



THOUSAND ISLANDS ECOSYSTEM

Community Atlas





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# INTRODUCTION



## WHAT IS THIS ATLAS FOR?

This atlas presents information about the “greater park ecosystem” of St. Lawrence Islands National Park. A greater park ecosystem is the landscape around a park that influences the wildlife and ecological systems inside the park. The objectives of this atlas are to transform complex data into usable information, and to make this information available to everyone involved or interested in local decisions that affect our common ecosystem. This shared information should give us some common ground and help us all make better decisions. Better decisions will benefit people, wildlife, and the community.

Chapter 1 introduces St. Lawrence Islands National Park, while Chapter 2 discusses the park’s greater ecosystem, the Thousand Islands Ecosystem.

Chapter 3 introduces municipal planning, one of the most important ways in which we make collective decisions about this ecosystem. The following chapters build on this theme. Chapter 4 looks at woodlands in the Thousand Islands Ecosystem with a view to setting conservation priorities. Similarly, Chapter 5 looks at wetlands in the Thousand Islands Ecosystem.

Chapter 6 discusses the importance of natural connections for the wildlife of St. Lawrence Islands National Park and the greater ecosystem. Chapter 7 looks at what the future might hold for Thousand Islands Ecosystem and the choices we face.

## THE COMMUNITY ATLAS PROJECT

From 2002 to 2004, the Canadian Parks and Wilderness Society embarked on an exciting project working with local groups, individuals and agencies involved in land management around four of Canada’s national parks: St. Lawrence Islands National Park and Bruce Peninsula National Park in Ontario, Riding Mountain National Park in Manitoba, and Gulf Islands National Park Reserve in British Columbia. Our objective was to gather information about the regions surrounding the national parks, to compile this information into community conservation atlases, and to present these atlases in a way that will contribute to local policy development and land use that supports the ecological integrity of the national parks at the core of these landscapes. This atlas is one of the four that resulted from the project.

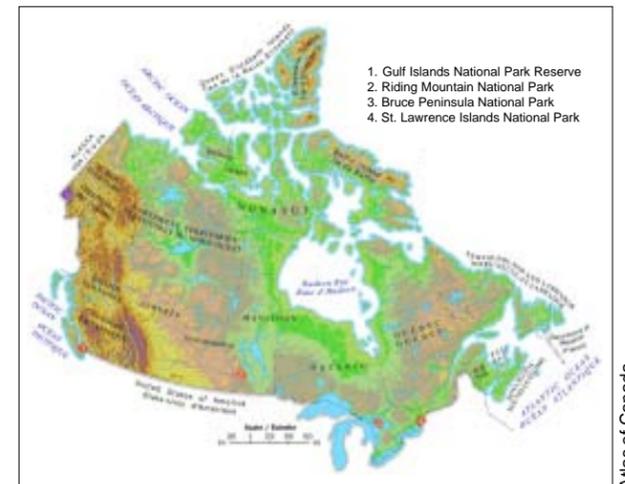
We now know that the long-term ecological health of our national parks depends not only on how lands within park borders are managed, but also on what happens in the surrounding region, referred to sometimes as the Greater Park Ecosystem. In other words, activities both inside and outside national parks impact on how well parks can protect plants, animals and ecological processes.

While we have used the technical tools of Geographic Information Systems (GIS) to analyze and present data in map forms, this project has been much more than a GIS project. It has been about working collaboratively to determine what information is needed to manage the landscape around a national park in a way that is supportive of healthy park ecosystems and healthy communities. It has been about involving people who live in the greater ecosystems of national parks and ensuring that the atlases meet the needs of the individuals, agencies and organizations who will use it in their work and in their voluntary activities.

With this in mind, we involved local groups, agencies and individuals from the very beginning. Before we produced any maps, we talked to people, soliciting ideas about what information would be useful to include in a community conservation atlas, how it could be presented and how it might be used. We consulted on what data were available to build the atlas. The information that was generously provided by many people at many stages of the project is an absolutely essential part of the final atlas that is presented here. Nonetheless, any opinions expressed in this atlas are those of CPAWS and may not necessarily reflect those of all contributors and supporters.

We envision that this atlas could be used to inform government planning and policy development directly, and as a tool that will help citizens and groups participate in public planning processes in and around national parks. For example, national park management planning, local and regional planning all solicit participation from the public.

The challenge now will be to keep the information in these atlases up to date. We welcome your continued input into the atlases, and welcome suggestions on how we can continue to update the valuable results that we have achieved together. For more information please visit [www.cpaws.org/community-atlas](http://www.cpaws.org/community-atlas)



The four national parks included in the Community Atlas Project: Gulf Islands National Park Reserve (1) in British Columbia, Riding Mountain National Park (2) in Manitoba, and Bruce Peninsula National Park (3) and St. Lawrence Islands National Park (4) in Ontario.

CPAWS gratefully acknowledges the financial support of the Government of Canada's Voluntary Sector Initiative, through the Parks Canada Agency; the Donner Canadian Foundation; the Ontario Trillium Foundation, an agency of the Ministry of Citizenship, Culture and Recreation; and the in-kind support of ESRI Canada.



## ABOUT CPAWS

The Canadian Parks and Wilderness Society (CPAWS) is a non-profit charitable conservation organization that has been working to conserve nature since 1963. We are a grassroots organization with 12 regional chapters and a national office. The CPAWS Ottawa Valley Chapter has been working for wilderness in eastern Ontario and western Quebec for over 30 years, and is one of several organizations collaborating on the Algonquin to Adirondacks conservation initiative.

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## PARTNERS, COLLABORATORS AND ACKNOWLEDGEMENTS

This St. Lawrence Islands greater park ecosystem atlas was created by the Ottawa Valley Chapter of the Canadian Parks and Wilderness Society (CPAWS), in partnership with St. Lawrence Islands National Park, Parks Canada, the Eastern Ontario Model Forest, and the Thousand Islands-Frontenac Arch Biosphere Reserve network (the biosphere network). Key collaborators on the project included the Algonquin to Adirondacks Conservation Association, Leeds Stewardship Council, Ontario Ministry of Natural Resources, and the United Counties of Leeds and Grenville.

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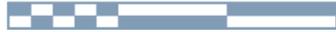
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# CHAPTER 1. ST. LAWRENCE ISLANDS NATIONAL PARK



Established in 1904, St. Lawrence Islands National Park in eastern Ontario is the oldest national park east of the Rocky Mountains. The interplay of rugged islands and hills, the St. Lawrence River and a moderate climate have created a diverse ecosystem, providing habitats for a wide range of species.

The national park's property is established on all or part of 26 islands and many islets and shoals located along an 89-kilometre span of the St. Lawrence River, the twelfth largest river in the world. The park also includes properties on the mainland at Mallorytown Landing and near the communities of Elgin and Lynhurst. The wide distribution of park properties makes the national park an integral part of the landscape/river mosaic in the Thousand Islands. Some of the park islands such as Hill Island and Grenadier Island are a patchwork of park property, roads and private homes or cottages.

St. Lawrence Islands National Park is located at the crossroads of two continental landscape features: the St. Lawrence River and the Frontenac Axis. Both serve ecological roles as corridors for wildlife movement and dispersal in a largely settled and agricultural landscape. As well, the St. Lawrence River acts as a partial barrier for the north-south species movement, with the Frontenac Axis providing the island "stepping stones" across that barrier.

## WILDLIFE

As illustrated in Map 1.1, St. Lawrence Islands National Park lies at the junction of several *ecoregions*, large regions of similar geology and climate that are each home to different sets of species and habitats. We see the influence of these different ecoregions in the combination of species that coexist at the park. For example, both the Short-tailed Weasel (a northern species) and the Long-tailed Weasel (a southern species) occur in this region together, as do both the Northern and Southern Flying Squirrel.

Species more typical of Carolinian forests such as Deerberry and Buttonbush occur in St. Lawrence Islands National Park alongside typically Boreal forest species such as Tamarack and Balsam Fir. The Pitch Pine occurs locally here even though it is more typical of the Appalachians to the south. While the area hosts northern animals like marten and fisher, the Black Rat Snake is also found here at the northern edge of its range, and even Virginia Opossum have been known to occur here.

Of the 21 Species at Risk that occur in the Thousand Islands Ecosystem, 16 are found in St. Lawrence Islands National Park (see Table 1.1).



*The Black Rat Snake is at the northern edge of its range in St. Lawrence Islands National Park.*

## GEOLOGICAL AND HUMAN HISTORY

Geology is at the root of much of what we see today in and around the national park. One of the most important geological features in the region is the Frontenac Axis, also commonly called the Frontenac Arch. The Arch is an extension of the rugged Canadian Shield bedrock that points southeast across the St. Lawrence River to the Adirondack Mountains, as shown on Map 1.2. The Thousand Islands owe their existence to the Canadian Shield's resistance to the erosion by the St. Lawrence River.

The land on the Frontenac Arch is rocky and rugged, whereas the limestone plains to the east and west are generally flat with deeper soils. This difference in bedrock strongly influenced the patterns of human settlement over the past few hundred years. Farming was generally more successful off the axis, so more of the land was cleared there, more people settled there, and cities and towns eventually developed. These human activities were all less pronounced on the Arch.



*The Red Fox (above) shares St. Lawrence Islands National Park with its southerly cousin the Gray Fox.*



*Canadian Shield, also called Precambrian Shield, is the bedrock of the Thousand Islands Ecosystem, both literally and figuratively.*



Parks Canada

*The Black Terns that breed at St. Lawrence Islands National Park spend their winters in South America.*



Jean Langlois/CPAWS

*Concrete dividing walls and high traffic make Highway 401 more of a barrier to wildlife.*

To this day the Frontenac Arch, including the Thousand Islands, remains a relatively natural landscape compared to the areas to the east and west along the St. Lawrence River.

### THREATS AND CHALLENGES

All parks face threats to their wildlife and ecosystems. Some threats originate within park boundaries while others originate from the area outside the park, which is called the Greater Park Ecosystem. The Thousand Islands Ecosystem is the Greater Park Ecosystem of St. Lawrence Islands National Park.

The major threats to St. Lawrence Islands National Park are the destruction of natural habitat and the fragmentation of this habitat by human activity. Fragmentation occurs when natural habitat is separated into patches that are not connected to each other, making it difficult for wildlife to use the remnant habitat even if it is there. The major sources of habitat destruction and fragmentation in the Thousand Islands Ecosystem are transportation infrastructure (on land and water), and urbanization.

The most notable impact of transportation infrastructure on land is from Ontario Highway 401, a divided four-lane highway that runs the length of the ecosystem.



Parks Canada

*Boating has been the most popular way to visit the St. Lawrence Islands National Park since it was established in 1904. Visitor activities today at include sailing, kayaking, canoeing, camping, and cross-country skiing.*

The 401 is a barrier to wildlife, not only because of the high volume and speed of traffic, but also because of the concrete dividers known as “Jersey barriers” that have been installed for the safety of motorists. The Greater Park Ecosystem is also divided along its length by the St. Lawrence Seaway, a major shipping route.

### THE ALGONQUIN TO ADIRONDACKS CONNECTION

The forests and wetlands of the Frontenac Arch form an important chain of interconnected wildlife habitats from Algonquin

Park to the Adirondack Park, two of the largest parks in eastern North America (see Map 1.2). The Algonquin to Adirondacks Conservation Initiative (A2A) seeks to keep this chain of habitats connected. Scientists think that this chain is weakest where it crosses the St. Lawrence River and Highway 401. In other words, the Thousand Islands Ecosystem is a critical link in the A2A chain. Conserving habitat here is important for local communities, but also for wildlife across a much larger region.

**Table 1.1: Species at Risk Found in the Thousand Islands Ecosystem and in St. Lawrence Islands National Park (SLINP)**

Common Name	Scientific Name	COSWEIC Designation*	Found in SLINP
Eastern Loggerhead Shrike	<i>Lanius ludovicianus migrans</i>	Endangered	✓
American Ginseng	<i>Panax quinquefolius</i>	Endangered	✓
Blunt-lobed Woodsia	<i>Woodsia obtuse</i>	Endangered	
Least Bittern	<i>Lxbrychus exilllis</i>	Threatened	✓
Peregrine Falcon	<i>Falco peregrine antum</i>	Threatened	
Black Rat Snake	<i>Elaphe obsolete obsolete</i>	Threatened	✓
Stinkpot Turtle	<i>Sternotherus odoratus</i>	Threatened	✓
Deerberry	<i>Vaccinium stamineum</i>	Threatened	✓
Pugnose Shiner	<i>Notropis anogenus</i>	Threatened	
Southern Flying Squirrel	<i>Claucomys volans</i>	Special Concern	✓
Red Shouldered Hawk	<i>Bulco liniatus</i>	Special Concern	✓
Cerulean Warbler	<i>Dendroica cerulea</i>	Special Concern	✓
Red Headed Woodpecker	<i>Melanerpes crythrocephalus</i>	Special Concern	✓
Eastern Milksnake	<i>Lampropeltis trangulum</i>	Special Concern	✓
Northern Ribbonsnake	<i>Thamnophis sauritus</i>	Special Concern	✓
Five Lined Skink	<i>Eumeces fasciatus</i>	Special Concern	✓
Northern Map Turtle	<i>Gratemys geographica</i>	Special Concern	✓
Bridle Shiner	<i>Notropis biffrenatus</i>	Special Concern	✓
Monarch Butterfly	<i>Danus plexippus</i>	Special Concern	✓
Broad Beech Fern	<i>Phegopteris hexagonoptera</i>	Special Concern	
Eastern Prairie Fringed Orchid	<i>Platanthera leucophaea</i>	Special Concern	

**\*COSEWIC Designations:**

Endangered: A species facing future extirpation or extinction

Threatened: A species likely to become endangered if limiting factors such as habitat destruction are not reversed

Special Concern: A species that is especially sensitive to human activities or natural events but are not endangered or threatened

Source: Modified from *State of the Park Report*, St. Lawrence Islands National Park, 2004.



Parks Canada

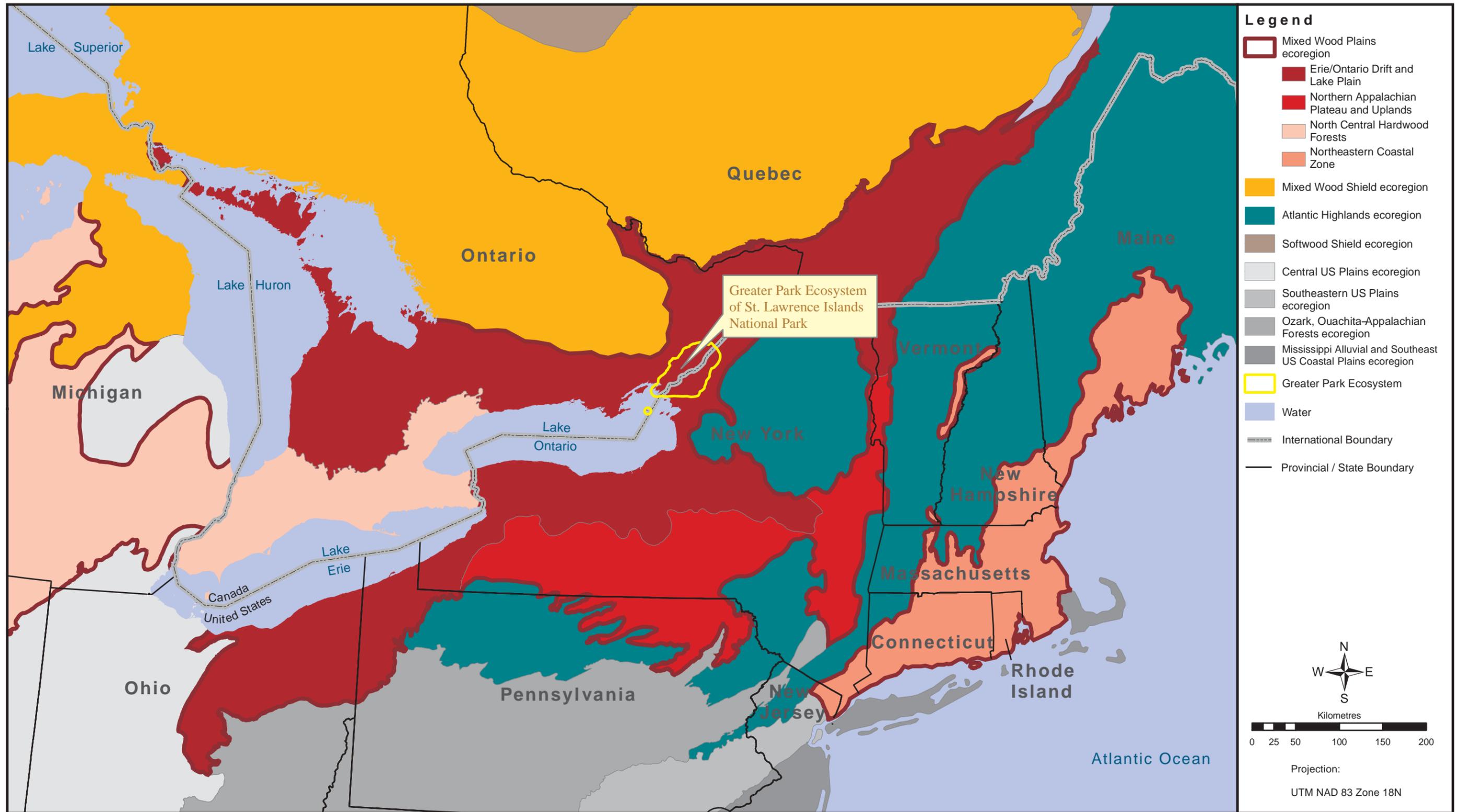
Both Northern and Southern Flying Squirrel inhabit St. Lawrence Islands National Park.



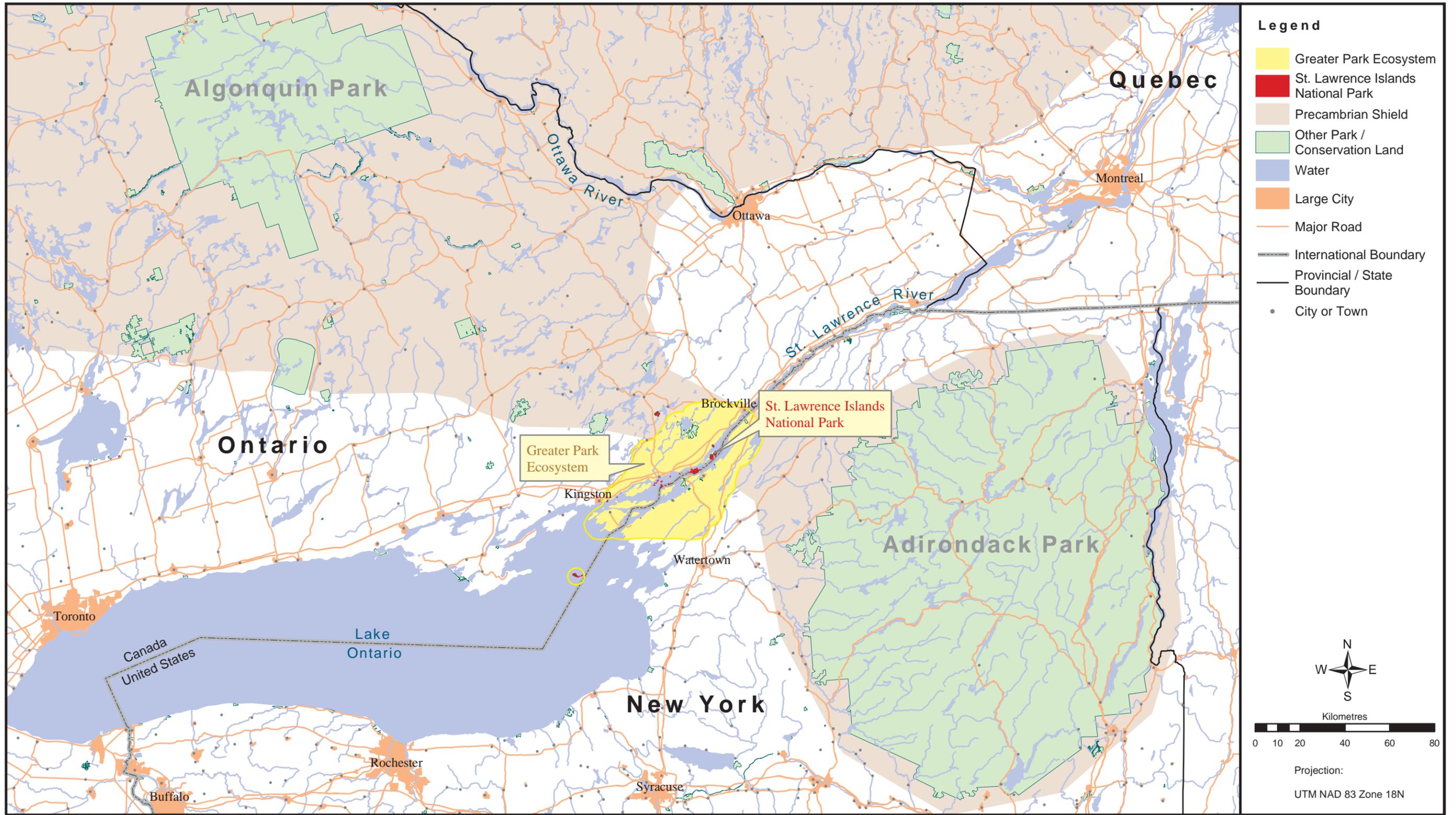
Parks Canada

Deerberry, more typical of the Carolinian forests of southwestern Ontario, also occur in the park.

