleye, bullhead and black crappie.	<p>For many years the Ministry of Natural Resources conducted walleye population studies near Jeanette's Creek in the lower Thames.</p> <p>The UTRCA has a fish monitoring program that documents and tracks fish species and abundance annually.</p> <p><i>A Fish of the Thames</i> poster was produced in 2003 and updated in 2008 to share knowledge of species and conditions in different regions of the river. It was produced by the conservation authorities and DFO and is available online.</p>	None

Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>3. WATER CONTACT / CONTENT</b>			
<b>3.1 Swimming</b>	<p>There are swimming beaches at Wildwood Conservation Area Reservoir and Pittock Conservation Area Reservoir.</p> <p>People may swim at other undesignated locations throughout the watershed, but it is not a popular activity due to sporadically high bacteria levels and low flow summer conditions.</p>	<p>The conservation authorities, in partnership with the Ministry of the Environment and the Health Units, continue to sample and test surface water at numerous stations throughout the river system. The Thames River has marginal quality for swimming due to periodic spikes in fecal coliform bacteria, though conditions are improving with the implementation of stewardship practices and sewage treatment plant upgrades throughout the watershed.</p>	<p>The beach at Fanshawe Reservoir was closed permanently in 2010 due to ongoing turbidity problems, a common situation in man-made reservoirs.</p>
<b>3.2 Water Skiing</b>	Not applicable	Not applicable	Not applicable
<b>3.3 Snorkel/Scuba</b>	Not applicable	Not applicable	Not applicable



Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>4. WATER-ASSOCIATED ACTIVITIES</b>			
<b>4.1 Trail Use (hiking, walking, cycling)</b>	<p>The Thames Valley Trail (TVT) is the longest continuous trail in the watershed at 109 km. The TVT links to the Avon Trail, a 100 km trail that passes through Stratford and joins the Grand Valley Trail.</p> <p>In addition, there are numerous other riverside trails in communities throughout the watershed, including multiuse pathways in London, Stratford, Mitchell, St. Marys and Chatham.</p>	<p>In the last 10 years, the UTRCA developed and opened hiking/mountain biking trails around Fanshawe Reservoir (21 km) and Wildwood Reservoir (25 km). Both are very popular.</p> <p>London's 40 km long Thames Valley Parkway multiuse trail has seen several improvements and extensions over the last 10 years. Future extensions are planned along branches of the Thames River.</p> <p>The Oxford Trails Council was formed in 2006 to develop trails along the South Thames and near Woodstock. Thus far, 6 km of trails have been opened with more planned for the near future.</p>	None
<b>4.2 Camping</b>	There are approximately 18 private campgrounds in the watershed, as well as six Conservation Areas, the largest being Fanshawe, Wildwood and Pittock. None offer 'wilderness' style camping.	Fanshawe, Wildwood and Pittock Conservation Areas continue to modernize their facilities to attract seasonal and overnight campers. A splash-pad was installed at Fanshawe CA in 2010.	None
<b>4.3 Hunting</b>	Hunting and trapping take place to a limited degree within the watershed's woodlots, ravines and floodplains, primarily on private land. Commonly sought game include: ring-necked pheasant, wild turkey, ruffed grouse, waterfowl, white-tailed deer, raccoon, muskrat, and red fox. Hunting also occurs on some lands owned by the conservation authorities.	The re-introduction of wild turkey into southwestern Ontario has been very successful and today their population is very high in much of the watershed.	None

Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>5. WINTER ACTIVITIES</b>			
<b>5.1 Snowmobiling/ Dog Sledding</b>	Snowmobiling takes place in the watershed, but because of sporadic snow cover, it is not a prime destination for enthusiasts. Snowmobile clubs use their trail system on private land. Dog sledding does not occur in the watershed to any appreciable level.	None	None
<b>5.2 Cross-country Skiing</b>	There are no large cross-country skiing venues in the watershed. Residents enjoy the sport at a few places in the watershed including Circle R Ranch near London, in the conservation areas, parks and golf courses and on private property.	None	Trails at UTRCA conservation areas are no longer groomed due to unreliable snow conditions, but the public is still welcome to ski and make their own trails.
<b>5.3 Skating</b>	Though skating was a fashionable pastime before the advent of artificial ice surfaces, today the river seldom freezes deep enough for skating or curling.	None	None

Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>6. NATURAL HERITAGE APPRECIATION</b>			
<b>6.1 Wildlife</b>	<p>Birding is the most popular form of wildlife viewing. Any area along the river has the potential to attract birds.</p> <p>The St. Clair National Wildlife Area features tundra swans in late winter and waterfowl year round.</p> <p>Skunk's Misery, a significant natural area featuring large woodlots and swamps, is a hot spot for viewing less common forest songbirds and butterflies. The annual Butterfly Count is held along the roadsides of Skunk's Misery in July.</p>	<p>There are five naturalist groups in the watershed that take an interest in birds, plants, butterflies and other wildlife. Scheduled outings frequently include trips to birding locations along the river. Birding walks and trips are a common activity. Most clubs participate in the annual Christmas Bird Count, providing valuable information on the population of wintering birds over the decades. As well, many local naturalists participate in the Breeding Bird Atlas and other amateur science activities.</p>	None
<b>6.2 Vegetation</b>	<p>There are many natural areas located along the Thames River system used by a growing number of people for viewing the Carolinian or deciduous forests. Viewing spring wildflowers and fall colours is most popular.</p> <p>In London, the best places to go to look at vegetation are the nine publicly-owned Environmentally Significant Areas (ESAs).</p> <p>Komoka Provincial Park on the Thames River southwest of London is a very popular spot, as is Trillium Woods near Woodstock.</p> <p>Conservation Areas such as Longwoods Road are also popular locations for looking at vegetation as most contain natural or reforested lands.</p> <p>Skunk's Misery, a series of large woodland / swamp tracts, some of which are publicly owned, is also a hot spot for botany enthusiasts.</p>	<p>The City of London, in partnership with the UTRCA, now own and manage nine Environmentally Significant Areas (up from five in 2000) that are open to the public.</p> <p>Many communities are working with partners to increase natural vegetation cover in places such as manicured parks, playgrounds, schoolyards, commercial lands, etc. As well, many Memorial Tree plantings are providing new areas for the public to visit and view native trees.</p>	None

Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>6. NATURAL HERITAGE APPRECIATION</b>			
<b>6.3 Vistas / Scenic Quality</b>	<p>The Thames Watershed is gently rolling to flat so vistas are not common. However, nice views of the North Thames are present along the steep valley sides, especially between London and St. Marys.</p> <p>Komoka Provincial Park also offers great views of the river valley.</p>	<p>The view of the North Thames from the Grand Trunk Viaduct Trail is one of the best in the watershed. This former rail line was transformed into a walking path in the last decade, thanks to local volunteers.</p> <p>Most bridges over the Thames offer good vistas of the river and valley.</p> <p>London City Council has recently adopted the <i>Thames Valley Corridor Plan, Phase 2</i> (2009) a long-range vision document that will be a key planning tool for sustaining the river's attributes, supporting environmental and economic vitality, tourism and local and regional recreation initiatives. The preservation of vistas of the river is also a component of the plan.</p>	None
<b>6.4 Geological Features/ Water Features</b>	<p>There are several Earth Science Areas of Natural and Scientific Interest in the watershed. Many relate to the region's glacial history (moraines, former glacial lakes, drumlins). All of these features are subtle or not easily identified by lay people, but important reminders of the processes that formed the watershed's features.</p>	None	None

Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>7. HUMAN HERITAGE APPRECIATION</b>			
<b>7.1 Historic Sites</b>	<p>There are numerous historic sites in the watershed. There are three villages that re-create life in historic times including Fanshawe Pioneer Village in London, the London Museum of Archaeology, and Ska-Nah-Doht Village and Museum near Delaware. All are open to the public and provide visitors with tours and programs.</p> <p>The War of 1812 is commemorated along Longwoods Road with monuments to the Shawnee Chief Tecumseh and the Battle of Longwoods.</p> <p>Other topic-specific museums or sites include: the Ingersoll Cheese Factory, the Beachville District Museum (limestone quarry), Eldon House (oldest residence in London), Fairfield Museum near Wardsville (Moravian-Delaware First Nation history), and Buxton Historic Site and Museum (an Afro-American settlement).</p> <p>Museums in St. Marys, Stratford, Woodstock and Chatham also house artifacts and stories related to settlement and development along the Thames.</p>	<p>Several historic sites have benefited from improvements over the last 10 years. For example, Fanshawe Pioneer Village has undergone a renewal in the last decade, with renovations to historic buildings, new education and arts programs, and a new building.</p> <p>The Museum of Ontario Archaeology and the Lawson Pre-historic Iroquoian Village has recently expanded their facility and constructed a new Palisade and Longhouse in 2007.</p> <p>Ska-Nah-Doht Village and Museum within Longwoods Road Conservation Area has repaired the longhouses and First Nations cabins on their site.</p>	None

Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>7. HUMAN HERITAGE APPRECIATION</b>			
<p><b>7.2 Cultural Landscapes</b></p>	<p>Most towns and cities in the watershed feature attractive 19th century main streets as well as Victorian era stately homes.</p> <p>The four First Nations communities along the Thames River retain their identity with more heavily wooded land tracts.</p> <p>The rural landscape reflects the European settlement patterns (British Isles, Dutch, and German largely).</p>	<p>London’s Woodfield neighbourhood recently won the People’s Choice award for Great Neighbourhood in the Great Places in Canada competition by the Canadian Institute of Planners. It is the finest example of an intact Victorian streetscape in Canada.</p> <p>The Town of St. Marys recently established a Heritage District comprised of its historic downtown and parts of the historic river frontage, including the town hall and refurbished opera house.</p> <p>Stratford’s attractive stone buildings and bridges are maintained.</p>	<p>The slow decay and removal of old wooden barns from the rural landscape is a concern to historians. Efforts have been made to catalogue these historic structures.</p>



*The town of St. Marys has established a Heritage District on its historic downtown and river frontage.*

Recreational Capability Themes and Sub-themes	Description of Current Situation	Significant Actions, Research or Studies	Changes or Threats to Nomination Value(s)
<b>7. HUMAN HERITAGE APPRECIATION</b>			
<b>7.3 Sporting Events/ Activities</b>	<p>Dragonboat races have become a popular event on the reservoirs of the watershed (Fanshawe Lake, Victoria Lake).</p> <p>Rowing regattas take place at Fanshawe Reservoir each year, as part of the High Performance Women's Rowing Centre.</p> <p>Labatt Park in London, the longest running baseball field in Canada, continues to host games.</p>	None	None
<b>7.4 Cultural Events/ Activities</b>	<p>There is a multitude of cultural events held each year including fall fairs, highland games, agricultural fairs, powwows, music festivals, re-enactments, etc.</p> <p>The Stratford Shakespeare Festival is an internationally recognized annual celebration of theatre and North America's largest classical repertory theatre presenting the works of William Shakespeare and other great writers.</p>	<p>Additional events have been and are being held to commemorate the Bicentennial of the War of 1812-14 including the Barn Quilt Trail honouring women and children from the war of 1812, summer theatre productions, re-enactments of the Battle of the Thames and Battle of Longwoods. In addition, volunteers in Chatham are bringing back the popular Heritage Days weekend to celebrate the Battle of the Thames Bicentennial.</p> <p>The Stratford Shakespeare Festival has been running since 1953.</p>	None



*Day fishing is a popular activity throughout the watershed, as here at Springbank Park, London.*



*Nature London members enjoy a spring nature hike in Meadowlily Woods Environmentally Significant Area in London on the South Thames.*



*Wildwood Conservation Area Lake Trail Opening 2010.*



*Day paddling is enjoyed in the spring and summer on many of the larger watercourses of the Thames.*



*First Nations culture is celebrated at the Ska-Nah-Doht Museum in the fall.*



## Chapter 6. Integrity Guidelines since Designation

Table 4 indicates how the river and watershed filled and fills the Natural, Cultural and Recreational Integrity Guidelines as discussed more fully in the Thames River Background Study (1997) and the Nomination Document (1998).

There are no significant threats to the Integrity Guidelines since 2000 and some improvements have been made to surface water quality and natural heritage protection as noted in Chapter 3. The Thames is situated in a highly developed part of Ontario with a strong agricultural and urban heritage, so pristine conditions are not expected. Funding limitations and fluctuations over the years are the largest threats to the preservation of cultural heritage buildings, natural heritage sites, and environmental monitoring and stewardship.