# Continental Context: The Influence of Several Ecoregions



# Ecological Connections: The A2A Link

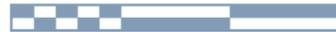


Map produced by the Canadian Parks and Wilderness Society – Ottawa Valley Chapter

Data Sources: St. Lawrence Islands National Park, GeoGratis, Ontario Ministry of Natural Resources, National Atlas of the United States of America, New York State Parks



## CHAPTER 2. THE THOUSAND ISLANDS ECOSYSTEM



The Greater Park Ecosystem (GPE) of St. Lawrence Islands National Park, commonly referred to as the Thousand Islands Ecosystem, is an area of over 3,000 km<sup>2</sup> that is bisected by the international border between Canada and the United States. The approximate boundary of the Greater Park Ecosystem was identified in the mid 1990s. It is generally based on watersheds and extends from Brockville, west to Kingston, Ontario and from the Rideau Waterway south to Black River and Indian Lake in New York State. The landscape is made up of a mosaic of human land uses such as agriculture, urban development, and roads, along with a large proportion of natural areas (see Chart 2.1)

Land ownership in the Thousand Islands Ecosystem is illustrated in Map 2.1. Approximately 97% of the land is privately owned, in parcels ranging from single-home lots to thousands of acres. Public land in the greater park ecosystem is owned or managed by many government agencies. Conservation lands in addition to the national park include provincial and state parks, provincial Conservation Authority properties, and private conservation lands such as easements and land trust properties. The St. Lawrence Parks Commission's mandate focuses on tourism rather than conservation, but owns land that includes important natural areas. Similarly, provincial crown land can contribute to conservation in the Thousand Islands Ecosystem, if managed accordingly.

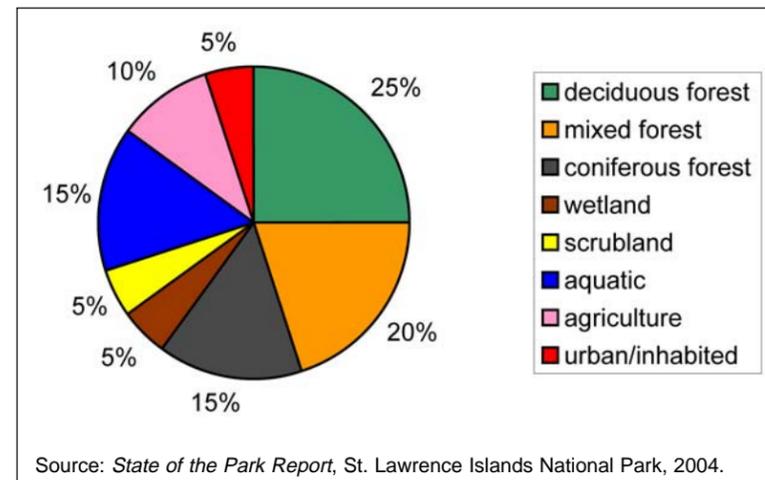
The jurisdictions of various government and non-profit agencies are very complex, as shown in Map 2.2. Many layers of laws and regulations apply in the region. The jurisdictions that coincide here include agencies from two federal governments, one state government, one provincial government, two New York counties, and two Ontario counties including six townships.



Jean Langlois/CPAWS

*The Thousand Islands Ecosystem is dotted with towns and villages. Brockville, above, has a population of 22,000.*

**Chart 2.1 Land Types in the Thousand Islands Ecosystem**



In such a jurisdictionally-crowded landscape, it pays to coordinate. A growing tradition of collaboration exists among the organizations working to maintain or improve the natural environment in the region. Some examples include the Thousand Islands-Frontenac Arch Biosphere Reserve, the Algonquin to Adirondacks Conservation Association, and the Eastern Ontario Natural Heritage Working Group (see Chapter 3).



Parks Canada

*Osprey are making a comeback thanks to a reduction in toxic pollution in the Great Lakes. Volunteers build platforms in the area to encourage nesting.*



Parks Canada

*Cottages and homes are common along the region's waterways.*

**Table 2.1 Organizations involved in conservation in the Thousand Islands Ecosystem**

Examples of major government agencies and nonprofit organizations are listed with their primary areas of involvement in conservation. “Species” category includes species at risk, wildlife conservation, biodiversity conservation. “Habitat” category includes restoration and conservation of specific wildlife habitats. “Land” category includes parks, protected areas, privately owned nature reserves, and conservation easements. “Water” category includes water quality and quantity management. “Planning” includes municipal, regional, and land use planning. “Pollution” category includes solid waste, water and air pollution, wastewater management, etc.

Organization	Areas of involvement in conservation					
	Species	Habitat	Land	Water	Planning	Pollution
Algonquin to Adirondacks Conservation Association		+			+	
American Farmland Trust			+		+	
Canadian Parks and Wilderness Society			+		+	
Canadian Thousand Islands Heritage Conservancy		+	+		+	
Canadian Wildlife Service (CWS)	+	+	+			
Cataraqui Region Conservation Authority		+		+	+	
Charleston Lake Association		+		+		
Charleston Lake Environmental Association		+		+		
Charleston Lake Provincial Park			+			
County agencies (Canada and US)				+	+	
Ducks Unlimited (US and Canada)		+	+	+		
Eastern Ontario Model Forest	+	+			+	
Fisheries and Oceans Canada		+		+	+	
Friends of Charleston Lake Provincial Park			+		+	
Gananoque River Waterway Association		+		+		
Grenville Land Stewardship Council	+	+		+	+	+
Hunters and Anglers clubs	+	+				
International Joint Commission				+		+
Lake associations/Cottage associations		+		+	+	+
Leeds County Federation of Agriculture		+		+	+	+
Leeds County Stewardship Council	+	+		+	+	+

*continued on next page*



Parks Canada

*Roads are a main cause of habitat loss and fragmentation in the Thousand Islands Ecosystem.*



Jean Langlois/CPAWS

*Agriculture is an important activity in the Thousand Islands Ecosystem, producing a pattern of small pastures, fields, and woodlots.*

**Table 2.1 Organizations involved in conservation in the Thousand Islands Ecosystem**

Organization	Areas of involvement in conservation					
	Species	Habitat	Land	Water	Planning	Pollution
New York State Department of Environmental Conservation	+	+	+	+	+	+
Ontario Ministry of Municipal Affairs and Housing					+	
Ontario Ministry of Natural Resources (MNR)	+	+	+	+	+	
Ontario Ministry of the Environment (MOE)				+		+
Ontario Parks			+			
Parks Canada			+			
Rideau Valley Conservation Authority		+	+	+		+
Rideau Waterway Land Trust			+			
Save the River		+		+	+	+
St. Lawrence Parks Commission			+		+	
St. Lawrence Seaway					+	
The Nature Conservancy (US and Canada)			+		+	
Thousand Islands Area Residents' Association					+	+
Thousand Islands-Frontenac Arch Biosphere Reserve	+	+		+	+	+
Townships (Canada and US)				+	+	
United States Fish and Wildlife Service (USFWS)	+	+				

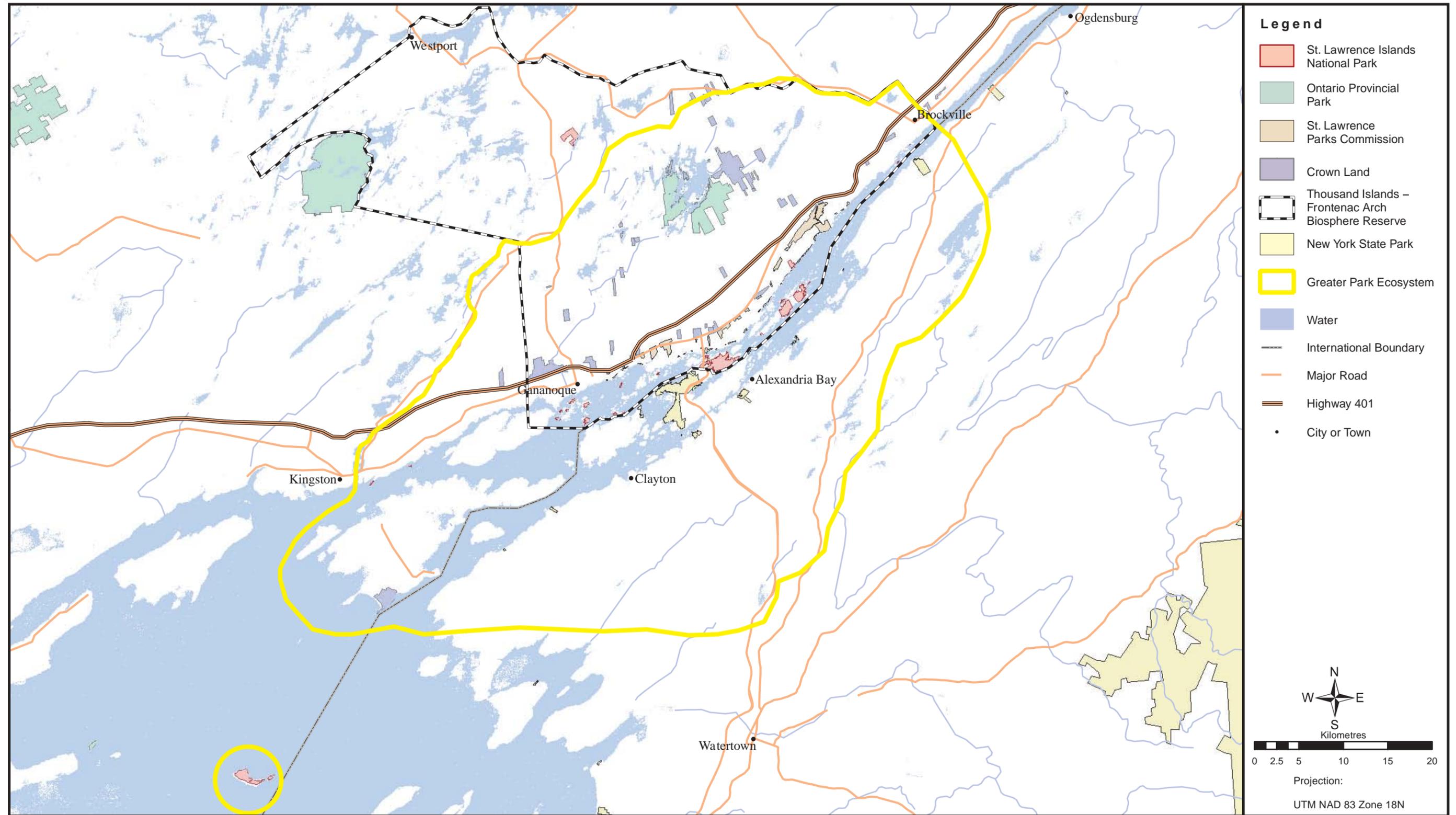


Parks Canada

*The St. Lawrence Seaway, a major shipping route, cuts through the Thousand Islands Ecosystem.*

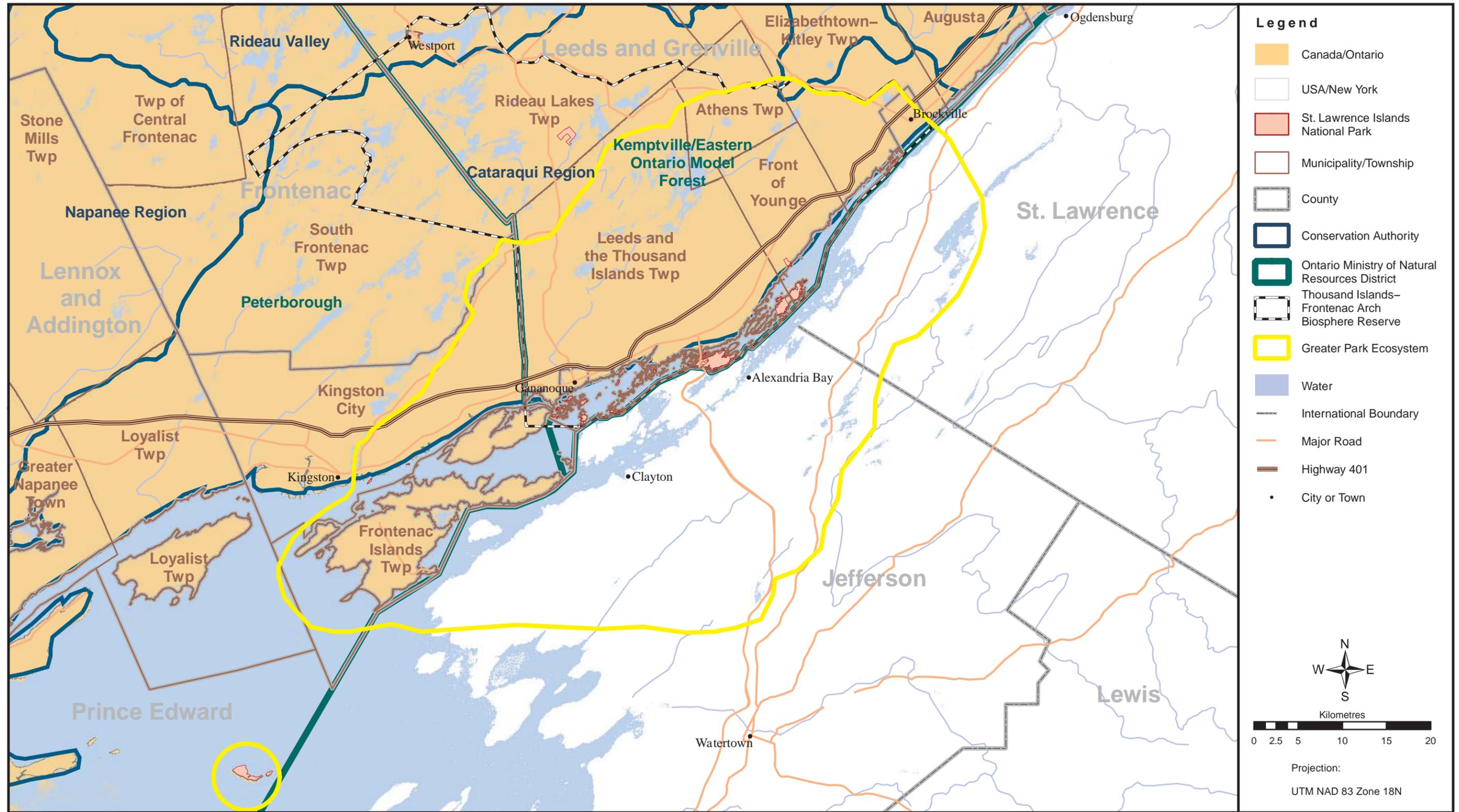
Map 2.1

# Land Ownership and Conservation Lands



Map 2.2

# Jurisdictions



Map produced by the Canadian Parks and Wilderness Society – Ottawa Valley Chapter

Data Sources: St. Lawrence Islands National Park, GeoGratis, Ontario Ministry of Natural Resources, Ontario Ministry of Municipal Affairs and Housing, New York State Parks



## CHAPTER 3. MUNICIPAL PLANNING



### PLANNING AND COMMUNITY-BASED CONSERVATION

Municipal planning has a big impact on nature in our communities, by influencing where and how development occurs. In many ways a county or township Official Plan is the ultimate in community-based conservation, because it spells out the community's vision for the future and the choices we make together to make that future a reality. This chapter focuses on municipal planning in the Ontario portion of the Thousand Islands Ecosystem.

### MUNICIPAL PLANNING IN ONTARIO

Municipal planning occurs at two levels in Ontario. Each county generally has an Official Plan that sets guidelines for land use and development within its boundaries. Each township within a county also has its own Official Plan that deals with more specific matters. Official Plans at both levels of municipal government are governed by provincial legislation. The *Planning Act* is the main legislation, and is complemented by the Provincial Policy Statement (PPS). In addition to providing direction on matters such as housing, agriculture, and water quality, the Provincial Policy Statement sets out how municipalities should protect nature as part of their official plans (see box).

### NATURAL AREAS

Municipal Official Plans are required to protect natural areas in the landscape known as “Natural Heritage Features”, and to make sure that development in these areas respects the natural values that make them significant. Table 3.1 explains how different Natural Heritage Features are treated in Official Plans. Municipal planning is the framework that determines the patterns of development and protection, as expressed in zoning and bylaws, and these patterns define the future of the landscape. Poorly planned development and sprawl lead to loss of

habitat, which is the leading cause of species becoming threatened or endangered. Of course municipal planning is only one tool to conserve natural areas. Other means include federal and provincial parks and protected areas, voluntary stewardship of private lands, and conservation easements and lands held by land trusts, conservation authorities and other organizations.

### MEETING THE CHALLENGE IN RURAL ONTARIO

Where exactly are the natural heritage features and which ones are significant? Each county and township must answer these questions to make a good Official Plan. This isn't always easy, and requires scientific and technical resources that are often not available to small rural municipalities. The Eastern Ontario Natural

Heritage Working Group has proposed a means of answering these questions. This Working Group was established in 2002 among partner organizations in eastern Ontario with expertise in conservation biology, GIS mapping, data analysis and community networking. The purpose of the Working Group was to assist municipalities in meeting the natural heritage conservation requirements of the *Planning Act* by filling gaps in the information available to municipalities and planners, and also to provide this natural heritage information to conservation organizations and other interested parties. The working group produced a report to municipalities and interested citizens in eastern Ontario in 2003 that provides information and mapping about woodlands, wetlands, wildlife habitat, and natural connections.

The report may be used by municipalities in preparing official plans or by other interested parties for conservation planning. The complete report entitled *Natural Heritage Features in Eastern Ontario*, July 2003, is available online at [www.cpaws-ov.org/naturalheritage](http://www.cpaws-ov.org/naturalheritage). The results of this work only cover a part of the Canadian side of the Thousand Islands Ecosystem, and form the basis of the maps in Chapters 4, 5, 6 and 7 of this atlas.



Parks Canada

*Shorelines are sensitive wildlife habitats.*



Parks Canada

*Shoreline development along the Thousand Islands Parkway. Official Plans determine the patterns of development that shape our communities, and affect wildlife habitat.*

**Box 3.1 Ontario Planning Policy**

The following is an excerpt from the Provincial Policy Statement (PPS), issued under the *Planning Act* of Ontario. The *Planning Act* requires that, in exercising any authority that affects planning matters, planning authorities “shall have regard to” policy statements issued under the Act.

**2.3 Natural Heritage**

2.3.1 *Natural heritage features and areas* will be protected from incompatible development.

a) *Development and site alteration* will not be permitted in:

- *significant wetlands* south and east of the Canadian Shield; and
- *significant portions of the habitat of endangered and threatened species.*

b) *Development and site alteration* may be permitted in:

- *fish habitat;*
- *significant wetlands* in the Canadian Shield;

- *significant woodlands* south and east of the Canadian Shield;
- *significant valleylands* south and east of the Canadian Shield;
- *significant wildlife habitat;* and
- *significant areas of natural and scientific interest*

if it has been demonstrated that there will be no *negative impacts* on the natural features of the *ecological functions* for which the area is identified.

2.3.2 *Development and site alteration* may be permitted on *adjacent lands* to a) and b) if it has been demonstrated that there will be no *negative impacts* on the natural features or on the *ecological functions* for which the area is identified.

2.3.3 The diversity of natural features in an area, and the natural connections between them should be maintained, and improved where possible.

2.3.4 Nothing in policy 2.3 is intended to limit the ability of *agricultural uses* to continue.

**Box 3.2 The Eastern Ontario Natural Heritage Working Group**

Member Organization	Contact Information
Algonquin to Adirondacks Conservation Association (AACA)	Algonquin to Adirondacks Conservation Association 19 Reynolds Road, Lansdowne, Ontario K0E 1L0 Phone: (613) 659-4824, email: <a href="mailto:president@a2alink.org">president@a2alink.org</a> , web: <a href="http://www.A2Alink.org">www.A2Alink.org</a>
Canadian Parks and Wilderness Society (CPAWS)	CPAWS Ottawa Valley Chapter 601 – 880 Wellington Street, Ottawa, Ontario K1R 6K7 Phone: (613) 232-7297, email: <a href="mailto:info@cpaws-ov.org">info@cpaws-ov.org</a> , web: <a href="http://www.cpaws-ov.org">www.cpaws-ov.org</a>
Eastern Ontario Model Forest (EOMF)	Eastern Ontario Model Forest P.O. Bag 2111, Kemptville, Ontario K0G 1J0 Phone: (613) 258-8241, e-mail: <a href="mailto:modelforest@eomf.on.ca">modelforest@eomf.on.ca</a> , web: <a href="http://www.eomf.on.ca">www.eomf.on.ca</a>
Leeds Stewardship Council	Leeds Stewardship Council Box 605 Oxford Ave., Brockville, Ontario K6V 5Y8 Phone: (613) 342-8526, email: <a href="mailto:gary.neilson@mnr.gov.on.ca">gary.neilson@mnr.gov.on.ca</a> , web: <a href="http://www.ontariostewardship.org">www.ontariostewardship.org</a>
Ontario Ministry of Natural Resources (MNR)	MNR Kemptville District Office Postal Bag 2002, Concession Road, Kemptville, Ontario K0G 1J0 Phone (613) 258-8204, web: <a href="http://www.mnr.gov.on.ca">www.mnr.gov.on.ca</a>
Parks Canada	Parks Canada Ontario Region 111 Water Street East, Cornwall, Ontario H6H 6S3 Web: <a href="http://www.parkscanada.ca">www.parkscanada.ca</a>
St. Lawrence Islands National Park	St. Lawrence Islands National Park #2, County Road 5, RR #3 Phone: (613) 923-5261, web: <a href="http://www.parkscanada.ca">www.parkscanada.ca</a>
Thousand Islands-Frontenac Arch Biosphere Reserve	The Biosphere Network 19 Reynolds Road, Lansdowne, Ontario K0E 1L0 Phone: (613) 659-4824, email: <a href="mailto:info@biospherenetwork.com">info@biospherenetwork.com</a> , web: <a href="http://www.biospherenetwork.com">www.biospherenetwork.com</a>

For more information about the Eastern Ontario Natural Heritage Working Group please contact one of the member organizations or visit [www.cpaws-ov.org/naturalheritage](http://www.cpaws-ov.org/naturalheritage)



Least Bittern

Parks Canada

**Table 3.1 Protection varies among categories of natural areas**

For some Natural Heritage Features the level of protection is higher if the feature is not on the Canadian Shield bedrock, also called the Precambrian Shield. Provincial Policy allows municipalities on the Frontenac Arch the option of choosing to be “on Shield” or “off Shield”, the latter being the more protective planning approach. See Map 1.2 for the general location of the Precambrian Shield in the Thousand Islands Ecosystem.

Categories of natural areas				Protection is required through municipal Official Plans		Protection must be through other means	Authority / Information sources
				Strictly protected (see PPS 2.3.1.a)	Somewhat protected (see PPS 2.3.1.b)		
Natural Heritage Features	Wetlands	Provincially Significant	Off Shield	•			Ontario Ministry of Natural Resources (MNR) identifies wetlands and determines significance.
			On Shield		•		
		Locally Significant				•	
	Woodlands	Significant	Off Shield		•		Municipalities and others must make their own determination. The Eastern Ontario Natural Heritage Working Group (EONHWG) report and the Eastern Ontario Model Forest (EOMF) are good sources of information.
			On Shield			•	
		Not Significant				•	
	Valleylands	Significant	Off Shield		•		Municipalities and others must make their own determination.
			On Shield			•	
		Not Significant				•	
	Areas of Natural and Scientific Interest (ANSI)	Provincially Significant			•		MNR identifies ANSIs and determines significance.
		Regionally Significant				•	
		Habitat of endangered and threatened species			•		
	Fish habitat				•		MNR and the federal Fisheries and Oceans department identify fish habitat.
Wildlife habitat	Significant			•		Municipalities and others must make their own determination. MNR provides guidelines.	
	Not Significant				•		
Lands adjacent to Significant Natural Heritage Features					•	•	Municipalities and others must make their own determination.
Other natural areas (not officially designated as Natural Heritage Features)						•	Municipalities and others must make their own determination. Non-government conservation organizations are good sources of information.



## CHAPTER 4. WOODLANDS



As discussed in Chapter 3, municipal planning requires that significant woodlands be identified. This chapter explores significant woodlands in the Thousand Islands Ecosystem, based on the work of the Eastern Ontario Model Forest and the Eastern Ontario Natural Heritage Working Group.

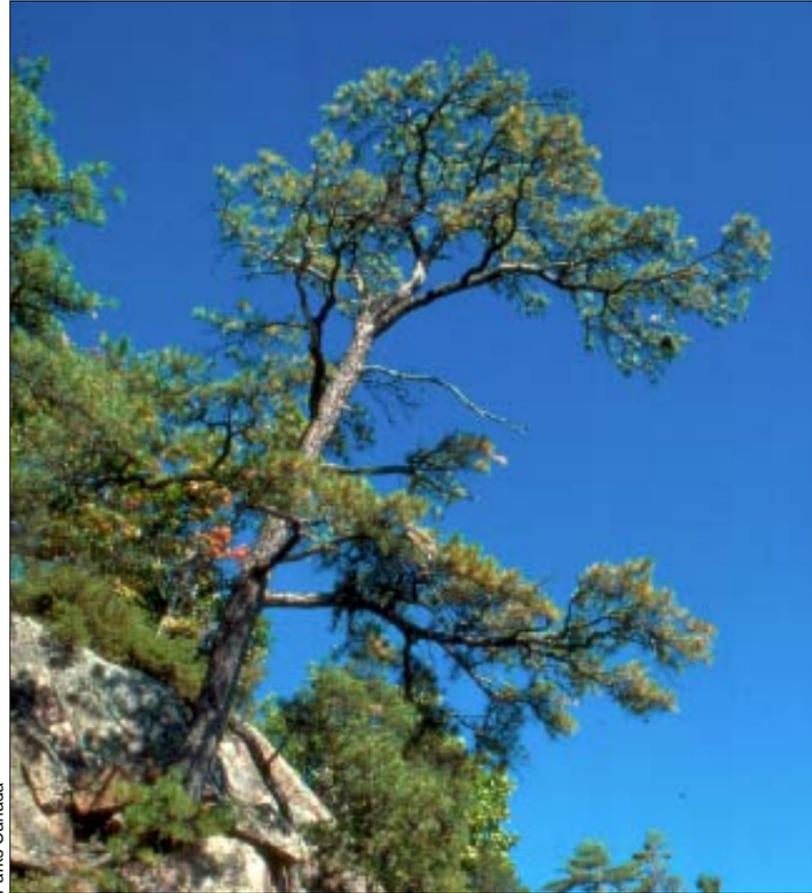
This approach represents the best possible analysis of the best available data, but is only one way of looking at significant woodlands. Information such as the rationale for each of the criteria, data sources, methodology, limitations, recommendations, and references can be found in reports entitled *Methods & Rationale for Assigning Woodland Value at the Patch Scale for Consideration in Planning and Conservation in Eastern Ontario* (Eastern Ontario Model Forest, 2003) and *Natural Heritage Features in Eastern Ontario* (Eastern Ontario Natural Heritage Working Group, 2003). The results cover only the Canadian portion of the Thousand Islands Ecosystem.

The “Woodland Valuation System” used by the Eastern Ontario Natural Heritage Working Group identifies all known woodlands and scores each one based on six criteria: patch size, forest interior, proximity to other woodlands, proximity to water, slope, and islands. Details about these criteria are summarized in Table 4.1.

For each criterion, a map was produced in which each woodland patch received a score from zero to three, based on thresholds derived from conservation biology. A higher score represents a higher natural heritage value. These results are shown in Map 4.1 (a to e).

These map layers corresponding to the six criteria were then combined into one map showing each woodland’s total score. The maximum possible score, based on the six criteria, is 18. This total score gives a general idea of the conservation value of woodlands relative to each other. These results are shown in Map 4.2.

For municipal planning purposes, each woodland needs to be classified as to whether or not it is a “Significant Woodland” in the sense of the *Planning Act*. The method shown here takes the woodland’s total score in the Woodland Valuation System and puts it into the context of an ecological target: the proportion of forest cover in its local watershed. In essence, the more forest cover there is in a watershed, the higher the total score needed for a woodland to be “significant”. Conversely, every woodland is significant in a watershed with less than 30% forest cover. Because of the limitations of the data used, we call these results “potentially significant woodlands”. The only way to be sure whether they are truly “significant woodlands” is to conduct studies on the ground. Map 4.3 shows these potential significant woodlands in the Thousand Islands Ecosystem.



Parks Canada

The Pitch Pine is a rare tree in the region.



Jean Langlois/CPAWS

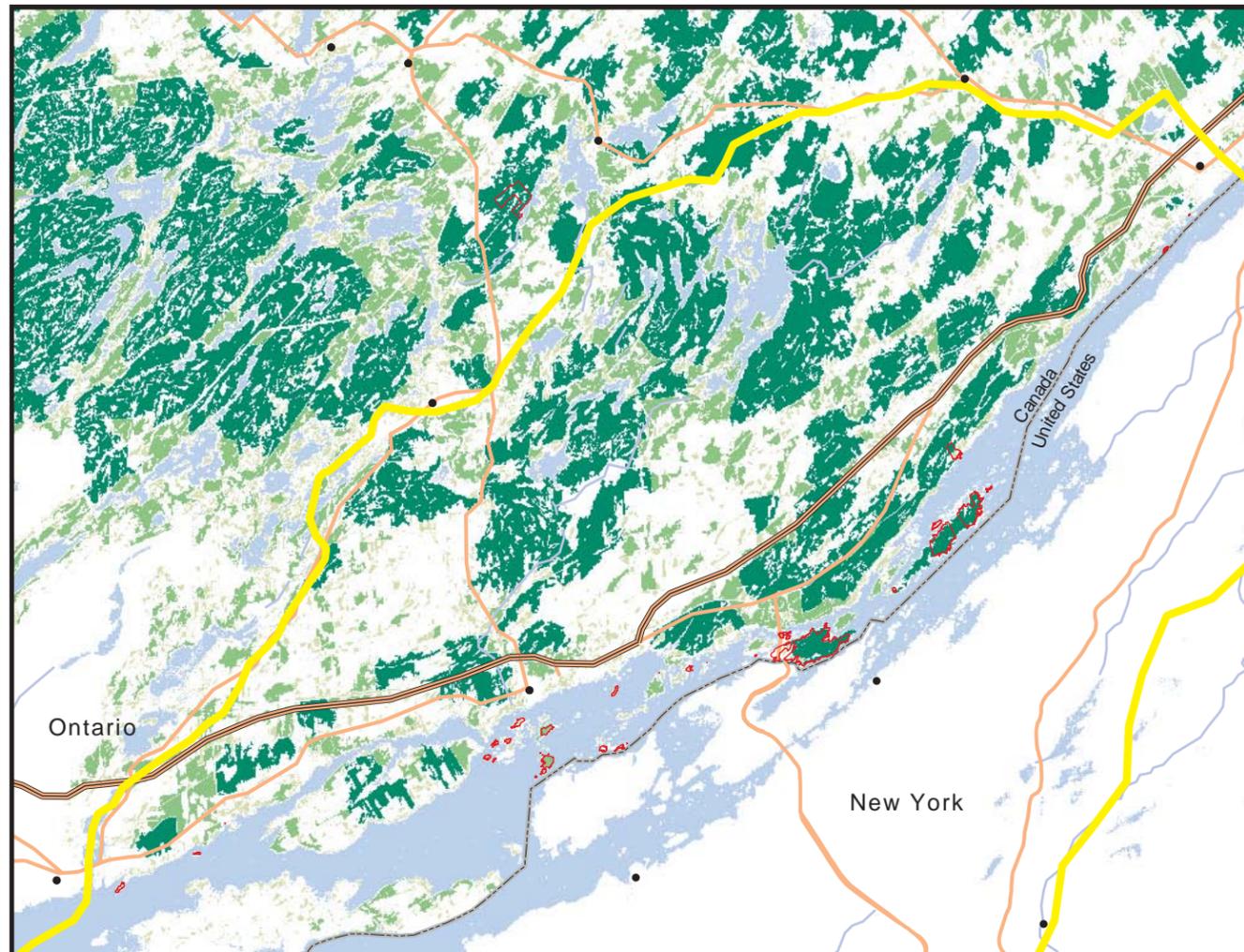
Forests help prevent erosion on steep slopes.

**Table 4.1 Woodland Valuation Criteria**

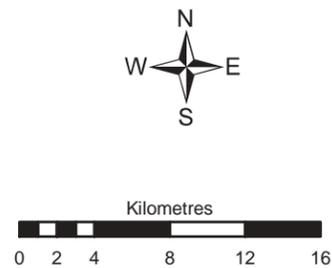
Criterion	General principle	Why it matters	How we measured it	Thresholds		Scores
				Urban	Rural	
Patch Size	Bigger is better	A larger forest patch can provide habitat for a wider range of species. A small patch can only provide habitat to species with more limited habitat requirements. Different thresholds were used for woodlands in urban areas and in rural areas.	Size of patch in hectares (ha) as determined by geographic information system (GIS) analysis.	≥ 4 ha > 2 to < 4 ≤ 2 ha	≥ 200 ha > 20 to < 200 ha ≤ 20 ha	3 2 1
Forest Interior	More interior forest is better	The species composition and structure of a forest are quite different around the edge of a patch compared to deep in a continuous forest, because the growing conditions are quite different. Human activity has fragmented forests into smaller patches, creating much more edge forest and less interior forest. As a result there is less habitat for plant and animal species that depend on interior habitat. Patches that provide forest interior have become more rare and more valuable.	The presence of at least 4 ha of interior forest, after allowing for an increasingly deeper zone of edge (from 100 to 200 metres)	≥ 4 ha interior within a 200 m edge ≥ 4 ha interior within a 150 m edge ≥ 4 ha interior within a 100 m edge < 4 ha interior within a 100 m edge		3 2 1 0
Proximity to Other Woodlands	Closer is better	Many species will make use of habitat in several patches if they are able to move among them.	Distance between closest edges of a patch and the next nearest patch.	≤ 100 m > 100 to < 250 m ≥ 250 m		3 2 1
Proximity to Water	Closer is better	Many wildlife species need access to both forest habitat and water. Nearby forest also helps maintain water quality.	Distance of woodland from a water feature's shore	≤ 30 m > 30 to < 50 m ≥ 50 m		3 2 1
Slope	Steeper is more valuable	Forest cover is very important on steep slopes to prevent soil erosion, which in turn prevents harmful sedimentation of water.	Slope angle (%) as determined by GIS analysis.	≥ 30% > 15 to < 30% ≤ 15%		3 2 1
Islands	Forested islands have high value	Woodlands on islands help maintain valuable shoreline habitat, but islands are highly susceptible to development in this region. Islands in natural condition are highly valued by the community.	Woodlands on islands are given additional points	Island		3

Map 4.1.a

### Woodlands – Patch Size



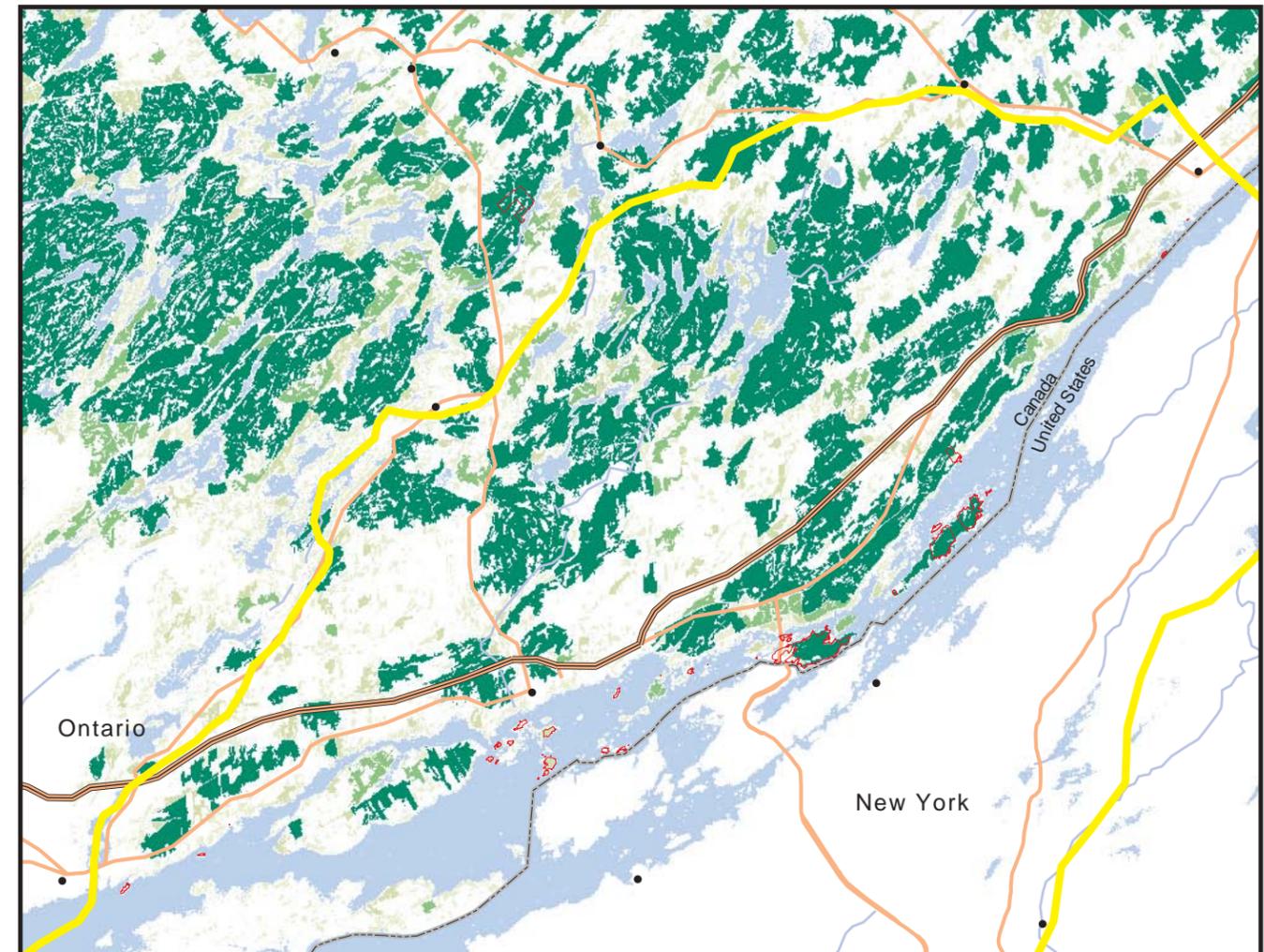
- Legend**
- 200ha or larger in rural area / 4ha or larger in urban area
  - 20ha to 200ha in rural area / 2ha to 4ha in urban area
  - 20ha or smaller in rural area / 2 ha or smaller in urban area
  - Greater Park Ecosystem
  - St. Lawrence Islands National Park
  - Water
  - Highway 401
  - Major Road
  - International Boundary
  - City or Town