*Much of the Thames River corridor appears the same as it has for decades, as is this scene from the Lower Thames near Thamesville.*

**Table 4: Integrity Guidelines since Designation**

<b>CHRS Principles, Procedures and Operational Guidelines (2000)</b>	<b>Integrity Value(s)</b>	<b>Changes or Threats to Integrity Value(s) since Nomination</b>
<b>1. NATURAL INTEGRITY GUIDELINES</b>		
<b>1.1 The nominated area is of sufficient size and contains all or most of the key interrelated and interdependent elements to demonstrate the key aspects of the natural processes, features, or other phenomena which give the river its outstanding natural value.</b>	The Thames River Watershed is 5,825 sq. km in area and is 273 km in length as measured along the South Thames. At Thamesville, 60 km from the mouth, the river has a modest flow of 20 cubic metres per second (cms) in summer and 140 cms in March.	The Thames was not designated on its natural heritage values because of the presence of dams, but it is well known for its biodiversity of aquatic and terrestrial life and unique post-glacial formation.
<b>1.2 The nominated area contains those ecosystem components required for the continuity of the species, features or objects to be protected.</b>	While the Thames lies in a highly developed part of Ontario, the aquatic ecosystem and remnant forests are protected fairly well by environmental regulations and by conservation agencies and not for profit organizations.	Ongoing monitoring and research continue to raise awareness of local species and habitats. Restoration and stewardship efforts have increased over the last decade as agencies, municipalities and not-for-profit groups become engaged. Climate change poses a risk to all ecosystems on the planet, including the Thames.
<b>1.3 There are no human-made impoundments within the nominated area.</b>	Not applicable. There are dams. The Thames was not nominated on its natural heritage values.	Several small dams have been removed over the last decade and more removals are planned. No new dams are expected.
<b>1.4 All key elements and ecosystem components are unaffected by impoundments located outside the nominated area.</b>	Not Applicable	Not Applicable
<b>1.5 Natural values for which the river is nominated have not been created by impoundments.</b>	Not Applicable	Not Applicable

CHRS Principles, Procedures and Operational Guidelines (2000)	Integrity Value(s)	Changes or Threats to Integrity Value(s) since Nomination
<b>1. NATURAL INTEGRITY GUIDELINES</b>		
<b>1.6 The water of the nominated area of the river is uncontaminated to the extent that its natural aquatic ecosystem is intact.</b>	Water quality is suitable for fish, mussels, reptiles and other aquatic life. The presence of over 90 fish species in the Thames River system illustrates how productive its waters are.	Ongoing water quality and aquatic species monitoring by the conservation authorities confirms that the water quality has not deteriorated over the last decade (see watershed report cards in the Appendix).
<b>1.7 The natural aesthetic value of the river is not compromised by human developments.</b>	The beauty of the river is compromised in only very localized areas within urban centres. The majority of the river flows through farmland and is fringed by trees and meadows. Cities such as Chatham are revitalizing their downtowns that have a strong historical tie with the river.	There are no threats at present. London City Council has recently adopted the <i>Thames Valley Corridor Plan, Phase 2</i> (2009), a long-range vision document that will be a key planning tool for sustaining the river's attributes, supporting environmental and economic vitality, tourism and local and regional recreation initiatives.



*The North Thames flows through St. Marys. Photo by Pat Donnelly.*

CHRS Principles, Procedures and Operational Guidelines (2000)	Integrity Value(s)	Changes or Threats to Integrity Value(s) since Nomination
<b>2. CULTURAL INTEGRITY GUIDELINES</b>		
<p><b>2.1 The nominated area is of sufficient size and contains all or most of the key interrelated and interdependent elements to demonstrate the key aspects of the features, activities or other phenomena which give the river its outstanding cultural value.</b></p>	<p>The river and watershed possess an outstanding cultural heritage reflecting 11,000 years of human settlement, conflict and development. Significant heritage facts and features present include:</p> <ul style="list-style-type: none"> <li>• First Nations occupancy from 11,000 years ago to present (four present day First Nation Reserves on the river),</li> <li>• a multitude of archaeological sites (artifacts housed at the London Archaeological Museum and Ska-Nah-Doht Village and Museum),</li> <li>• the birthplace of Canadian agriculture and the agricultural heartland of eastern Canada (Ingersoll Cheese Museum),</li> <li>• War of 1812 sites and monuments,</li> <li>• the terminus of the Underground Railway for fugitive slaves prior to the American Civil War (Buxton Settlement Historic Site),</li> <li>• a rich architectural heritage (19th century main streets in numerous towns, cities),</li> <li>• rural and human settlement strongly influenced by the river (numerous riverside towns),</li> <li>• a leading role in the establishment of Conservation Authorities in Ontario, and</li> <li>• the birthplace and/or homes of prominent Canadians including Adam Beck, Timothy Eaton, John Labatt, Harriet Boomer, Tom Patterson.</li> </ul>	<p>No significant threats exist to impair important historical features or histories. However, there are societal changes (rural to urban shifts), aging historic buildings and fluctuating funding support for museums that challenge cultural heritage everywhere.</p> <p>The continued vibrancy of the culture in this area is reflected in many ways: art gallery shows focusing on the river, historic books, photo books, historic plaques, re-enactments of historic battles, powwows on First Nations Reserves, agricultural fall fairs, rowing regattas, heritage building designations, etc.</p>

<b>CHRS Principles, Procedures and Operational Guidelines (2000)</b>	<b>Integrity Value(s)</b>	<b>Changes or Threats to Integrity Value(s) since Nomination</b>
<b>2. CULTURAL INTEGRITY GUIDELINES</b>		
<b>2.2 The visual appearance of the nominated area of river enables uninterrupted appreciation of at least one of the periods of the river's historical importance.</b>	The Thames valley possesses an amazing similarity to its appearance 200 years ago. Tree cover along the river has increased over the decades as cattle are removed from streams and reforestation efforts increase.	None
<b>2.3 The key artifacts and sites comprising the cultural values for which the river is nominated are unimpaired by impoundments and human land uses.</b>	Important sites are protected.	None
<b>2.4 The water quality of the nominated area does not detract from the visual character or the cultural experience provided by its cultural values.</b>	The clarity of the water has improved over the decades with greater awareness around soil erosion and storm and sewage treatment.	Soil erosion after rainstorms turns the river brown for a time. Numerous stewardship programs are underway to help farmers and other landowners correct this problem.

CHRS Principles, Procedures and Operational Guidelines (2000)	Integrity Value(s)	Changes or Threats to Integrity Value(s) since Nomination
<b>3. RECREATIONAL INTEGRITY GUIDELINES</b>		
<b>3.1 The river possesses water of a quality suitable for contact recreational activities, including those recreational opportunities for which it is nominated.</b>	Water quality has remained steady since 2000 and has improved in some subwatersheds thanks to stewardship and infrastructure initiatives. The public continue to safely use the river system for canoeing, kayaking, rowing, dragonboat racing and sailing (on reservoirs), and boating (cruising).	None
<b>3.2 The river's visual appearance is capable of providing river travellers with a continuous natural experience, or a combined natural and cultural experience, without significant interruption by modern human intrusions.</b>	Over a half million people reside in the Thames River watershed and have easy access to the river and the riverside trails. River travellers (e.g., canoeists) enjoy the seclusion of the river valley, which is tree-lined through much of its length. There are a few dams to portage, but few other significant interruptions exist.	London City Council has recently adopted the <i>Thames Valley Corridor Plan</i> (2011), a long-range vision document that will be a key planning tool for sustaining the river's attributes, supporting environmental and economic vitality, tourism and local and regional recreation initiatives.
<b>3.3 The river is capable of supporting recreational uses without significant loss or impact on its natural, cultural or aesthetic values.</b>	While there are no fishing quotas on the Thames for recreational angling, data on fish populations show the resource is not threatened by the present level of fishing. Canoeing is carried out at a moderate level so any impacts on fish or mussels is minimal, again based on monitoring data. There are speed limits in place on all waterways, protecting aquatic life such as turtles and fish. Paddlers rarely experience crowded conditions on the river.	No threats



*Extensive fish and mussel monitoring has occurred over the last decade by the UTRCA.*



*Historic limestone bridges in St. Marys continue to reflect the history of the area.*



*Important historical riverside buildings, such as Eldon House in London, are still open to the public.*



*Over 30 sites are sampled routinely across the watershed under the Provincial Water Quality Monitoring Program.*



*The riverside vistas along the Thames have been maintained for decades, even just outside of London.*





# Chapter 7. Management Plan Recommendations and Current Status

Table 5 summarized the degree to which the recommendations from the 2000 Management Plan (*The Thames Strategy: Managing the Thames as a Canadian Heritage River*) have been achieved since designation. Good progress has been made. Of the 12 objectives from *The Thames Strategy*:

- five objectives were completed,
- one objective has been addressed,
- three objectives are ongoing, and
- three objectives are partially complete.

**Table 5. Management Plan Recommendations and Current Status**

Management Plan Recommendation	Degree of Achievement (initiated, ongoing, addressed, partial, complete)	Actions/Notes
<b>GOAL: To increase the appreciation, enjoyment and stewardship of the natural and cultural heritage and recreational opportunities of the Thames River and its watershed through community cooperation</b>		
<b>LEADERSHIP</b> • Establish and empower a Thames Implementation Committee to act as the catalyst that drives The Thames Strategy.	<b>Ongoing.</b> The Thames Canadian Heritage River Committee met regularly for many years following designation. In the last couple of years, the committee has met infrequently due to the health of several key members, and busy schedules. However, the staff at the Upper Thames River and Lower Thames Valley Conservation Authorities continue the connection with the CHRS program.	
<b>MONITORING</b> • Monitor the river's values by completing the Thames River Annual Report Checklist; and Monitor the progress of The Thames Strategy every 10 years and present the results to the Canadian Heritage Rivers Board.	<b>Complete.</b> Annual reports have been submitted every year (except one, inadvertently forgotten) since designation. This 10 year monitoring report fulfils the second point.	

Management Plan Recommendation	Degree of Achievement (initiated, ongoing, addressed, partial, complete)	Actions/Notes
<b>GOAL: To increase the appreciation, enjoyment and stewardship of the natural and cultural heritage and recreational opportunities of the Thames River and its watershed through community cooperation</b>		
<b>OUTREACH</b> <ul style="list-style-type: none"> <li>• <b>Host a series of community workshops across the watershed inviting both non-government and government stakeholders and individuals.</b></li> </ul>	<p><b>Complete.</b> The Thames Canadian Heritage River Committee hosted annual workshops called <i>Thames River Symposium</i> from 2001 to 2007. After 2007, it was felt the symposiums had run their course and achieved much of what had been desired.</p> <p>There continue to be workshops and meetings held across the watershed by the conservation authorities and municipalities relating to river issues.</p>	
<b>EDUCATION</b> <ul style="list-style-type: none"> <li>• <b>Promote and distribute the Thames River Background Study (print and CD) to schools, libraries, and other interested groups.</b></li> </ul>	<p><b>Complete.</b> <i>The Background Study</i> was distributed to schools, libraries and interested groups. It continues to be posted on the websites of the Upper Thames River and Lower Thames Valley Conservation Authorities.</p>	
<b>COMMUNICATIONS</b> <ul style="list-style-type: none"> <li>• <b>Write and distribute a regular Thames River Newsletter that includes information on local activities that promote CHRS values and facts about the river's environment, history and places of interest.</b></li> <li>• <b>Establish a Thames River Website to communicate this information.</b></li> <li>• <b>Feature a regular column on the Thames in local newspapers.</b></li> </ul>	<p><b>Complete.</b> The <i>Thames River Happenings</i> newsletter was distributed for several years following designation. The newsletter ran its course, as time and funding constraints crept in. The UTRCA continues to publish a monthly newsletter that is posted online.</p> <p><b>Ongoing.</b> The Upper Thames River and Lower Thames Valley Conservation Authorities both have websites that feature CHRS information.</p> <p><b>Partial.</b> While the Thames Canadian Heritage River Committee was not able to host a regular column in the newspapers, several newspapers host their own heritage columns. <i>The London Free Press</i> ran a five month series in 2008 called <i>A River</i> covering a wide range of local Thames River related articles, videos, blogs, photos, etc. <i>The London Free Press</i> continues to feature articles on the river's health and heritage issues.</p>	

Management Plan Recommendation	Degree of Achievement (initiated, ongoing, addressed, partial, complete)	Actions/Notes
<b>GOAL: To increase the appreciation, enjoyment and stewardship of the natural and cultural heritage and recreational opportunities of the Thames River and its watershed through community cooperation</b>		
<b>MARKETING</b> – Thames River Heritage Day • Establish and celebrate an annual Thames River Heritage Day throughout the watershed, highlighting specific river-related achievements.	<b>Partial.</b> Longwoods Road Conservation Area hosted nature walks on Canadian Rivers Day for a few years. Other members of the canoeing community also hosted events in the past on River Day.	
<b>MARKING</b> – Plaques and Signs • Erect plaques in communities explaining the designation of the Thames as a Canadian Heritage River.  • Erect attractive signs at all major bridges over the Thames indicating it is a Canadian Heritage River.	<b>Complete.</b> The CHRS bronze plaque donated by CHRS was installed at the Forks of the Thames in London in 2003. As well, community members from Chatham erected a Thames plaque on a boulder in Thamesgrove Conservation Area in 2000, the site of the long running Heritage Days weekend.  <b>Partial.</b> Bridge signs were designed by the UTRCA. Several signs were installed in the lower Thames area, thanks to funding from the Lower Thames Valley Conservation Foundation. Approvals for signs and fundraising are still pending for other areas (municipalities) of the watershed.	