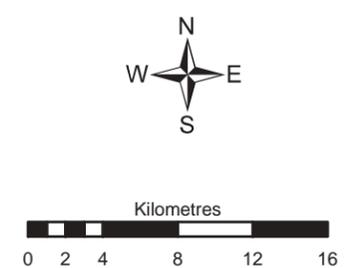
Projection:  
UTM NAD 83 Zone 18N

Map 4.1.b

### Woodlands – Forest Interior



- Legend**
- High interior value
  - Medium interior value
  - Low interior value
  - No interior value (less than 4ha)
  - Greater Park Ecosystem
  - St. Lawrence Islands National Park
  - Water
  - Highway 401
  - Major Road
  - International Boundary
  - City or Town

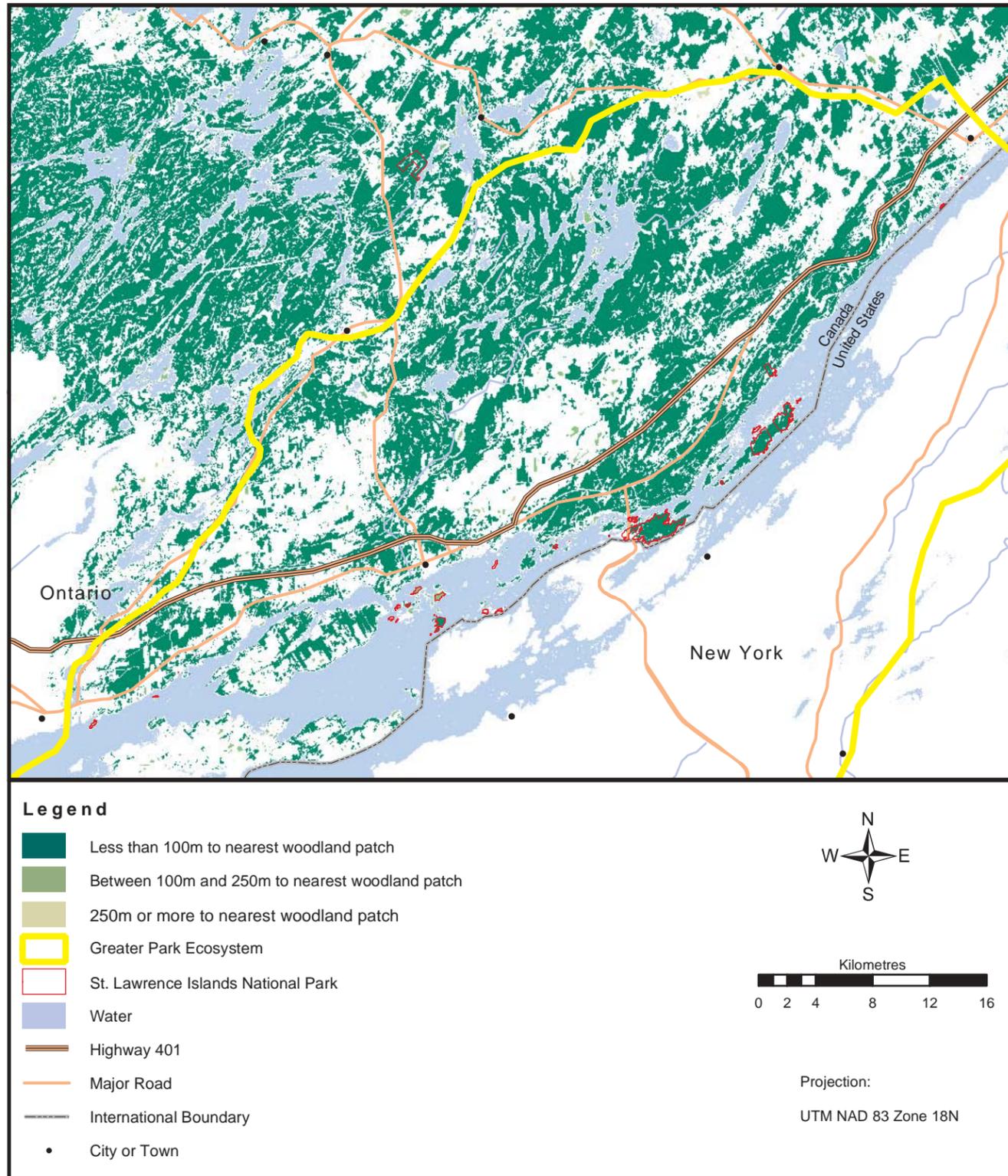


Projection:  
UTM NAD 83 Zone 18N

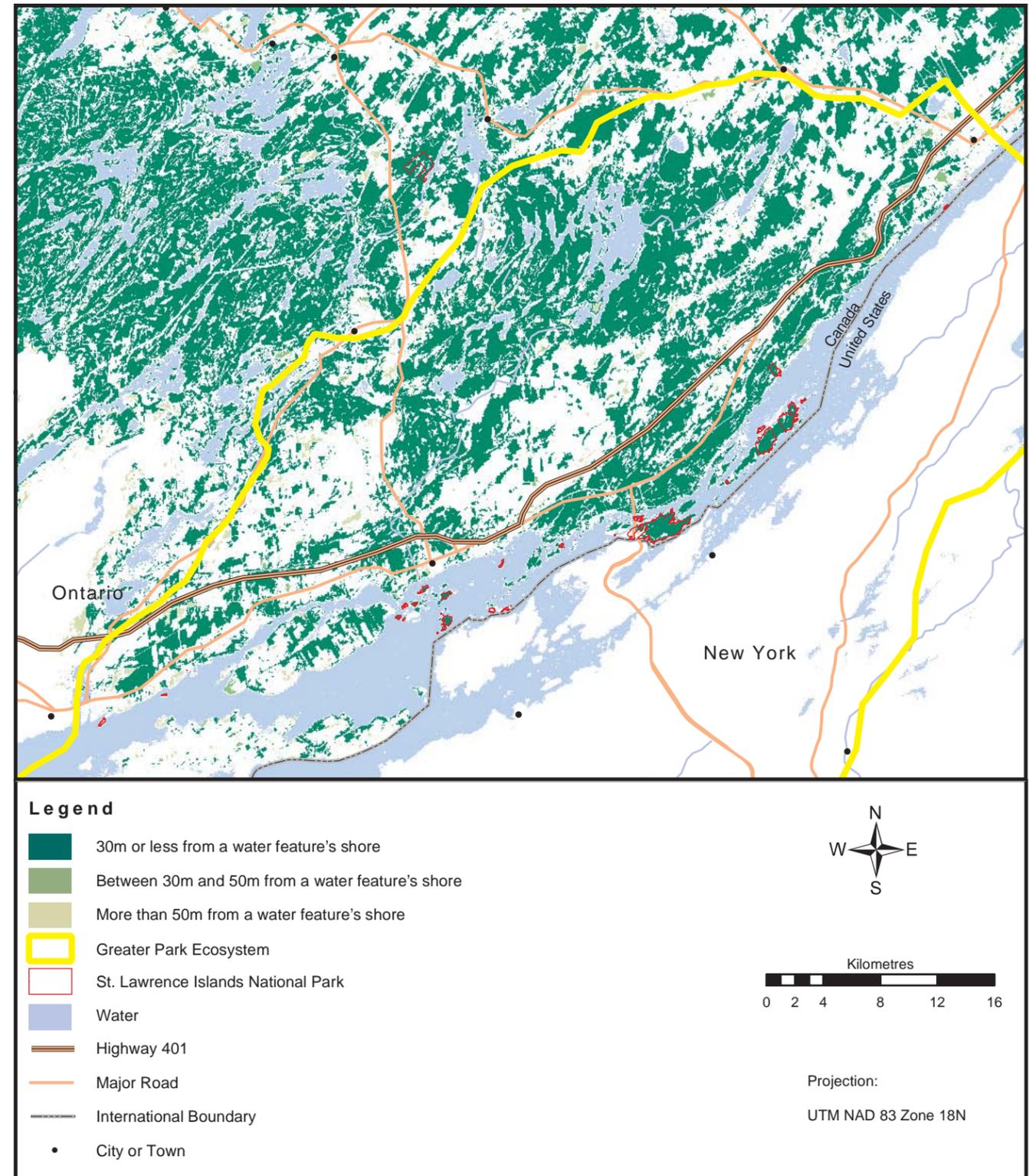
Maps produced by the Canadian Parks and Wilderness Society – Ottawa Valley Chapter, based on the work of the Eastern Ontario Natural Heritage Working Group (EONHWG)

Data Sources: EONHWG (which includes Algonquin to Adirondacks Conservation Association, Canadian Parks and Wilderness Society – Ottawa Valley Chapter, Eastern Ontario Model Forest, Leeds Stewardship Council, Ontario Ministry of Natural Resources, Parks Canada, St. Lawrence Islands National Park, Thousand Islands – Frontenac Arch Biosphere Reserve Network, United Counties of Leeds and Grenville), GeoGratis

Map 4.1.c Woodlands – Proximity to Other Woodlands



Map 4.1.d Woodlands – Proximity to Water

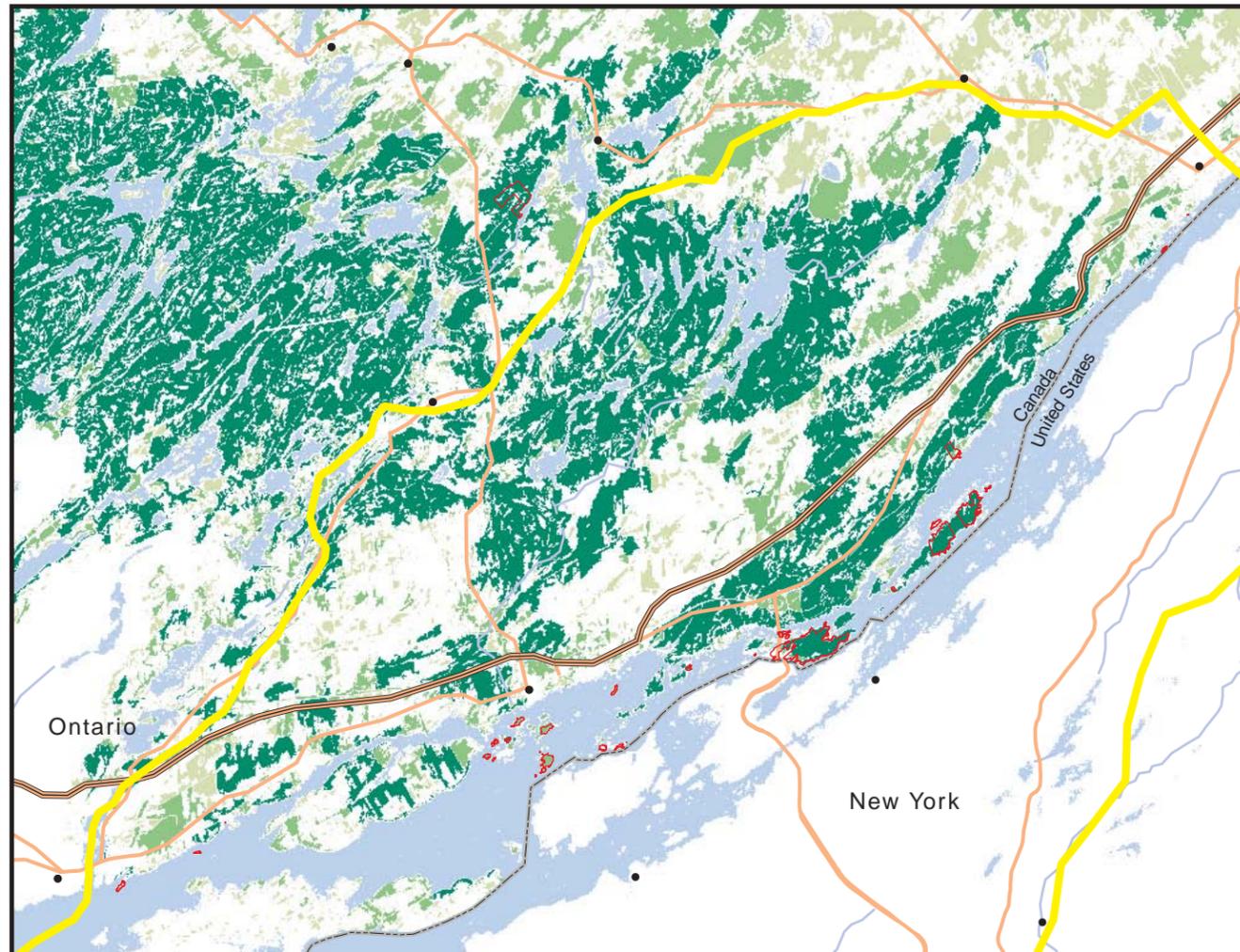


Maps produced by the Canadian Parks and Wilderness Society – Ottawa Valley Chapter, based on the work of the Eastern Ontario Natural Heritage Working Group (EONHWG)

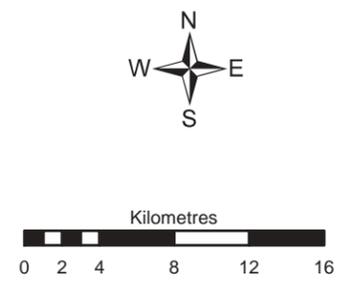
Data Sources: EONHWG (which includes Algonquin to Adirondacks Conservation Association, Canadian Parks and Wilderness Society – Ottawa Valley Chapter, Eastern Ontario Model Forest, Leeds Stewardship Council, Ontario Ministry of Natural Resources, Parks Canada, St. Lawrence Islands National Park, Thousand Islands – Frontenac Arch Biosphere Reserve Network, United Counties of Leeds and Grenville), GeoGratis

Map 4.1.e

### Woodlands – Slope Angle



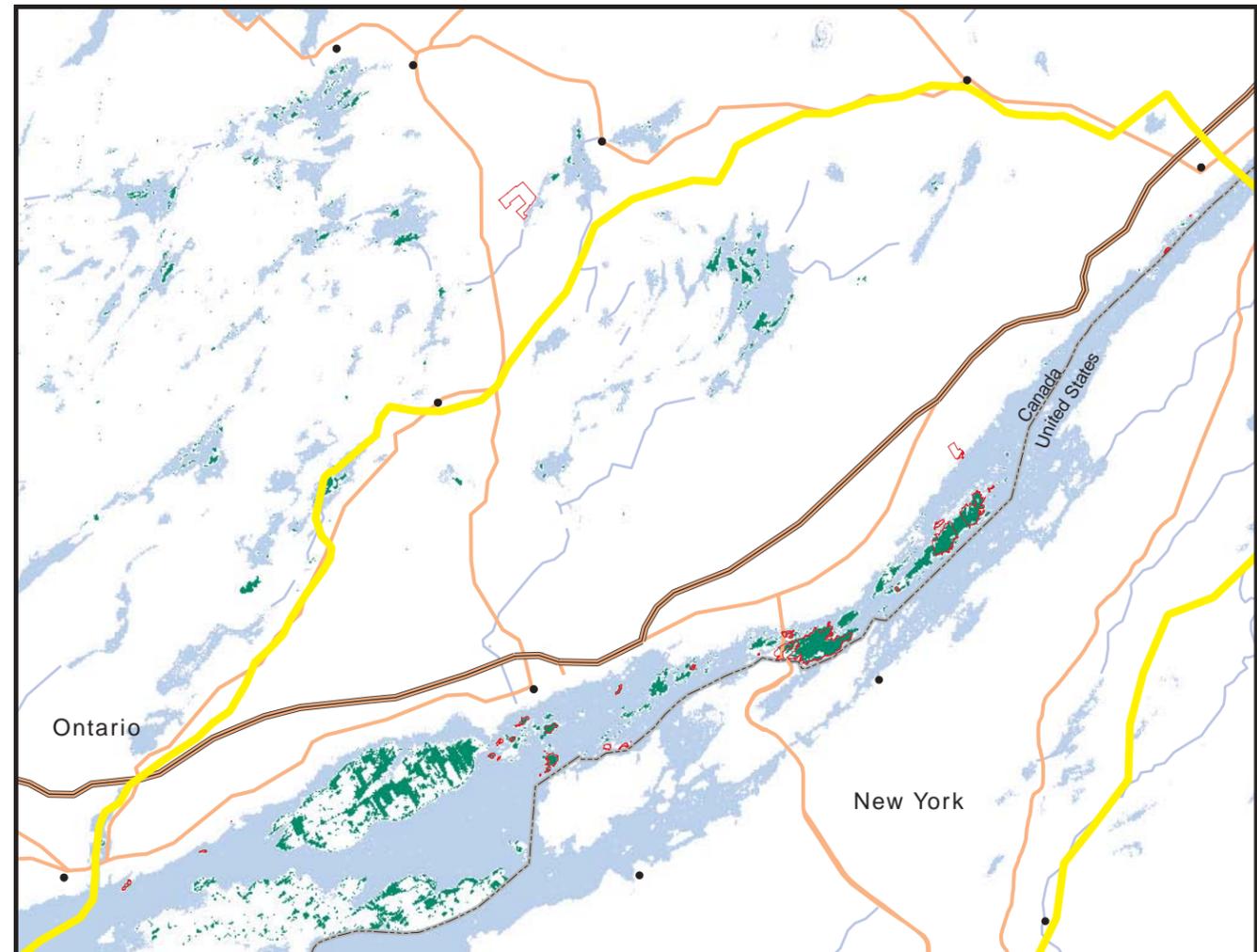
- Legend**
- Slope 30% or greater
  - Slope between 15% and 30%
  - Slope 15% or less
  - Greater Park Ecosystem
  - St. Lawrence Islands National Park
  - Water
  - Highway 401
  - Major Road
  - International Boundary
  - City or Town



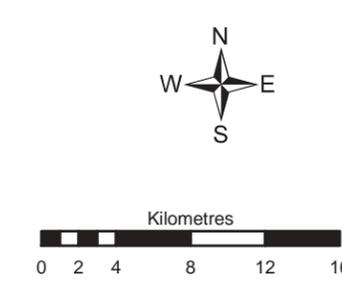
Projection:  
UTM NAD 83 Zone 18N

Map 4.1.f

### Woodlands – Wooded Islands



- Legend**
- Wooded Island
  - Greater Park Ecosystem
  - St. Lawrence Islands National Park
  - Water
  - Highway 401
  - Major Road
  - International Boundary
  - City or Town



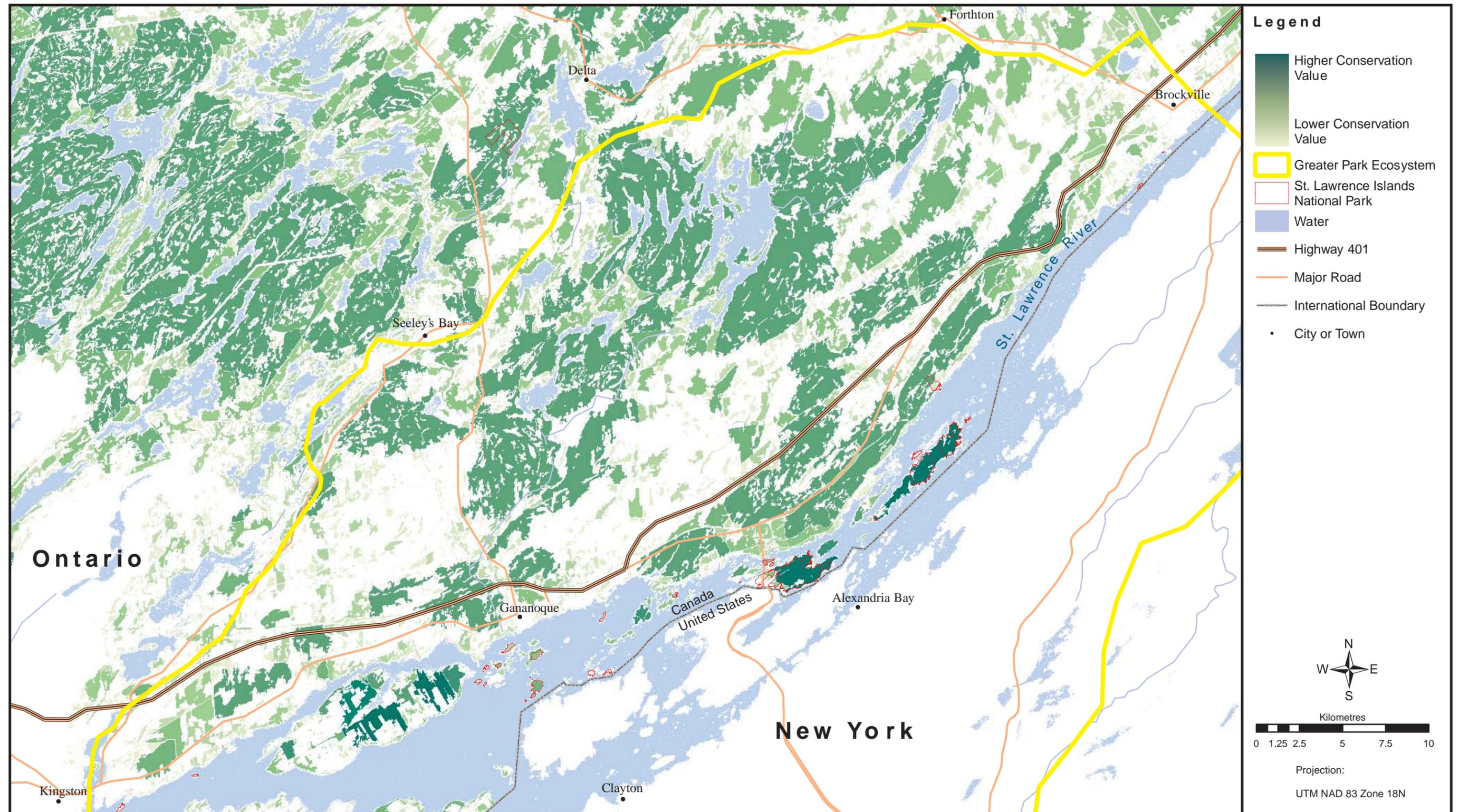
Projection:  
UTM NAD 83 Zone 18N

Maps produced by the Canadian Parks and Wilderness Society – Ottawa Valley Chapter, based on the work of the Eastern Ontario Natural Heritage Working Group (EONHWG)