Management Plan Recommendation	Degree of Achievement (initiated, ongoing, addressed, partial, complete)	Actions/Notes
<b>GOAL: To increase the appreciation, enjoyment and stewardship of the natural and cultural heritage and recreational opportunities of the Thames River and its watershed through community cooperation</b>		
<p><b>TOURS</b></p> <ul style="list-style-type: none"> <li>• <b>Develop Thames River Heritage Tours that would highlight various points of interest along the river and in the watershed that could be taken from boat, car or bus.</b></li> <li>• <b>Produce a War of 1812 Daybook and/or Tour and erect signage at battlefield site.</b></li> </ul>	<p><b>Addressed.</b> The Thames Canadian Heritage River Committee met with people in the tourism sector to develop tourism promotion, but it didn't take off for a variety of reasons. However, this recommendation was achieved in a different way, via the publication of <i>The Thames River Watershed: A Heritage Landscape Guide</i>, by Michael Troughton and Cathy Quinlan. The guide, published in 2009, is a pocket-sized book that explores six landscapes within the Thames watershed, with over 45 sites highlighted, to encourage exploration by the local and visiting public.</p> <p><b>Ongoing.</b> The bicentennial commemoration activities surrounding the War of 1812 are underway at the present time. The Kent Military Re-enactment Society is undertaking work on battlefield signage and other activities.</p>	<p>The book, <i>The Thames River Watershed: A Heritage Landscape Guide</i> by Michael Troughton and Cathy Quinlan was published and launched in 2009. This 168-page, full colour guide was written largely by the late Dr. Troughton. Some 500 copies were donated to watershed schools and libraries. Numerous copies sold locally. The pocket-sized book is a hit with history buffs, geographers, students, and local residents. Sadly, Michael Troughton died in 2007 before it was published.</p>

# Chapter 8. Conclusions and Recommendations

## 8.1 Conclusions

The Thames River watershed still meets CHRS Guidelines for its cultural and recreational values based on the 12 year review of activities, studies and improvements in the watershed summarized in this document. Although the presence of dams precluded nomination based on natural heritage values, improvements to the natural heritage of the Thames watershed through various stewardship activities are notable.

The analysis of Integrity Guidelines in Chapter 6 showed no threats to most values. The only threats are wide ranging issues such as climate change, that are not isolated to the Thames River, and whose impacts are unknown at this time. However, researchers such as Slobodan Simonovic of the Institute for Catastrophic Loss Reduction has been working on climate change models for the Thames region for several years and is helping conservation authorities and municipalities with understanding the risks and planning for the future.

The threat of fluctuating government and non-government funding for cultural, environmental and recreational sites and programs, is an ongoing challenge. The fact that so many important sites, museums, events, education programs, stewardship programs, etc. continue, is a testament to the dedication of their stewards, both volunteer and staff.

Since designation in 2000, the appreciation of the Thames River has grown in many ways throughout the watershed. Designation to the Canadian Heritage Rivers System has had positive outcomes for the river and its communities.

The Thames River should retain its designation as a Canadian Heritage River.

## 8.2 Recommendations

The Upper Thames River Conservation Authority and Lower Thames Valley Conservation Authority will continue to take a leadership role in implementing the *Thames Strategy* recommendations of liaison, monitoring, outreach, education and communications, in partnership with community groups and interested individuals.

The UTRCA will continue to collect information and submit Annual Reports to CHRS.

## Selected References

City of London. 2011. **Thames River Corridor Plan, Final Report**

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# Appendix

## Upper Thames River 2012 Watershed Report Card Summary

### Upper Thames River 2012 Watershed Report Card Summary



The Upper Thames River Conservation Authority has prepared this watershed report card summary on the state of our surface water quality, forest conditions and other watershed features.

Environmental monitoring and reporting helps us to understand our watershed and focus efforts where they are most needed. Beginning in 2001, the Upper Thames River Conservation Authority has produced Watershed Report Cards every five years to track environmental change in the 28 Upper Thames River subwatersheds. This brochure summarizes the 2012 Watershed Report Card information.

**What is a Watershed?**  
A watershed is an area of land drained by a river or stream. Watershed health is impacted by actions throughout the watershed. Actions at the top of a watershed affect those downstream.


**Where is the Upper Thames River Watershed?**  
The Upper Thames River watershed is located in the agricultural heartland of southwestern Ontario. Major urban centres include London, Woodstock and Stratford. Downstream of London, the Thames flows through the Lower Thames Valley watershed, past Chatham, and empties into Lake St. Clair.

The Upper Thames River Conservation Authority (UTRCA) is one of 36 Conservation Authorities across Ontario under the umbrella organization of Conservation Ontario.


**Grading**


A	Excellent
B	Good
C	Fair
D	Poor
F	Very Poor

The standards used in this report card were developed by Conservation Authorities to ensure consistent reportings across the Province of Ontario and are intended to provide watershed residents with information to protect and enhance the local environment.



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## Surface Water Quality

Surface water quality is graded using three indicators:

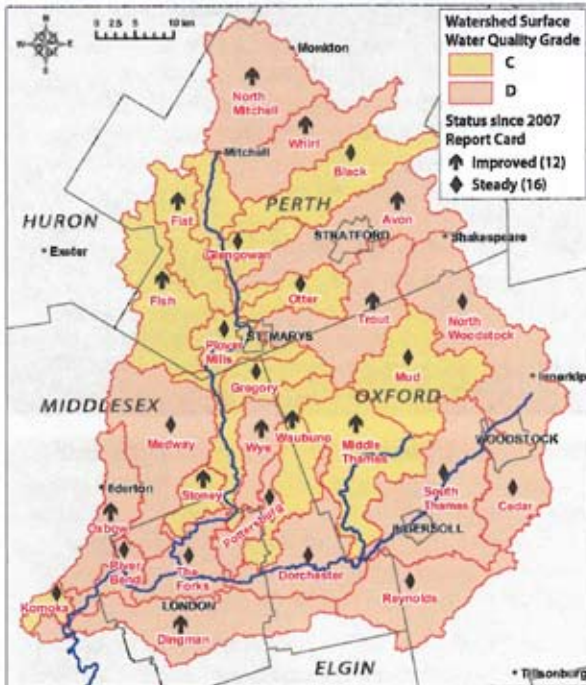
- total phosphorus (reflects nutrient sources such as fertilizer)
- *E. coli* bacteria (measure of pollution from human or animal waste)
- benthic invertebrates (measure of bugs living in stream sediments that indicate pollution levels and stream health)



## Forest Conditions

Forest conditions are measured using three indicators:

- % forest cover (measure of quantity)
- % forest interior (measure of size and quality)
- % riparian zone forested (measure of woodland along watercourses)



Data sources (2006-2010): Ministry of the Environment, City of London, Health Units, UTRCA.

### Findings

- Grades range from C to D, mostly D (target grade is B)
- Since the 2007 report cards, 12 watersheds improved, 16 stayed steady, and none declined
- Water quality was best in Waubuno Creek, then Glengowan, Middle Thames and Plover Mills

### Great Lakes Connection

Over the long term, improvements have been made in phosphorus levels in the Upper Thames River, but elevated nutrient/phosphorus levels continue to be an issue in the watershed and contribute to major algae blooms in Lake Erie.



The indicators are measured using Geographic Information Systems (GIS) and 2006 air photography.

### Findings

- Grades range from C to F, mostly Ds (target grade is B)
- Since the 2007 report cards, conditions have not changed significantly
- Overall there is 11.3% forest cover (D). The target for southern Ontario is 30%.
- Overall there is 1.4% forest interior (F), meaning most woodlots are very small. The target for southern Ontario is 10%.
- Overall, 31.4% of the riparian zone is forested (C). The target for southern Ontario is 50%.





## Groundwater

Groundwater is a valuable resource that is the main drinking water source for over 200,000 Upper Thames residents. A Drinking Water Source Protection Plan is underway to better protect the region's sources of drinking water. Information on local groundwater resources is available in each municipality's water supply system summary.

### Facts

- 73 municipal wells serve 142,000 people
- 16,200 private wells on record
- 24% of the watershed is classified as Significant Groundwater Recharge Area and/or Highly Vulnerable Aquifer

In *Significant Groundwater Recharge Areas*, a relatively large volume of water makes its way from the ground's surface to recharge, or replenish, an aquifer. A recharge area is considered significant when it helps maintain the water level in an aquifer that supplies a community with drinking water. In *Highly Vulnerable Aquifers* there are relatively faster pathways from the ground's surface down to an aquifer, making the aquifer more vulnerable to contamination. Protecting these areas is very important for the protection of groundwater as a safe, clean source of drinking water.

### Groundwater Monitoring

The Provincial Groundwater Monitoring Network has shown that groundwater levels generally decline from May to October, and increase from fall to spring with the largest increase in March (up to 1.5 m change). Groundwater levels were lowest in 2007 (drought year) and highest in 2009 and 2011. About 60-70% of local streamflow/baseflow comes from groundwater discharging into streams.



The UTRCA monitors groundwater quality and quantity at 24 Provincial Groundwater Monitoring wells across the watershed.



## Watershed Features

The Upper Thames River is situated in a highly developed and productive part of southern Ontario. The Thames River remains one of the most biologically diverse rivers in Canada and is designated a Canadian Heritage River.

### Upper Thames Watershed

- 3,420 square kilometres (entire Thames River watershed: 5,285 sq km)
- 75% agricultural, 14% natural vegetation, 10% urban
- 5 counties, 22 municipalities
- 2011 population 515,640 (increase of 17,730 from 2006 census)
- 22 wastewater treatment plants

### Aquatic Life

- 77 fish species including 5 species at risk
- 31 freshwater mussel species including 8 species at risk



A tagging study has shown that Rainbow Trout migrate annually from Lake Erie, through the Detroit River and Lake St. Clair, to spawn in tributaries of the Thames River.

### Watercourses

- 4,400 km of watercourse, 39% channelized, 35% natural and 26% buried
- 177 dams/barriers to fish movement
- 236 km of coldwater streams
- 670 pollution spills reported in 2006-10, up from 380 spills in 2001-05
- 56% of the land (urban and agricultural) has artificial or tile drainage

### Wetlands & Meadows

- 4.8% of the watershed is in wetland cover, the target is 10%
- 2.6% of the watershed is in meadow cover, mostly along streams

## Examples of Progress since 2006

### Clean Water Projects

Over 570 projects were completed by landowners through the UTRCA - municipal Clean Water Program. Projects included fragile land retirement, septic system upgrades, well decommissioning and erosion control.

### Target Watersheds

Eight community-based watershed groups continue to implement stewardship projects with the UTRCA in their local watersheds. Over 50 committee members, 20,000 students and many other volunteers have been involved.

### Infrastructure

Many upgrades to municipal wastewater treatment plants and storm/sanitary sewers have been completed across the watershed to protect and improve water quality.

### Tree Planting

Over 250,000 trees have been planted at 425 sites by landowners and community groups through UTRCA programs.

### Resource Planning

Natural heritage studies in Middlesex and Oxford Counties, the



Students and UTRCA staff work on a bioengineering structure in Stratford to protect the bank from erosion.

City of London and other municipalities have identified significant woodlands for protection in official plans.

A Thames River Water Management Plan is being developed to improve the health of the Thames River, Lake St. Clair and other downstream Great Lakes waterways.

## Actions for Improvement

There are many actions that individuals, groups and agencies can take to improve the health of the watershed:

### For Surface Water Quality

- Plant treed or grassed buffers along watercourses for shade and to filter pollutants.
- Reduce soil erosion, upgrade septic systems and implement other rural Best Management Practices (for grants and expertise see [www.cleanwaterprogram.ca](http://www.cleanwaterprogram.ca)).
- In urban areas, implement stormwater planning using Low Impact Development, stormwater Best Management Practices, erosion control and sewer systems upgrades.



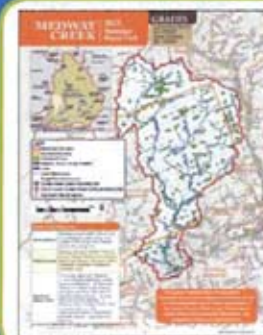
A landowner planted 7 acres of land into native trees and shrubs, adding onto the existing forest.

### For Drinking Water

- Homeowners should ensure the proper condition of their well and keep contaminants away.
- Sample private wells each spring and fall through the local Health Unit.
- Protect municipal drinking water sources by implementing Source Protection Plan policies.