Data Sources: EONHWG (which includes Algonquin to Adirondacks Conservation Association, Canadian Parks and Wilderness Society – Ottawa Valley Chapter, Eastern Ontario Model Forest, Leeds Stewardship Council, Ontario Ministry of Natural Resources, Parks Canada, St. Lawrence Islands National Park, Thousand Islands – Frontenac Arch Biosphere Reserve Network, United Counties of Leeds and Grenville), GeoGratis

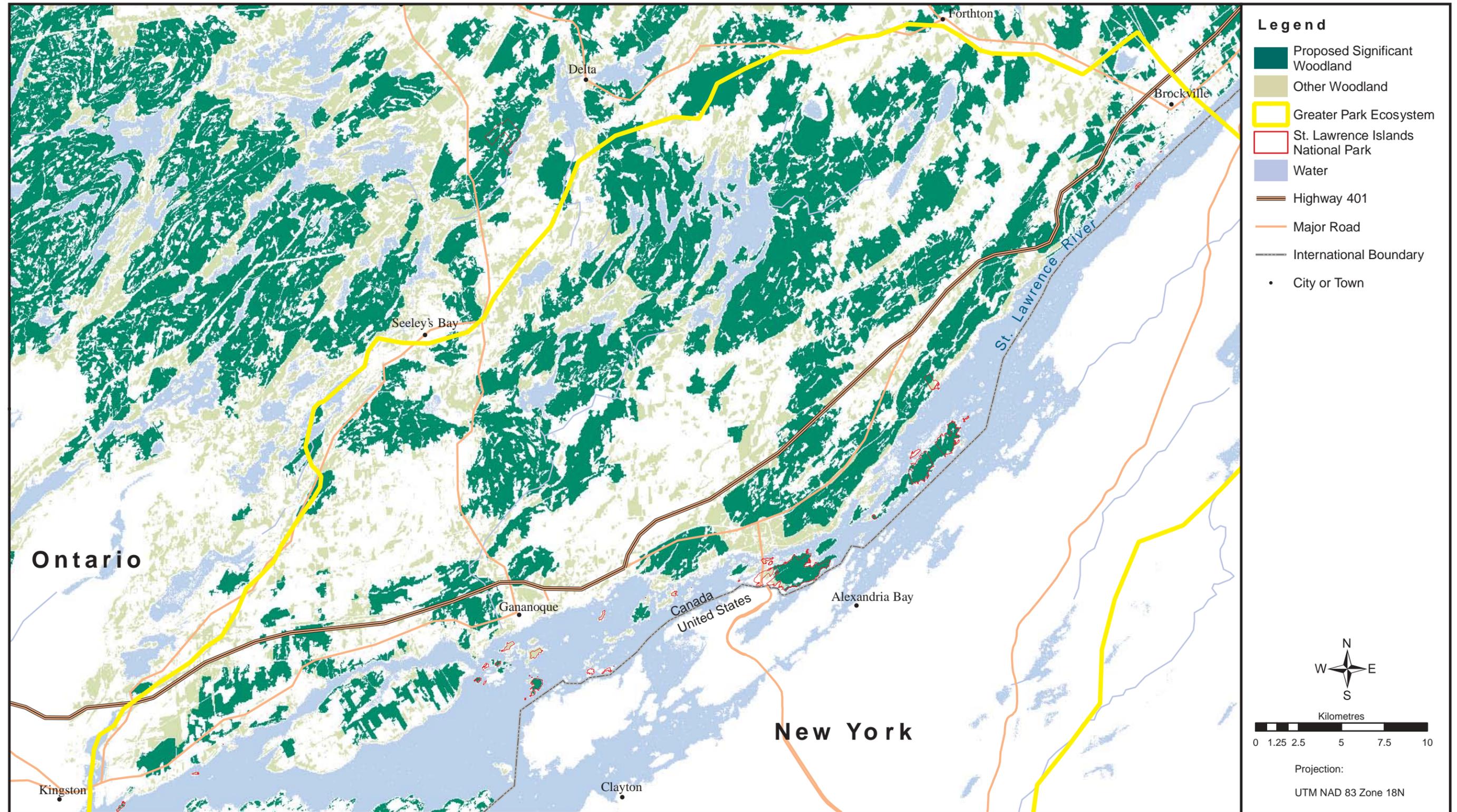
Map 4.2

# Woodlands – Relative Conservation Value



Map 4.3

# Potential Significant Woodlands



Maps produced by the Canadian Parks and Wilderness Society – Ottawa Valley Chapter, based on the work of the Eastern Ontario Natural Heritage Working Group (EONHWG)

Data Sources: EONHWG (which includes Algonquin to Adirondacks Conservation Association, Canadian Parks and Wilderness Society – Ottawa Valley Chapter, Eastern Ontario Model Forest, Leeds Stewardship Council, Ontario Ministry of Natural Resources, Parks Canada, St. Lawrence Islands National Park, Thousand Islands – Frontenac Arch Biosphere Reserve Network, United Counties of Leeds and Grenville), GeoGratis



## CHAPTER 5. WETLANDS



This chapter explores wetlands in the Thousand Islands Ecosystem, many of which have never been officially evaluated by the provincial government to see if they meet the criteria to be “significant” in terms of planning policy. We rely on the work of the Eastern Ontario Natural Heritage Working Group to identify wetlands of high potential conservation value. This system combines information about wetlands in a geographic information system to calculate a conservation value “score” for each one. Wetlands with the highest scores are more likely to have a high conservation value but this must be confirmed by field studies. Because of data limitations results exist only for the Canadian portion of the region.

The Wetland Valuation System developed by the Eastern Ontario Natural Heritage Working Group identifies all known wetlands (including unevaluated wetlands) and scores each one based on nine criteria. The criteria are: wetland size, wetland interior, wetland edge, adjacent vegetation, disturbance, wetland habitat linkage, wetland hydrological linkage, headwater wetland, and flood attenuation. The importance of these criteria is summarized in Table 5.1.

For each criterion, a map was produced in which each wetland received a score from zero to three, based on thresholds derived from conservation biology. A higher score represents a higher potential conservation value. These results are shown in Map 5.1 (a to i).



Parks Canada

*Wetlands reduce flooding by temporarily holding water that would otherwise run downstream. Wetlands along rivers, like this one in a bay along the St. Lawrence, are called riverine wetlands. Those on the edges of lakes are called lacustrine wetlands and play a greater role in flood reduction. Palustrine wetlands are effective at reducing flooding and have little inflow or outflow. Isolated wetlands with no surface outflow are actually the most effective at flood reduction.*

These map layers corresponding to the nine criteria were then combined into one map layer showing each wetland’s total score. The maximum possible score, based on the nine criteria, is 27. This total score gives a general idea of the conservation value of wetlands relative to each other. These results are shown in Map 5.2, which reveals that many wetlands in the Thousand Islands Ecosystem have a high potential conservation value.

Some wetlands have been evaluated in the field by the Ontario Ministry of Natural Resources. As a result some of these evaluated wetlands are deemed “provincially significant” while others are deemed “locally significant”. Provincially significant wetlands are protected in municipal plans according to provincial policy. Map 5.3 shows the provincially significant wetlands in the Thousand Islands Ecosystem.

Map 5.4 shows the provincially significant wetlands (Map 5.3) along with the results of the wetland valuation system (Map 5.2). By combining these two layers we see that some unevaluated wetlands score as high or higher than provincially significant wetlands. In other words, some of the unevaluated

wetlands could turn out to be provincially significant if and when they are evaluated.



Parks Canada

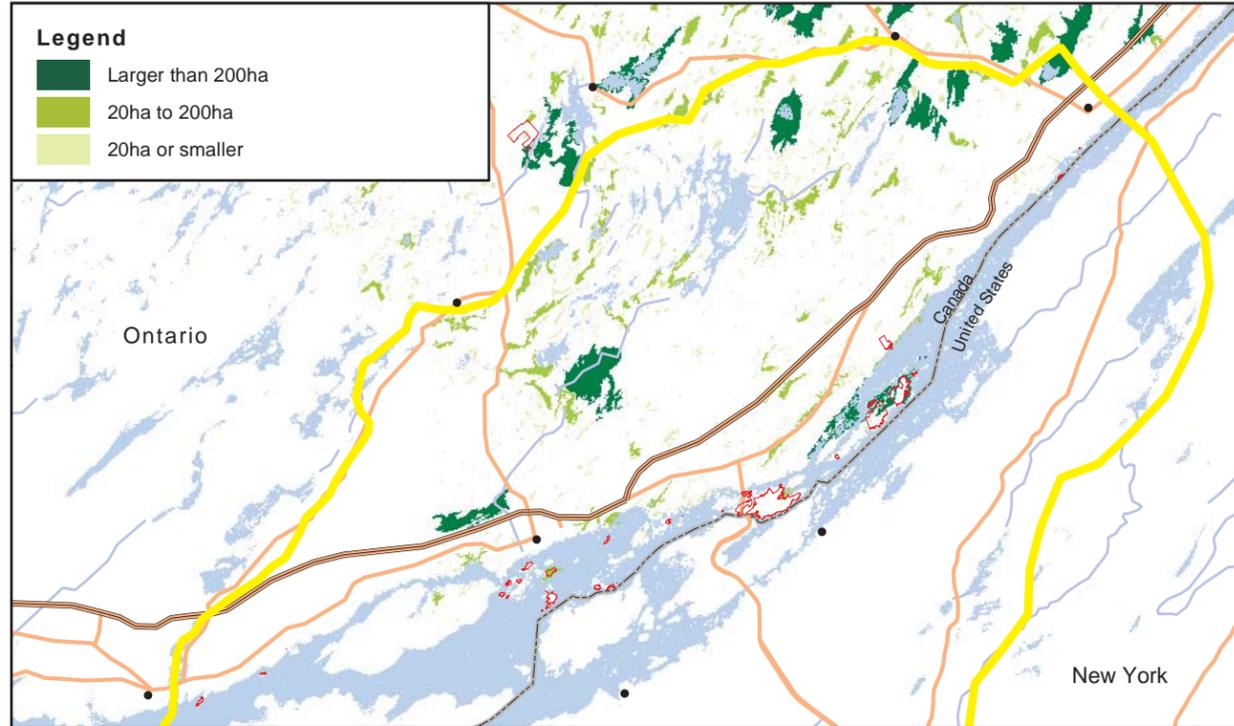
*This beaver may be lucky this time, but many amphibians, reptiles, and mammals are killed on roads. That is why the conservation value of a wetland is reduced by a high road density.*

**Table 5.1 Wetland Valuation Criteria**

Criterion	General principle	Why it matters	How we measured it	Thresholds	Scores
Wetland Size	Bigger is better	A larger wetland can provide habitat for a wider range of species. Some species that use wetland habitat will not use a wetland if it is too small.	Size of wetland in hectares (ha) as determined by geographic information system (GIS) analysis.	> 200 ha > 20 and ≤ 200 ha ≤ 20 ha	3 2 1
Wetland Interior	More interior wetland is better	The shape of a wetland influences the density, diversity, and type of species it can support. This criterion applies more to swamps than to other types of wetlands.	The presence of more than 4 hectares (ha) of interior wetland, after allowing for an increasingly deeper zone of edge (from 100 to 200 metres)	> 4 ha interior within a 200 m edge > 4 ha interior within a 150 m edge > 4 ha interior within a 100 m edge ≤ 4 ha interior within a 100 m edge	3 2 1 0
Wetland Edge	More water edge is better	"Edge" in this case refers to the interface between wetland vegetation and open water. This intermingling of habitats is important for many species. This criterion applies more to marshes than to other wetland types.	The perimeter of the open water as a proportion of the perimeter of the wetland. (A 1 to 1 ratio gives a proportion of 1.0)	≥ 1.0 ≥ 0.5 and < 1.0 < 0.5 No open water within or adjacent to wetland.	3 2 1 0
Adjacent Vegetation	More adjacent natural vegetation is better	In addition to providing a buffer and filtering out excess nutrients, adjacent natural vegetation is critical for many wetland-dependent species.	Depth of buffer zone containing more than 50% natural vegetation. Wetland must also have natural vegetation adjacent to more than 50% of its boundary.	240 m buffer 120 m buffer 50 m buffer 50 m buffer ≤ 50% vegetated	3 2 1 0
Wetland Disturbance	Fewer roads nearby is better	Research shows that the species richness of birds, mammals, reptiles, amphibians, and plants in a wetland is negatively correlated with the density of paved roads in the landscape around the wetland.	Road density in wetland and within 2 Km of wetland, measured as metres of road per square kilometre (m/Km <sup>2</sup> )	< 914 m/Km <sup>2</sup> ≥ 914 and < 2429 m/Km <sup>2</sup> ≥ 2429 m/Km <sup>2</sup>	3 2 1
Wetland Habitat Linkage	Closer is better	Wildlife can make use of several wetlands if they are close enough together.	Straight-line distance to nearest wetland	< 500 m 500 to 750 m 750 to 1000 m ≥ 1000 m	3 2 1 0
Wetland Hydrological Linkage	More linked is better	Aquatic species can make use of habitat in several wetlands if they are connected by water. Hydrologically linked wetlands function together in reducing flood peaks in a watershed.	Shortest distance to nearest wetland following a water course	< 500 m ≥ 500 and < 1500 m ≥ 1500 and < 4000 m ≥ 4000 m	3 2 1 0
Headwater Wetland	Headwater wetlands have high conservation value	Wetlands in the headwaters of a watershed protect water quality and quantity.	Wetland is the source of a first order stream	Headwater wetland Not a headwater wetland	3 0
Wetland Flood Attenuation	Better flood control ability has a higher value	By reducing flood peaks in areas downstream, wetlands protect downstream shoreline areas from erosion and sedimentation. This protects fish spawning areas and other wildlife habitat. The ability to control flooding depends on the type of wetland.	Wetlands along rivers, called riverine wetlands, are the least effective. Those on the edges of lakes, called lacustrine wetlands, can be effective if the lake is not too large. Palustrine wetlands, with little inflow or outflow, are more effective. Isolated surface outflows are the most effective.	Isolated wetland Palustrine wetland, or lacustrine wetland ≥ 50% size of lake Riverine wetland, or lacustrine wetland < 50% size of lake	3 2 1