### For Forests & Natural Areas

- Connect woodlands by planting shelterbelts, windbreaks and buffers along fields and watercourses.
- Increase natural vegetation cover in urban areas by naturalizing manicured urban parks and open spaces.



See your local  
Report Card  
[www.thamesriver.on.ca](http://www.thamesriver.on.ca)

The UTRCA website has detailed report cards for each of the 28 subwatersheds in the Upper Thames watershed.

## LTVCA Watershed Report Card Summary



# Where Are We?



## What Does This Report Card Measure?



Surface Water Quality



Forest Conditions



Groundwater Quality

## Why Measure?

Measuring helps us better understand our watershed. It helps us to focus our efforts where they are needed most and track progress. It also helps us to identify healthy and ecologically important areas that require protection or enhancement.

## What is a Watershed?

A watershed is an area of land drained by a river or stream.

Similar to the branch of a tree, creeks empty into streams, which then empty into larger streams, eventually forming one main trunk.

Within this system, everything is connected to everything else. In other words, actions which take place at the top of the system can and do affect those downstream.



### Grading

**A** Excellent

**B** Good

**C** Fair

**D** Poor

**F** Very Poor

The standards used in this report card were developed by Conservation Authorities to ensure consistent reportings across the Province of Ontario and are intended to provide watershed residents with information to protect, enhance and improve the precious resources that surround us.

## What Are We Doing?

• Stewardship initiatives engage landowners, community partners and others in activities that ensure clean, sustainable water and healthy agricultural lands, while protecting important ecological features such as wetlands, forests, natural lands, wildlife and birds. The reforestation efforts of the Lower Thames Valley Conservation Authority (LTVCA) are targeted at the subwatersheds with the most need or lowest grades. The annual reforestation rate in these areas is approximately 50,000 to 80,000 trees per year. In 2012, nearly 70,000 trees were planted into windbreaks and woodlots on private lands, memorial forests and conservation area nurseries with the help of local landowners and organizations including Trees Ontario, Ontario Power Generation - Natural Areas Grant Restoration Program, Union Gas Spectra Energy and TD Canada Trust Friends of the Environment Foundation. In addition, the "Greening Partnership" is an agreement between the Municipality of Chatham-Kent, the LTVCA, St. Clair Region Conservation Authority and Stewardship Kent to green Chatham-Kent through tree plantings, tall grass prairie and wetland restoration.

• Through the Ontario Drinking Water Source Protection program, funding was available to landowners in certain areas near municipal well supplies and surface water intakes for septic tank inspection and upgrade, runoff and erosion protection and additional best management practices.

• The LTVCA has protected environmentally sensitive lands, wetlands, culturally unique features and significant biological, ecological and scenic qualities through its conservation lands program. This program helps preserve wildlife habitat as well as improves water quality. Healthy natural areas are also critical for preserving and building local environmental resilience, helping us to adapt to climate change.

• The LTVCA samples inland surface water at 11 locations and nine groundwater sites in the watershed to assess the current and long term water quality under a Provincial monitoring program.

• Our Conservation Areas and Conservation Education Programs provide healthy outdoor activities and help people to learn about the importance of the environment to their own health.





# Surface Water Quality



Surface water is the water that makes up our rivers, lakes and streams. Water is critical to all aspects of our lives and it is important that we ensure there is a safe and reliable source of water for all our uses - now and in the future. The quality of water is influenced by many factors including land use, climate and vegetation.



Many Conservation Authorities assess the quality of water bodies by measuring water chemistry (phosphorous, oxygen, etc.) and benthic organisms that live in the sediment at the bottom of streams and rivers.

The indicators used to assess surface water quality in the Lower Thames Valley Conservation Authority (LTVCA) watershed are total phosphorus and *Escherichia coli* (*E. coli*). Large amounts of phosphorus in surface water lead to the growth of nuisance plants like algae, which negatively impact aquatic ecosystems. The southwestern portion of Lake Erie is prone to large algal blooms in warm months. Phosphorus may be due to wastewater plant discharge, agricultural runoff and faulty septic tanks. *E. coli* indicates the presence of fecal matter in the water, the sources of which may be human, animal or both. Sources of pollution to the watercourses must be effectively managed so that the health of the watershed can improve. The LTVCA has not the capacity to sample the water bodies for organisms that live in the sediment at the bottom of streams and rivers (benthics). This data would be beneficial in order to build on our knowledge and understanding of our watershed. The presence of benthic organisms are indicators of the water quality of our streams and rivers.

*Surface Water Data Source Partners:*  
Ontario Ministry of the Environment – Provincial Water Quality Monitoring Network





# Forest Conditions



Forests provide habitat and shade; they help to clean our air and water and they protect the soil which promotes water infiltration and reduces both erosion and flooding. Forests also help to cool the land and air - nature's air conditioner!



Conservation Authorities assess the area of their watersheds covered by forest and the amount of forest "interior" which provides critical habitat for many species including songbirds. This indicator is made up of % forest cover, % forest interior and % riparian zone forested. Percent forest cover is the percentage of the watershed that is forested or wooded. Forest interior is that portion of a woodlot that remains after removing a 100 metre buffer from the outside edge. The riparian zone is the area adjacent to watercourses (30 metres on each side) which helps stream water quality and protects important, specialized habitat.

Trees reduce energy consumption by lowering heating and cooling costs. Forest cover is extremely valuable for water purification, soil erosion control and air quality. Tree cover is especially important in large blocks or along drainage corridors, as a vital element to ecosystems that thrive there. The World Health Organization states that for an area to be healthy and ecologically sustainable, it should have a minimum of 12% forest cover. Environment Canada indicates as much as 30%, for survival of some interior forest bird species.

The Lower Thames Valley watershed currently has an average forest cover of 10%, with an estimation of 4.9 % forest cover in the Municipality of Chatham-Kent.

*Forest Cover Data Source Partners:  
Essex Region Conservation Authority, Upper Thames River Conservation Authority, Middlesex County*





# Groundwater Quality



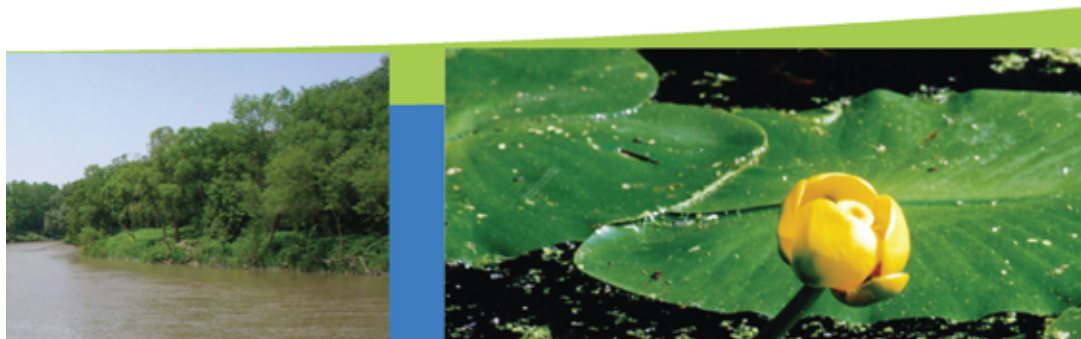
Groundwater is the water found beneath the earth's surface, in water bearing layers known as aquifers. Groundwater is difficult if not impossible to clean once contaminated, so it is critical to protect areas of groundwater recharge.



Conservation Authorities monitor groundwater chemistry (nutrients, metals, chloride and nitrates). Groundwater is generally considered to be a naturally protected source of water. However, pollution can also affect groundwater through improperly closed wells, faulty septic tanks, etc. and by the migration of pollutants through soil to the groundwater below. Pollution can migrate as well where surface water and groundwater interact, such as in natural springs, groundwater fed streams supporting flows in dry seasons, GUDI wells, or groundwater recharge by water bodies.

Groundwater flow does not always respect watershed boundaries, so it can be difficult to ascertain whether any individual site is representative of the (sub)watershed. The sampling wells have been individually graded and rolled into a single grade for the entire Lower Thames Valley Conservation Authority. Two groundwater quality indicators were examined: nitrate and chloride. Elevated levels of nitrate are due to causes such as faulty septic tanks and the excessive application of fertilizers and manure to land. Chloride may be naturally elevated in groundwater. Chloride levels may increase in the winter months due to road salt application.

*Ground Water Data Source Partners:  
Ontario Ministry of the Environment – Provincial Groundwater Monitoring Network*





## Lower Thames Valley Conservation Authority Subwatersheds

This watershed report card provides a snapshot of current conditions in the Lower Thames Valley Conservation Authority (LTVCA) watershed. Conservation Authorities address issues and concerns identified in watershed report cards through local programs, often in partnership with landowners, other agencies, community groups and municipalities or other government agencies. Watershed report cards help us to identify environmental problems and issues within local subwatersheds, identifying specific areas we need to protect, restore or manage. Below is a map highlighting the subwatersheds of the LTVCA.



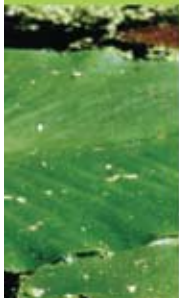
### *Low Grades vs. High Grades?*

Low grades show landowners and stakeholders the need for remediation and link land use practices to the larger watershed. Stresses and changes within local environments are inevitable. Low grades may be a function of historical land use practices which can take a long time to improve. Stewardship programs, tree planting partnerships with municipalities, naturalization projects in urban areas, conservation bylaws and regulations, natural heritage strategies and watershed management planning, all play a role in improving the grade. It is therefore important to maintain improvements and realize the benefits of long term programs.

Farmers across Ontario have voluntarily developed a comprehensive Environmental Farm Plan, approved by their peers and implemented in partnership with Conservation Authority stewardship programs. These programs provide technical assistance and funding to help farmers improve crop production, water, soil, fish and wildlife habitat, livestock manure handling and storage and nutrient management. This willingness of the agriculture community to implement Beneficial Management Practices on their lands is resulting in improvements to water quality, by reducing soil erosion and nutrient loading into waterways.

Climate change is introducing new stresses on our lands and waters. Extended periods of drought and flash flooding have an impact on water quality, as well as the larger socio-economic impacts. Heat waves and milder winters with minimal snowfall and fewer days with below freezing temperatures can aid in the introduction and spread of disease and invasive insects. Enhancing and maintaining forest cover slows climate warming and assists with adaptation by preventing the release and improving the capture of CO<sub>2</sub> from the atmosphere.

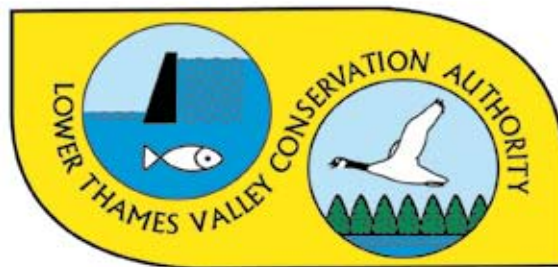
The Lower Thames Valley Conservation Authority needs to continue to build on our knowledge and understanding of our watershed region and how it is changing by sustaining and expanding our monitoring programs. Watershed monitoring will help us better understand problem areas, focus natural resource management actions where they are needed most and track progress over time. *You can have an impact on the health of the lower Thames River watershed.*



# What You Can Do

## Be a Watershed Steward!

- Create a more natural and diverse habitat by using a variety of native plant species that are better adapted to the local climate and pests.
- Minimize use of fertilizers and utilize the municipal hazardous waste disposal program.
- Repair or replace faulty septic systems and ensure proper maintenance.
- Homeowners with wells should understand the condition of their well and risks to their water supply.
- Sample private wells each spring and fall.
- Keep contaminants such as fuel, pesticides, manure/waste away from your well area.
- Decommission abandoned wells according to Ministry of the Environment standards.
- Conserve woodlands, wetlands and other natural areas.
- Protect and enhance stream habitat.
- Keep rivers, streams and all waterways clean of garbage, compost, chemicals and other pollutants.
- Connect the existing river-side woodlands and meadows with additional plantings to create a continuous wildlife corridor.
- Increase forest interior by making woodlots larger and less fragmented.
- Connect woodlots by planting shelterbelts, windbreaks and buffers along fields and watercourses, which will also protect against soil erosion and improve water quality.
- Woodlot owners can improve the quality of the wildlife habitat by installing bird nesting boxes, controlling invasive plant species and keeping livestock and unauthorized motorized vehicles out.
- Implement agricultural Best Management Practices in manure storage and spreading, soil conservation, fertilizer and pesticide storage, application and fuel storage and restricting livestock access to watercourses.
- Complete and follow Environmental Farm Plans and Nutrient Management Plans.
- Utilize grants and expertise from the Lower Thames Valley Conservation Authority and government agencies..



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