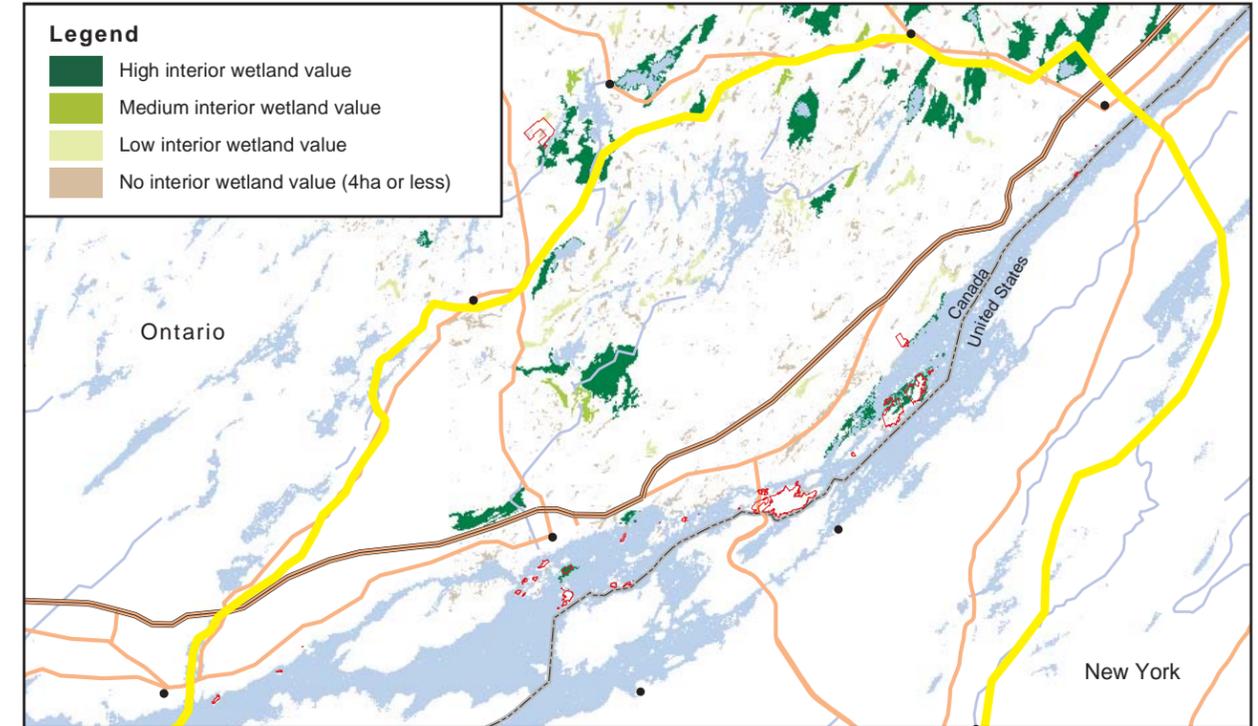
Map 5.1.a

**Wetland Size**



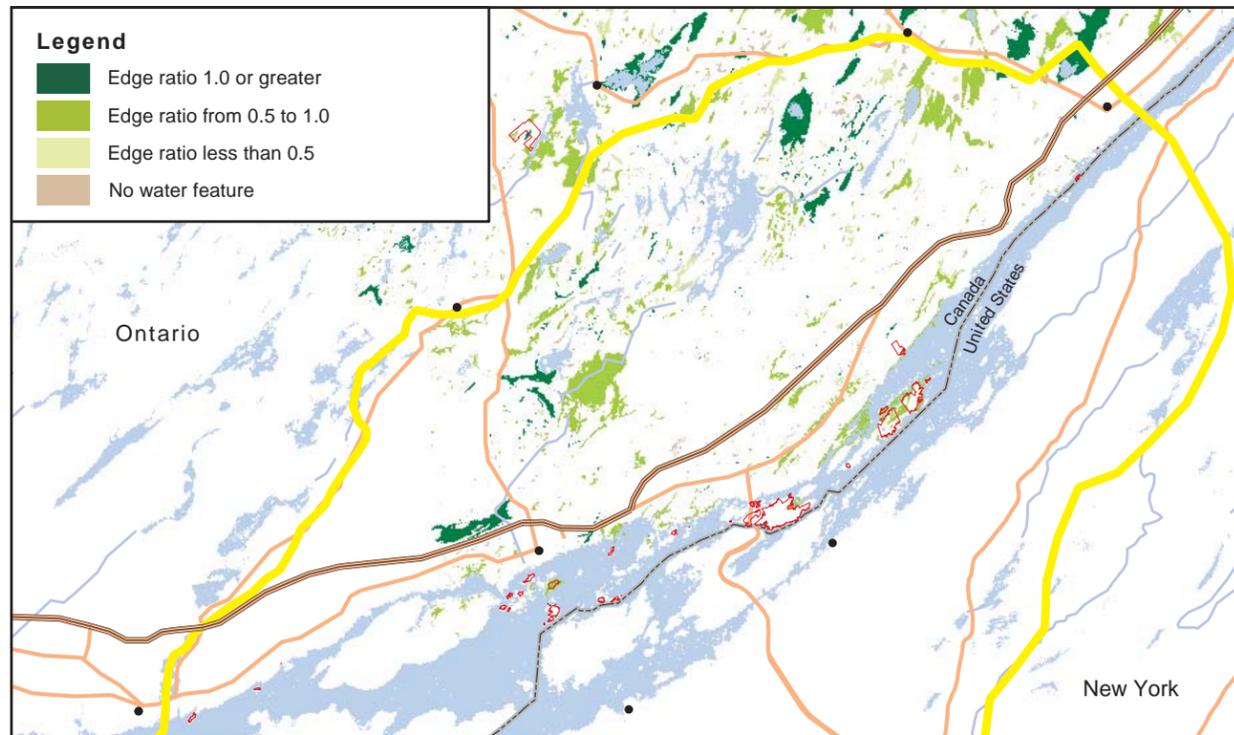
Map 5.1.b

**Wetland Interior**



Map 5.1.c

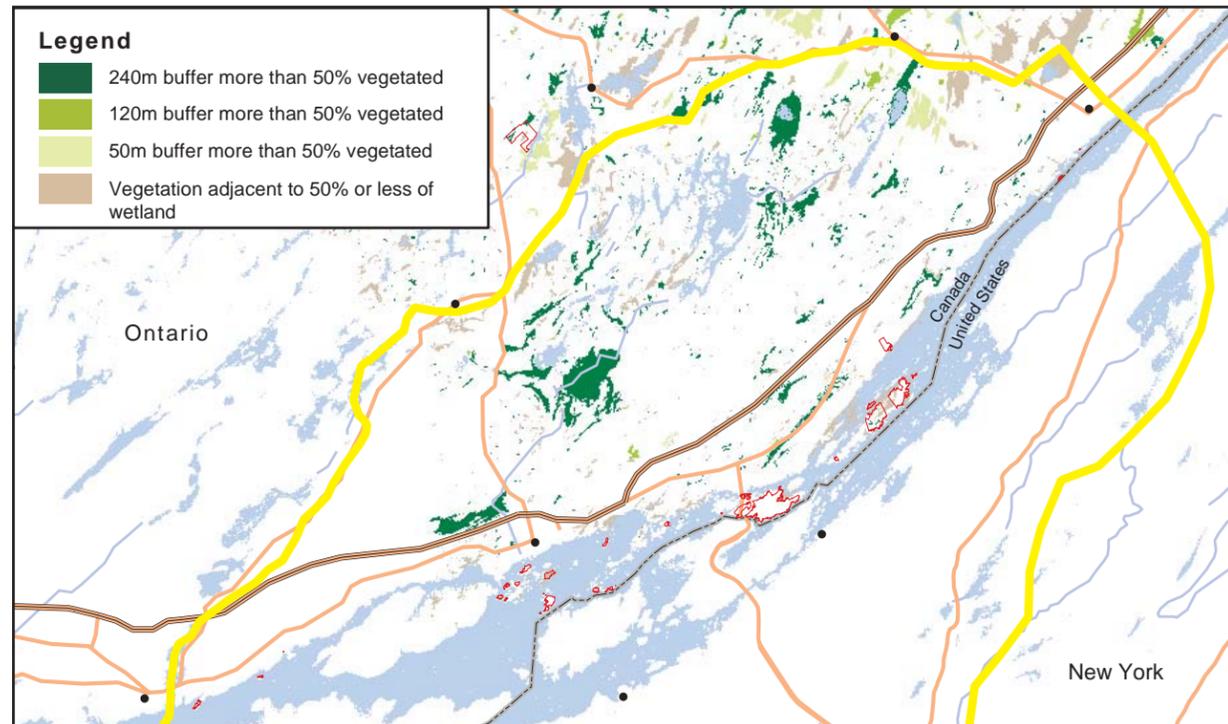
**Wetland Edge**



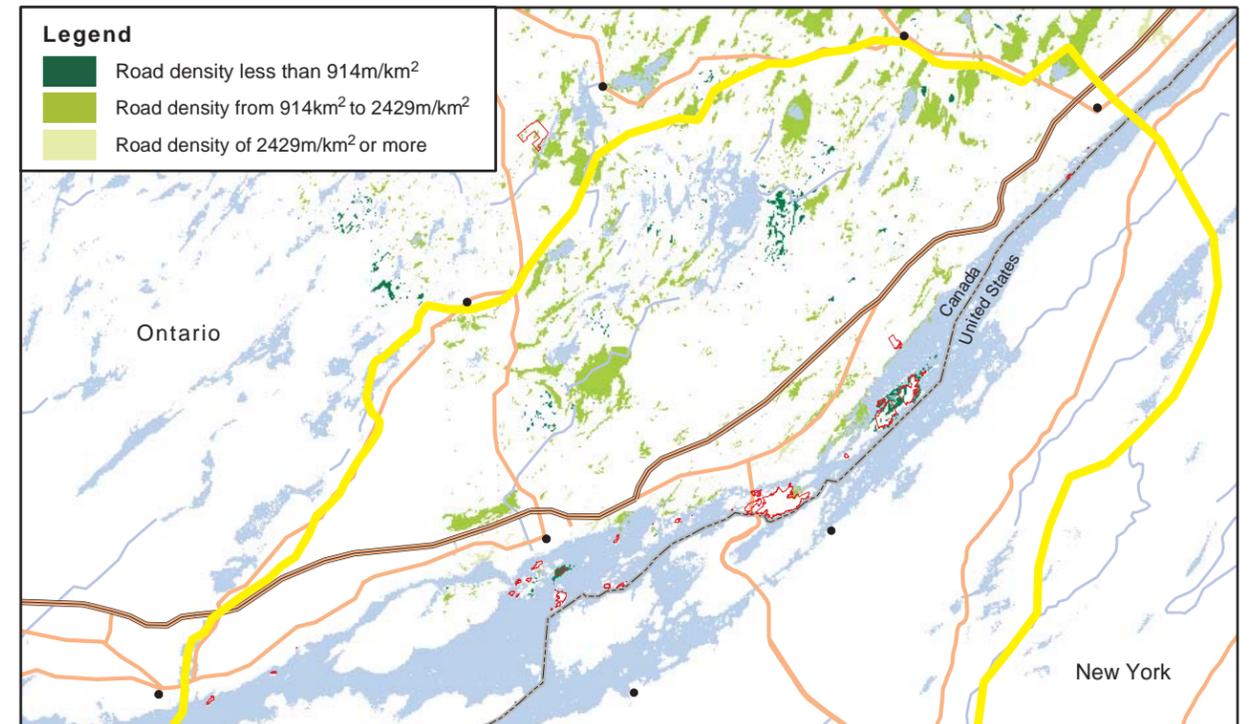
Map produced by the Canadian Parks and Wilderness Society – Ottawa Valley Chapter, based on the work of the Eastern Ontario Natural Heritage Working Group (EONHWG)

Data Sources: EONHWG (which includes Algonquin to Adirondacks Conservation Association, Canadian Parks and Wilderness Society – Ottawa Valley Chapter, Eastern Ontario Model Forest, Leeds Stewardship Council, Ontario Ministry of Natural Resources, Parks Canada, St. Lawrence Islands National Park, Thousand Islands – Frontenac Arch Biosphere Reserve Network, United Counties of Leeds and Grenville), GeoGratis

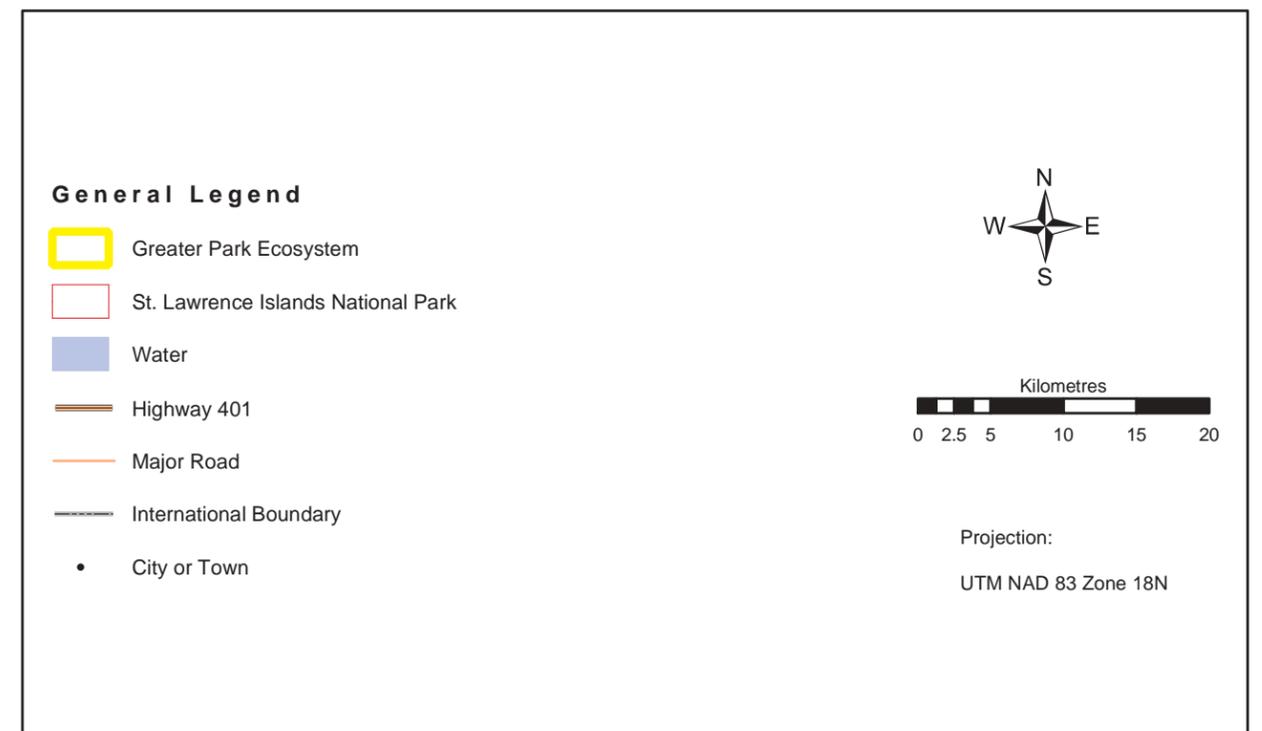
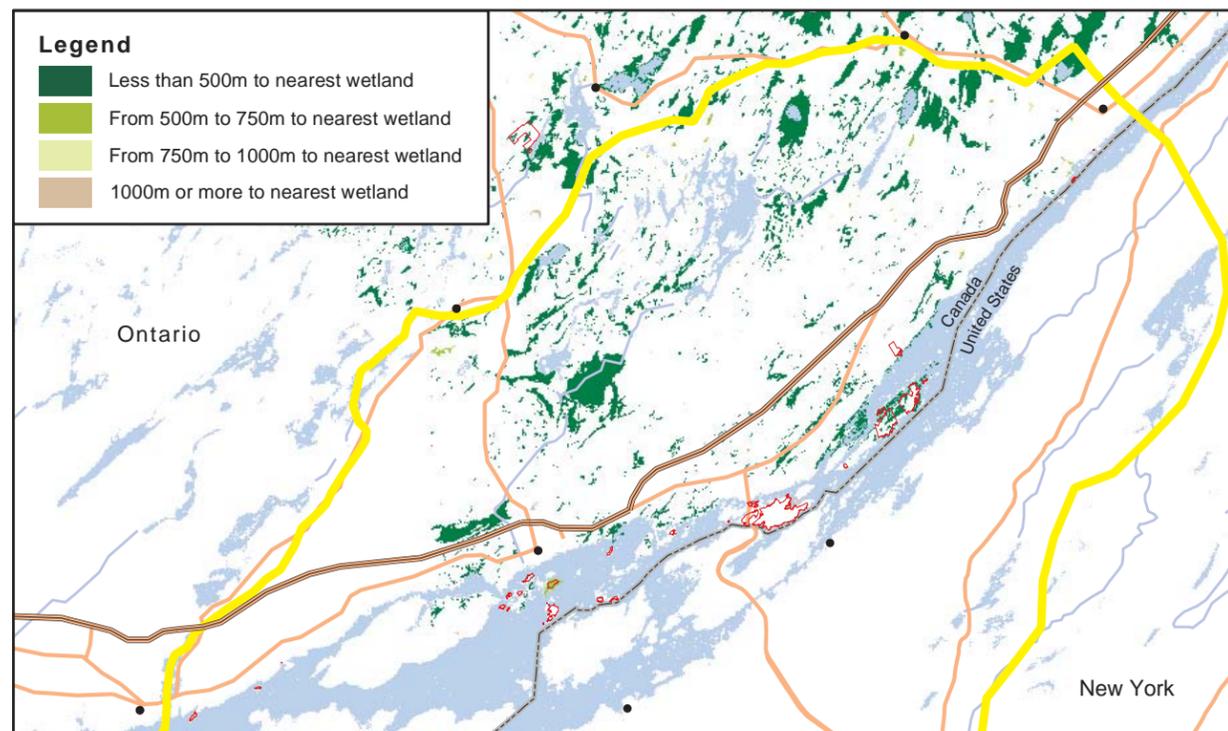
Map 5.1.d **Wetland Adjacent Vegetation**



Map 5.1.e **Wetland Disturbance**



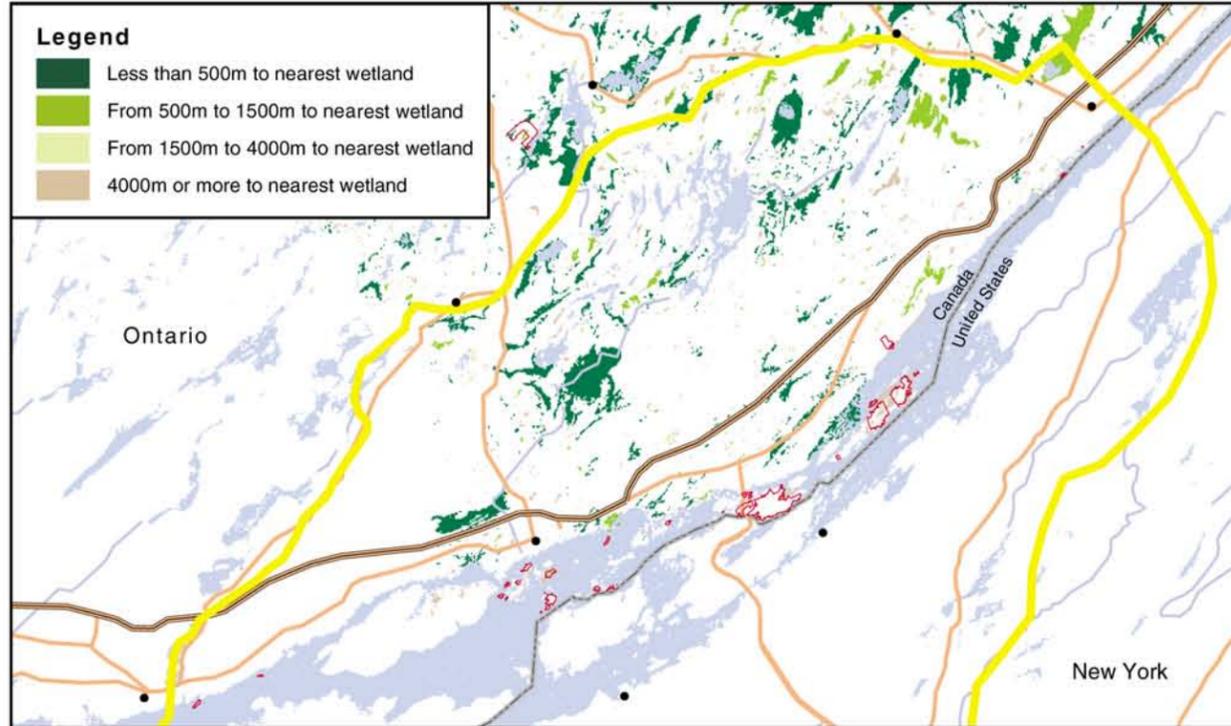
Map 5.1.f **Wetland Habitat Linkage**



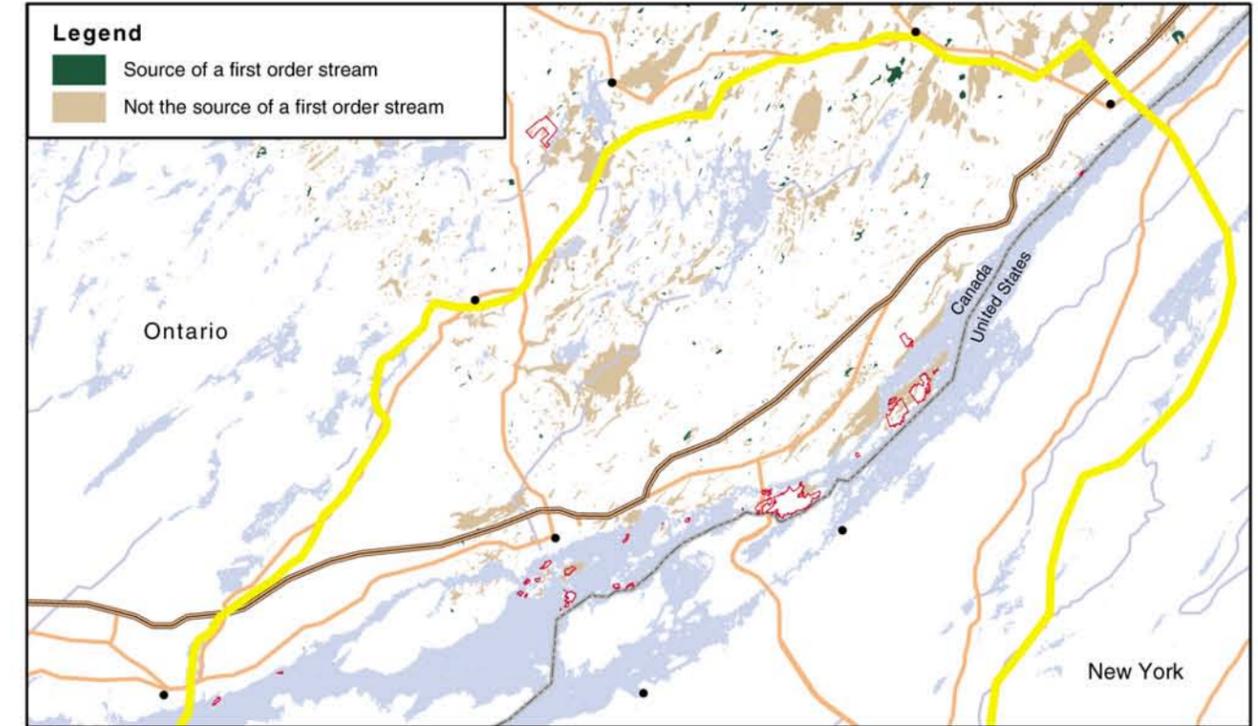
Map produced by the Canadian Parks and Wilderness Society – Ottawa Valley Chapter, based on the work of the Eastern Ontario Natural Heritage Working Group (EONHWG)

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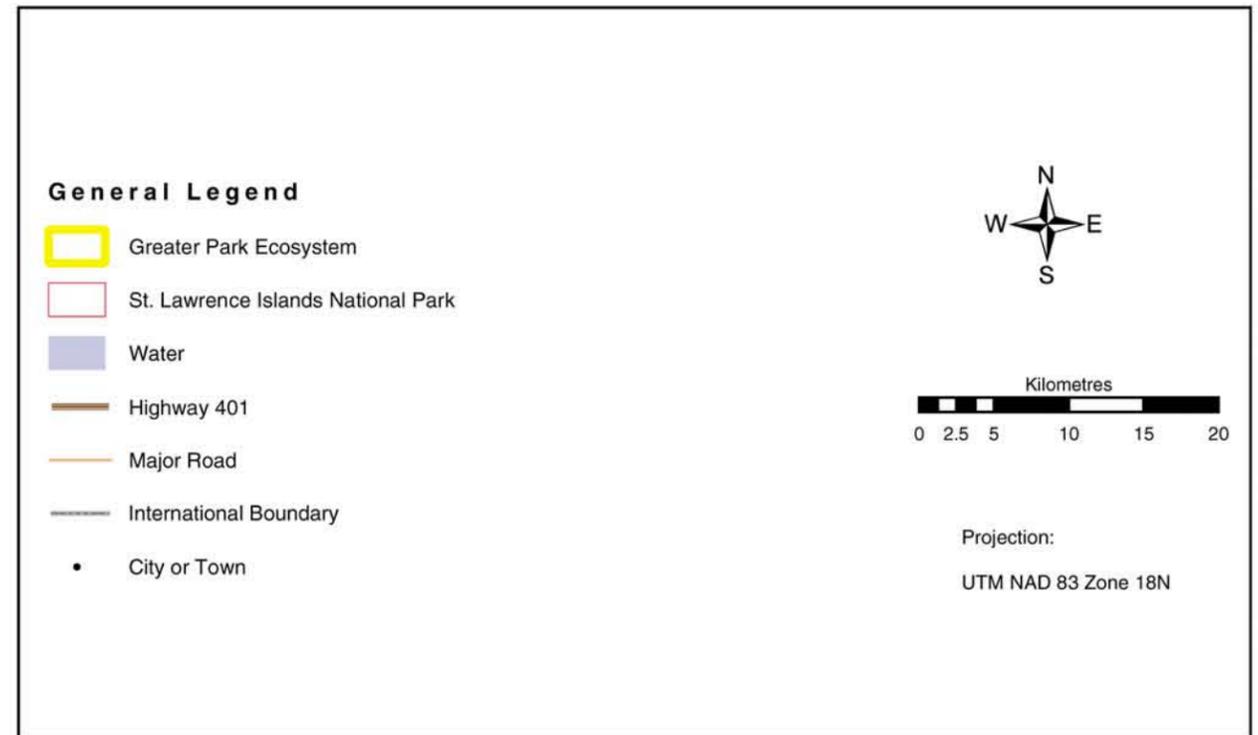
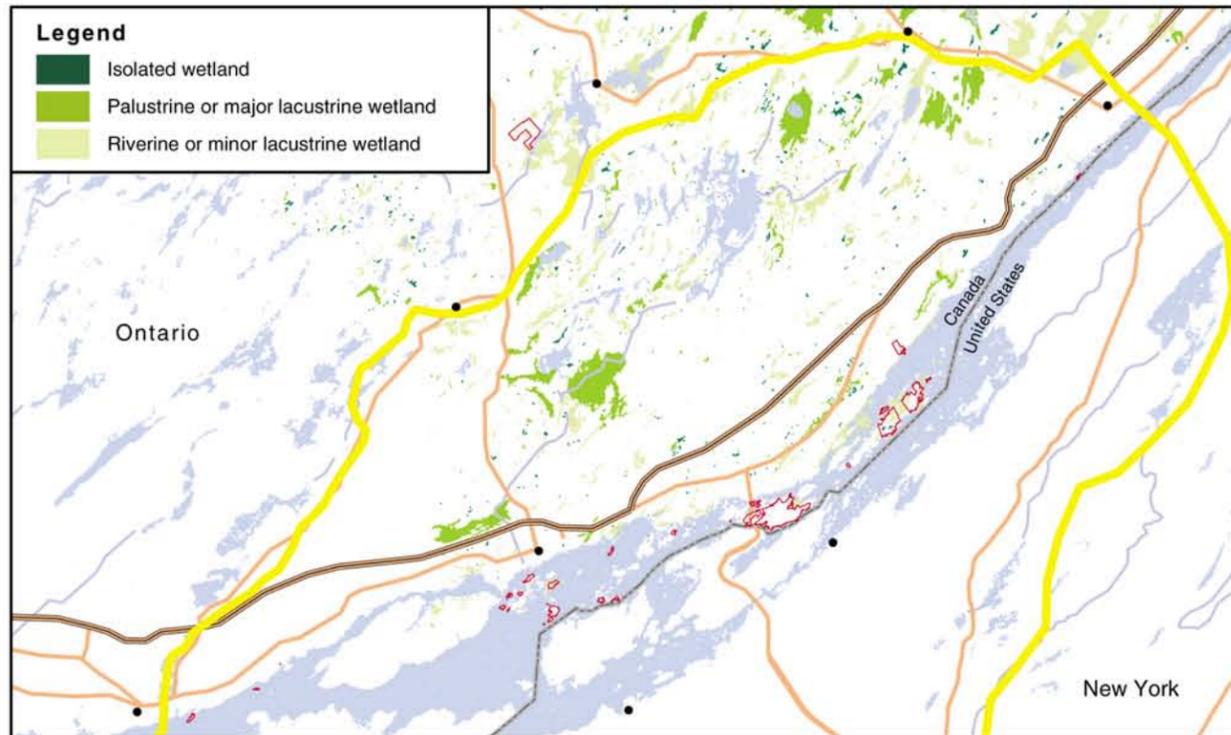
Map 5.1.g Wetland Hydrological Linkage



Map 5.1.h Wetland Headwater



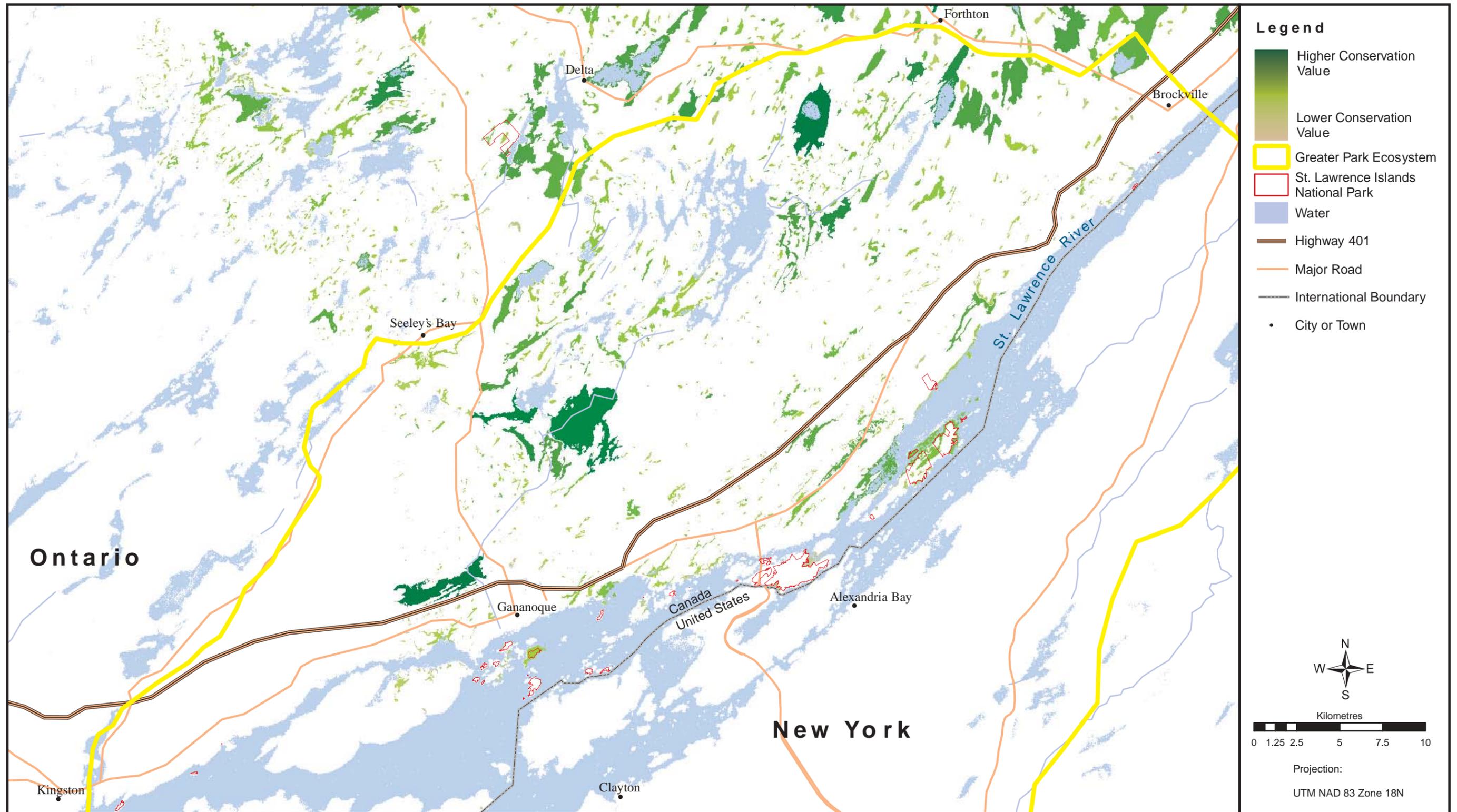
Map 5.1.i Wetland Flood Attenuation



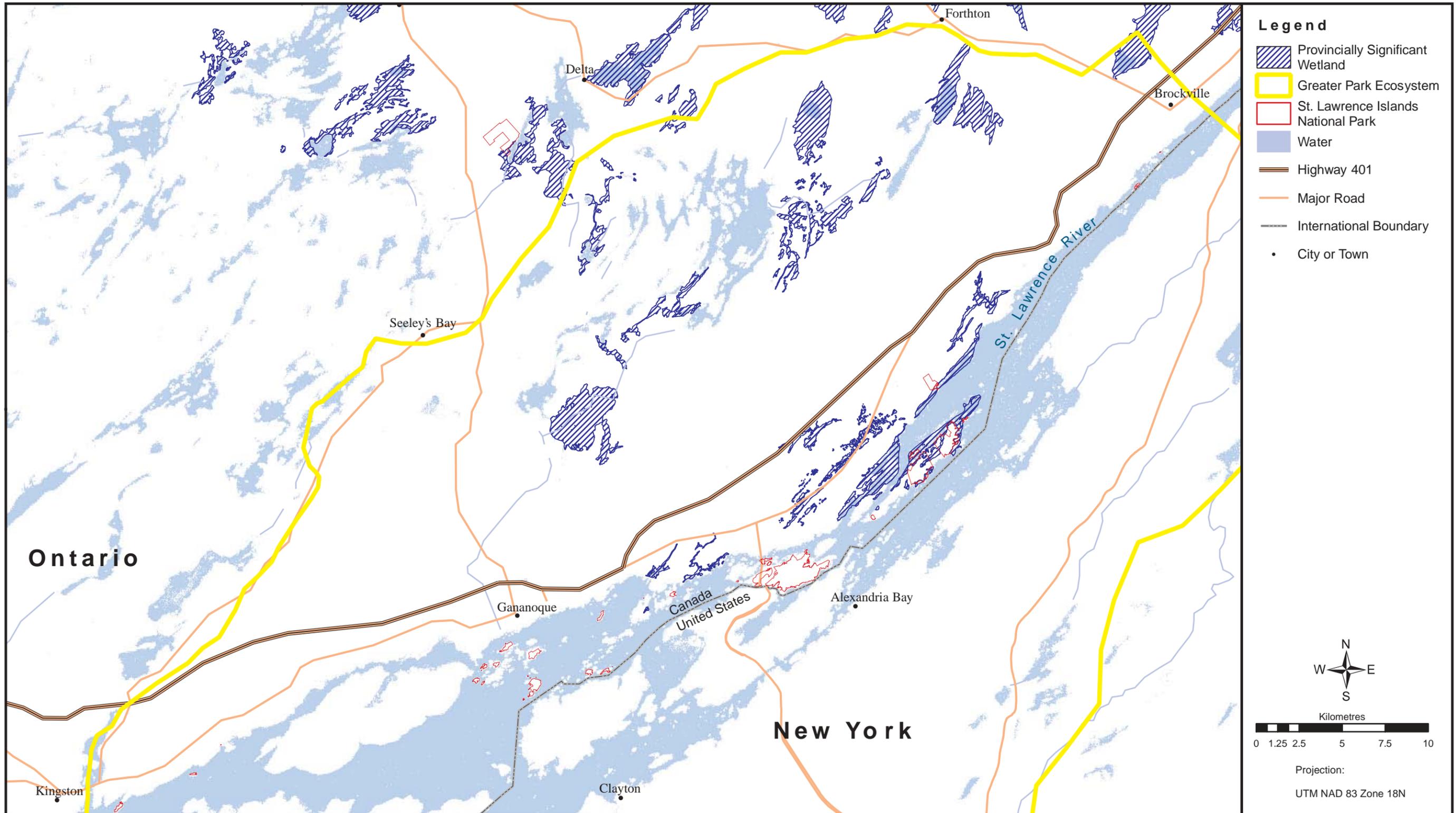
Map produced by the Canadian Parks and Wilderness Society – Ottawa Valley Chapter, based on the work of the Eastern Ontario Natural Heritage Working Group (EONHWG)

Data Sources: EONHWG (which includes Algonquin to Adirondacks Conservation Association, Canadian Parks and Wilderness Society – Ottawa Valley Chapter, Eastern Ontario Model Forest, Leeds Stewardship Council, Ontario Ministry of Natural Resources, Parks Canada, St. Lawrence Islands National Park, Thousand Islands – Frontenac Arch Biosphere Reserve Network, United Counties of Leeds and Grenville), GeoGratis

# Valuated Wetlands – Relative Conservation Value



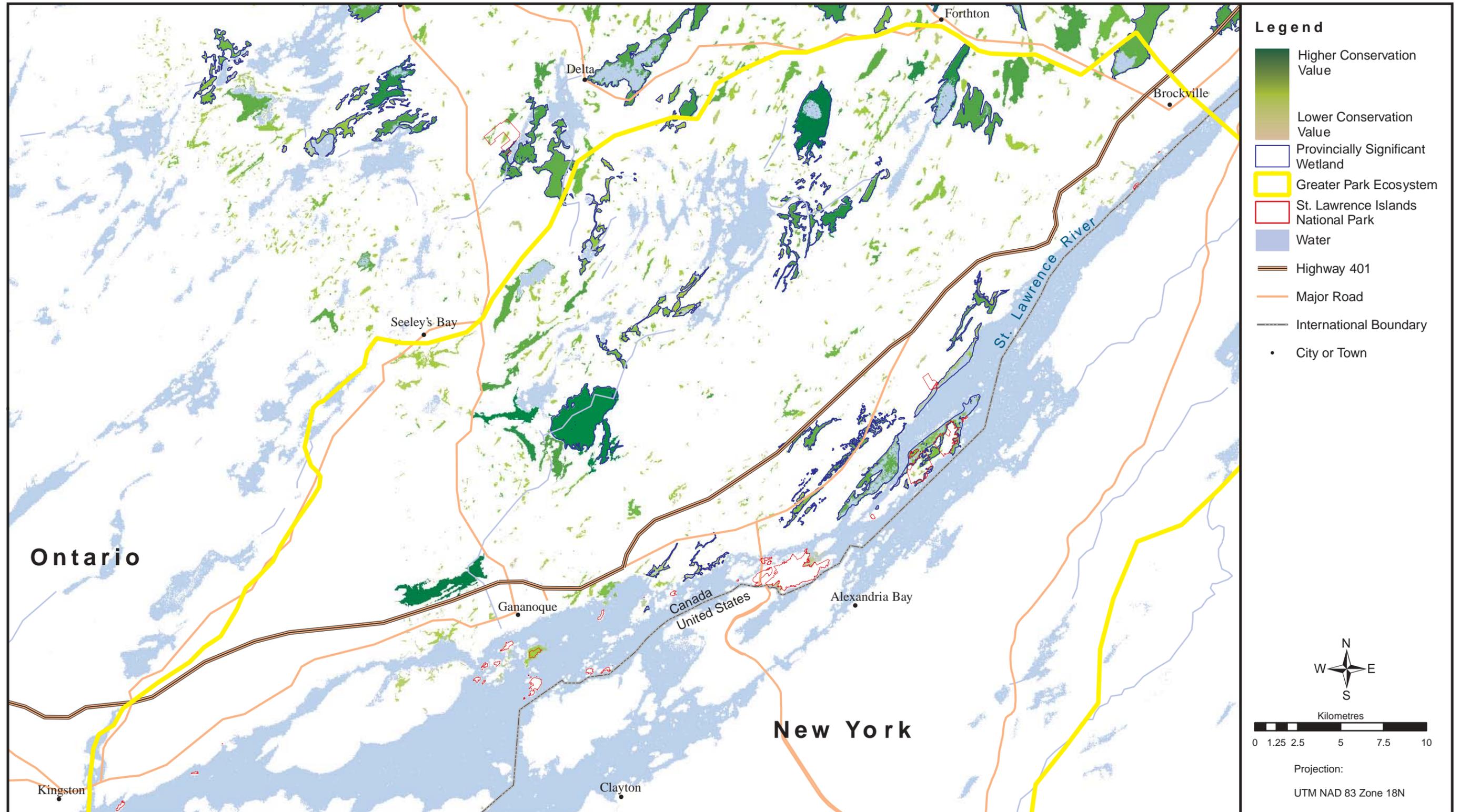
# Provincially Significant Wetlands



Map produced by the Canadian Parks and Wilderness Society – Ottawa Valley Chapter, based on the work of the Eastern Ontario Natural Heritage Working Group (EONHWG)

Data Sources: EONHWG (which includes Algonquin to Adirondacks Conservation Association, Canadian Parks and Wilderness Society – Ottawa Valley Chapter, Eastern Ontario Model Forest, Leeds Stewardship Council, Ontario Ministry of Natural Resources, Parks Canada, St. Lawrence Islands National Park, Thousand Islands – Frontenac Arch Biosphere Reserve Network, United Counties of Leeds and Grenville), GeoGratis

# Valuated Wetlands and Provincially Significant Wetlands



Map produced by the Canadian Parks and Wilderness Society – Ottawa Valley Chapter, based on the work of the Eastern Ontario Natural Heritage Working Group (EONHWG)

Data Sources: EONHWG (which includes Algonquin to Adirondacks Conservation Association, Canadian Parks and Wilderness Society – Ottawa Valley Chapter, Eastern Ontario Model Forest, Leeds Stewardship Council, Ontario Ministry of Natural Resources, Parks Canada, St. Lawrence Islands National Park, Thousand Islands – Frontenac Arch Biosphere Reserve Network, United Counties of Leeds and Grenville), GeoGratis

## CHAPTER 6. NATURAL CONNECTIONS



### MOVEMENT AND CONNECTIONS ARE IMPORTANT

All wildlife needs to move in some way or another to survive. Individual animals need to move among different habitats to meet all their needs such as finding food, shelter, and mates. Movement of individuals within a population is also important because it allows for the exchange of genetic material. This movement maintains the genetic diversity that allows the species to adapt to changing conditions. In the longer term, all plant and animal species must adjust their distribution at the continental scale to survive changes in climate and habitat.

All this movement is affected by the habitat patterns on the landscape. For example, interconnected habitat provides safe passage, while urban development and highways can be barriers to wildlife movement. A major challenge for many species is habitat fragmentation, the breaking up of natural habitat into smaller patches isolated from each other by human-built barriers. Maintaining natural connections, or interconnected habitat, is one of the most important conservation challenges in the Thousand Islands Ecosystem. Fortunately, significant amounts of natural habitat still remain here.

### THE JOURNEY OF ALICE THE MOOSE

The story of Alice the Moose is a remarkable illustration of the importance of interconnected habitat, and the Algonquin to Adirondacks connection. The route of her two-year journey from the Adirondack Park to Algonquin Park is shown on Map 6.1

Researchers in Adirondack Park put a radio transmitter collar and ear tags on a young female moose in 1998 in order to study her movements. Over the spring and summer of 1999 she gradually moved westward through the park. In the fall she moved out of the park and travelled towards the St. Lawrence River. Alice spent the winter months of 1999-2000 in the Thousand Islands Ecosystem. She then made her way north along the Frontenac Axis over the spring and summer of 2000. During the winter of 2000-2001 Alice made her way into Algonquin Park, where she later died of unknown causes.

We know some of the details of Alice’s journey because local residents spotted her ear tags and various wildlife biologists tracked her radio signal. How many other animals are making similar travels through the region without being noticed?

### PLANNING FOR CONNECTIONS

Policy 2.3.3 of the Provincial Policy Statement states that natural connections “should be maintained, and improved where possible”.

Map 6.2 shows one way of looking at habitat connections in the Thousand Islands Ecosystem. Based on the results of a project called *Big Picture 2002*, this map identifies core natural areas and natural habitat connections among them. Using the best available data on Ontario’s settled and wild lands, *Big Picture 2002* has produced a map showing a vision of the future natural landscape of southern Ontario, emphasizing core natural areas and habitat connections. These cores and corridors include current naturally vegetated areas, as well as theoretical or potential corridors in regions of high development, agricultural use and natural habitat fragmentation. *Big Picture 2002* is a partnership between the Nature Conservancy of Canada and the Ontario Ministry of Natural Resources Natural Heritage Information Centre, and is not intended to be prescriptive. Rather, it has been designed as a tool to assist municipal planning, conservation and natural heritage restoration.

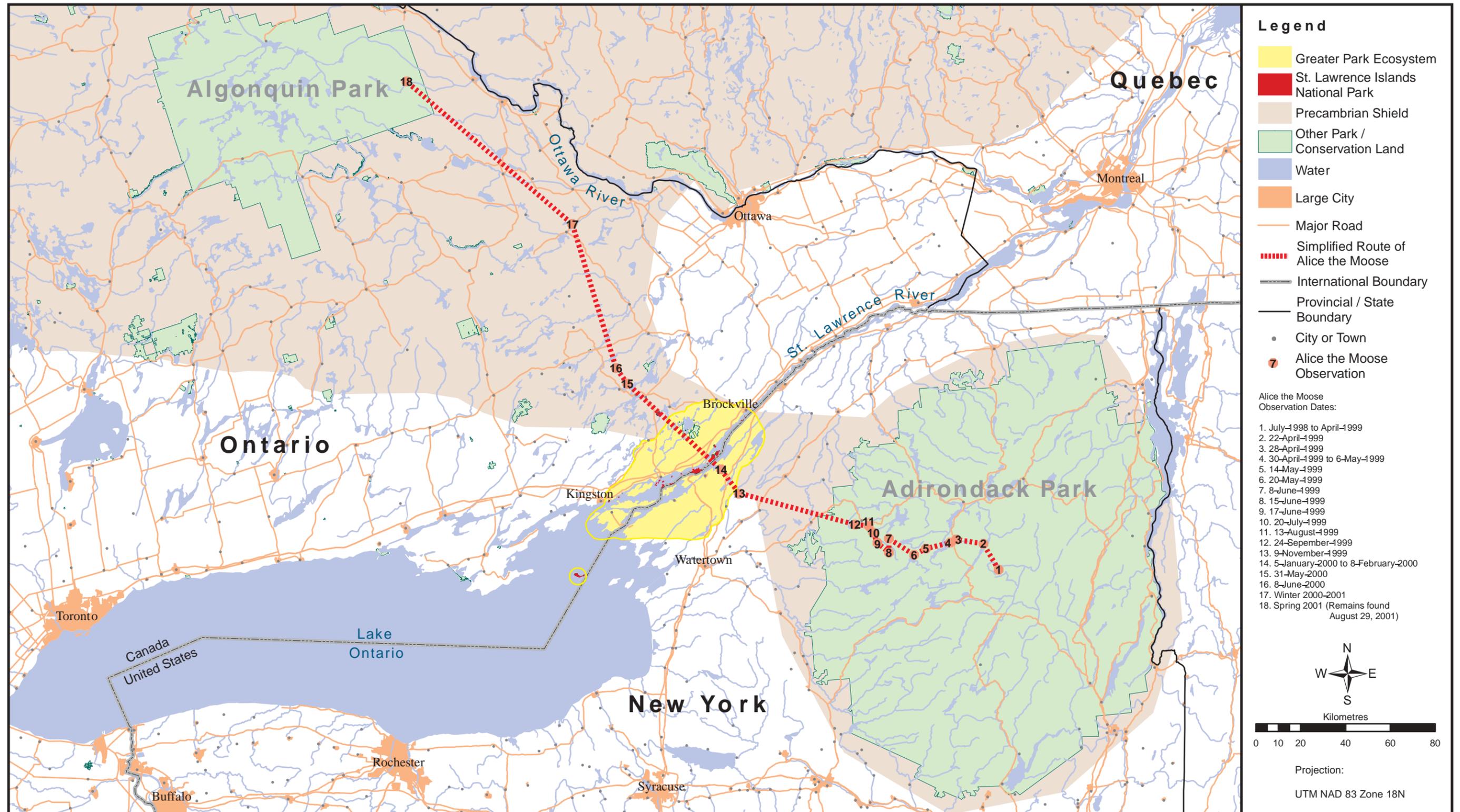


Moose (above), lynx, and fisher are all known to travel through the Thousand Island Ecosystem.

Parks Canada

Map 6.1

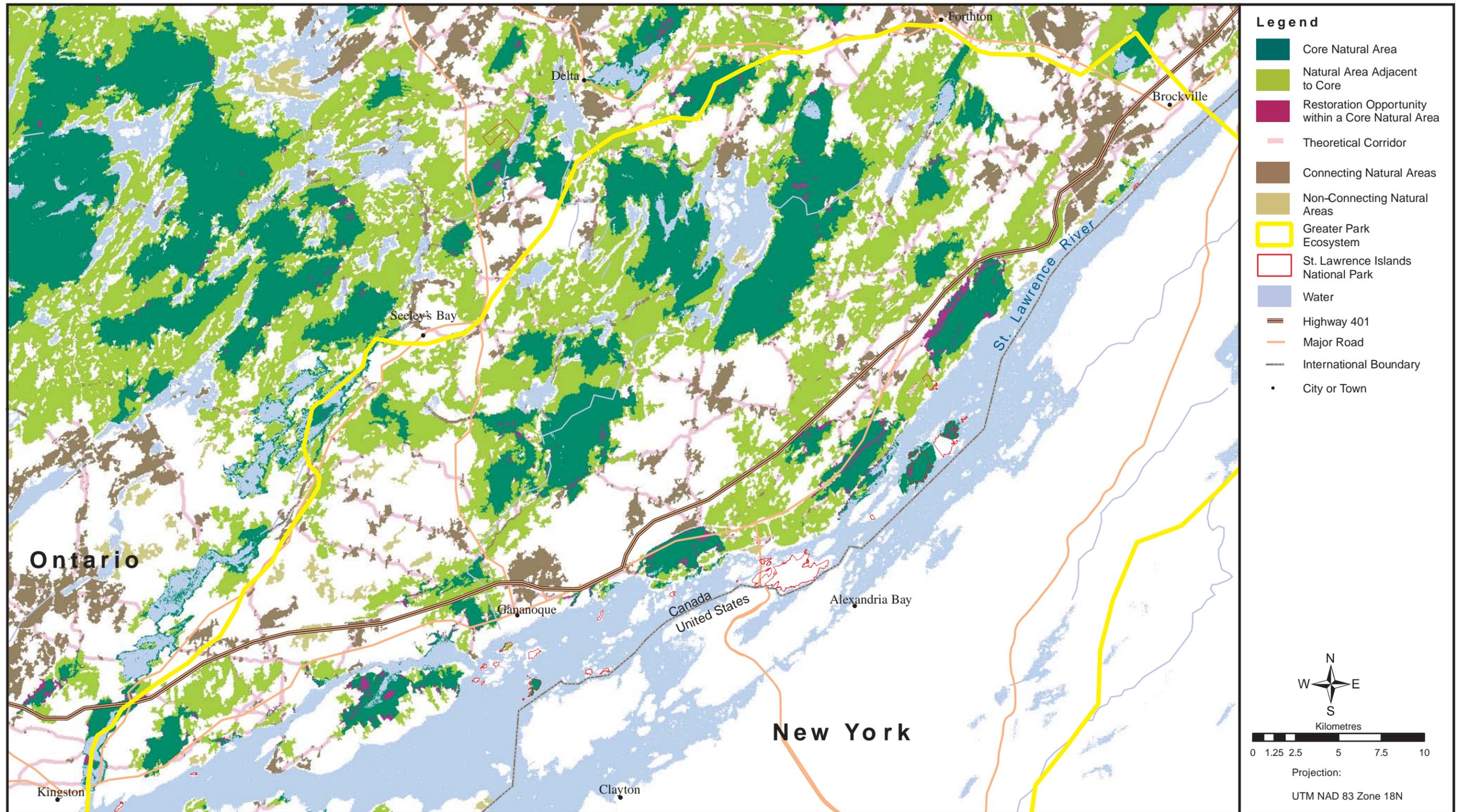
# Alice the Moose: The A2A Link



Map produced by the Canadian Parks and Wilderness Society – Ottawa Valley Chapter

Data Sources: St. Lawrence Islands National Park, GeoGratis, Ontario Ministry of Natural Resources, National Atlas of the United States of America, New York State Parks, Alice the Moose locations compiled by CPAWS from various sources including Adirondack Ecological Center and Algonquin Ecowatch

# Natural Connections: Cores and Corridors

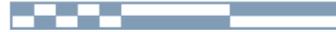


Map produced by the Canadian Parks and Wilderness Society – Ottawa Valley Chapter

Data Sources: St. Lawrence Islands National Park, Big Picture, 2002 Project (Natural Heritage Information Centre – Ontario Ministry of Natural Resources, Nature Conservancy Canada), GeoGratis



## CHAPTER 7. WHAT DOES THE FUTURE HOLD?



The Thousand Islands Ecosystem is still blessed with a large proportion of natural areas. Map 7.1 shows all the identified natural heritage features in the Canadian portion of the Thousand Islands Ecosystem. But what will the region look like in 50 years? How about 100 years? How about in seven generations?

Municipal planning will play a major role, but it is only part of the answer. Map 7.2 shows the Natural Heritage Features that are addressed by meeting only the minimum provincial policies on municipal planning. Of the 9,400 hectares of wetlands in the portion of the Thousand Islands Ecosystem considered in Chapter 5, only 4,500 hectares (48%) are designated as provincially significant and therefore addressed in municipal planning. Of the total 60,400 hectares of natural areas in the same region only 8,800 hectares (15%) are designated as Significant Natural Heritage Features and therefore addressed in municipal planning. Of course municipalities have the option of exceeding these minimum criteria if the community wishes. Because there is currently no provincial guideline for significance of woodlands, the only woodlands that are typically addressed by municipal planning are those that happen to be within a Provincially Significant Wetland or a Provincially Significant ANSI, as illustrated in Map 7.2.

Once municipal Official Plans address significant woodlands, the extent of protected woodlands will depend on the guidelines used. Map 7.3 shows the results using the potential significant woodlands identified by the Eastern Ontario Natural Heritage Working Group. Using these guidelines, 73% (39,900 hectares) of the ecosystem's woodlands would be addressed by municipal planning.

Under the scenario described by Map 7.3, approximately 74% (by area) of the natural areas in the Thousand Islands Ecosystem would be addressed as Significant Natural Heritage Features in municipal Official Plans. The remaining Natural Heritage Features, as well as other natural areas, must be address by means other

than municipal planning. These means include voluntary private land stewardship, conservation easements or ownership by land trusts, and conservation management of public lands.

The future of the Thousand Islands Ecosystem will be shaped by the decisions of many people. The future state of the islands and their critical shoreline habitat will be shaped by the management decisions of their owners, including both

private landowners and St. Lawrence Islands National Park. The same is true on the mainland, where provincial and state authorities also play an important role. Decisions made by land owners, land trusts, stewardship councils, conservation authorities, conservation groups, and others will have impacts throughout the region. Water quality in this part of the St. Lawrence River will be influenced not only by decisions in northern New York state and eastern Ontario, but everywhere upstream: the entire Great Lakes Basin.

One important challenge will be to make sure that these various efforts are synergistic, adding value to each other in a coordinated way so that the conservation whole is greater than the sum of the parts. The

Thousand Islands-Frontenac Arch Biosphere Reserve is an important meeting place to achieve this goal.

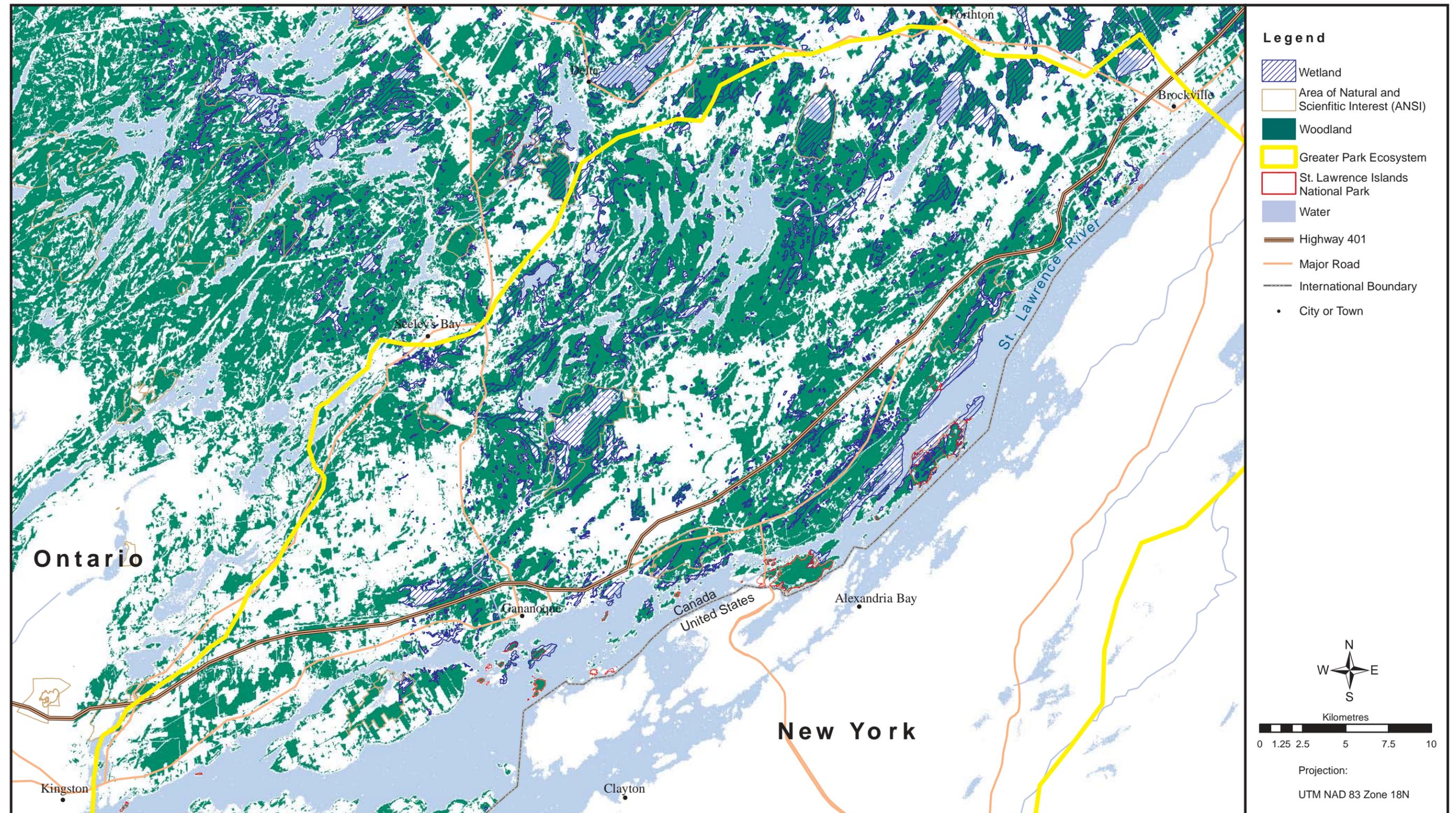
Another important challenge will be to get the boundaries right. The boundaries of the Greater Park Ecosystem of St. Lawrence Islands National Park (the Thousand Islands Ecosystem), and those of the Thousand Islands-Frontenac Arch Biosphere Reserve have both been identified as needing refinement. The same general area has also been identified as the "bottleneck" in the Algonquin to Adirondacks connection, but specific boundaries have not been defined. It should not be surprising that these three areas are geographically similar, because they are closely related in their theoretical and practical basis. In planning for the future, it will be important for these three entities to collaborate closely on refining their respective boundaries and integrating their planning.



Parks Canada

St. Lawrence River

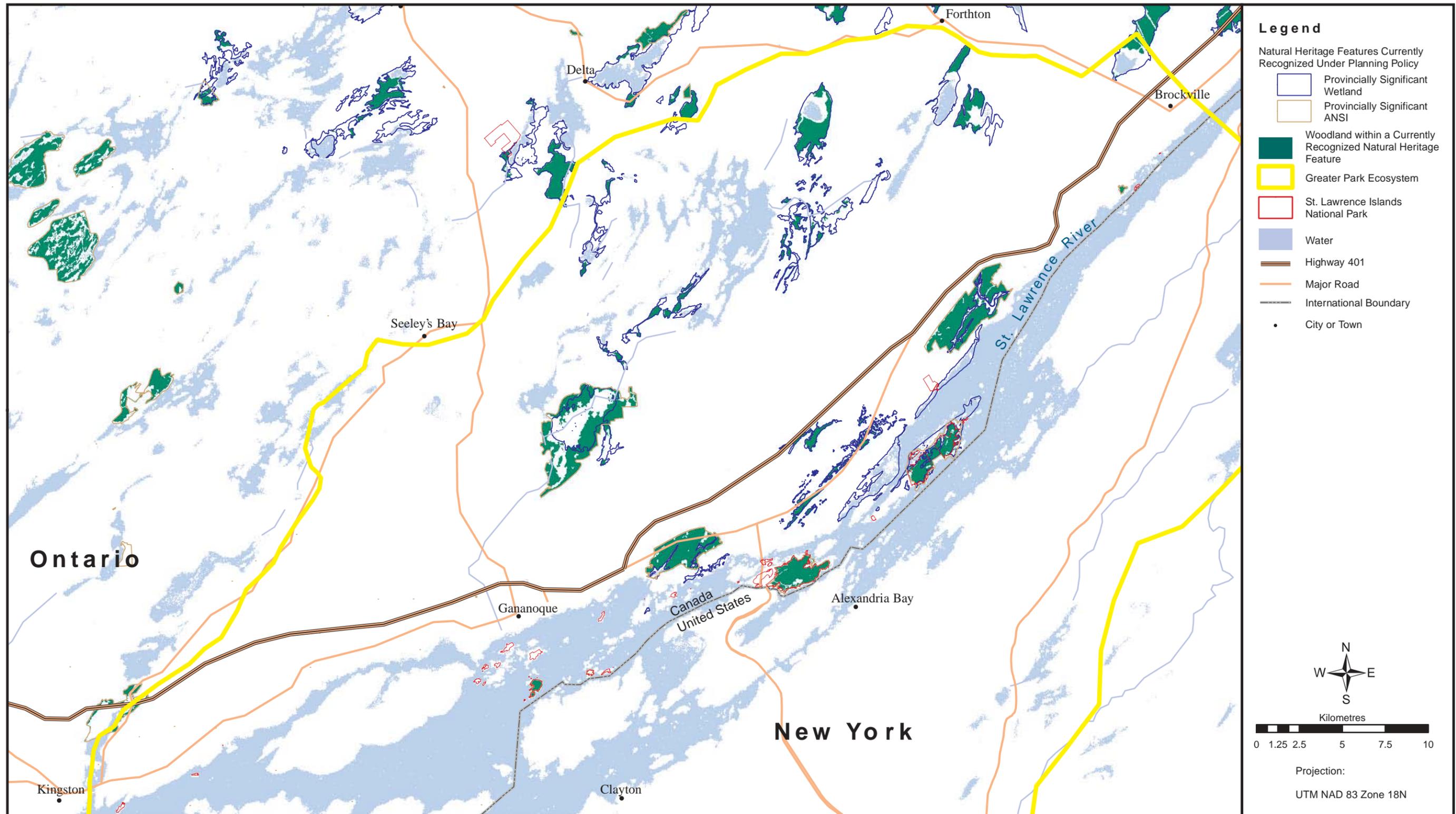
# Wetlands, Woodlands and Areas of Natural and Scientific Interest



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# Natural Areas Currently Recognized Under Planning Policy

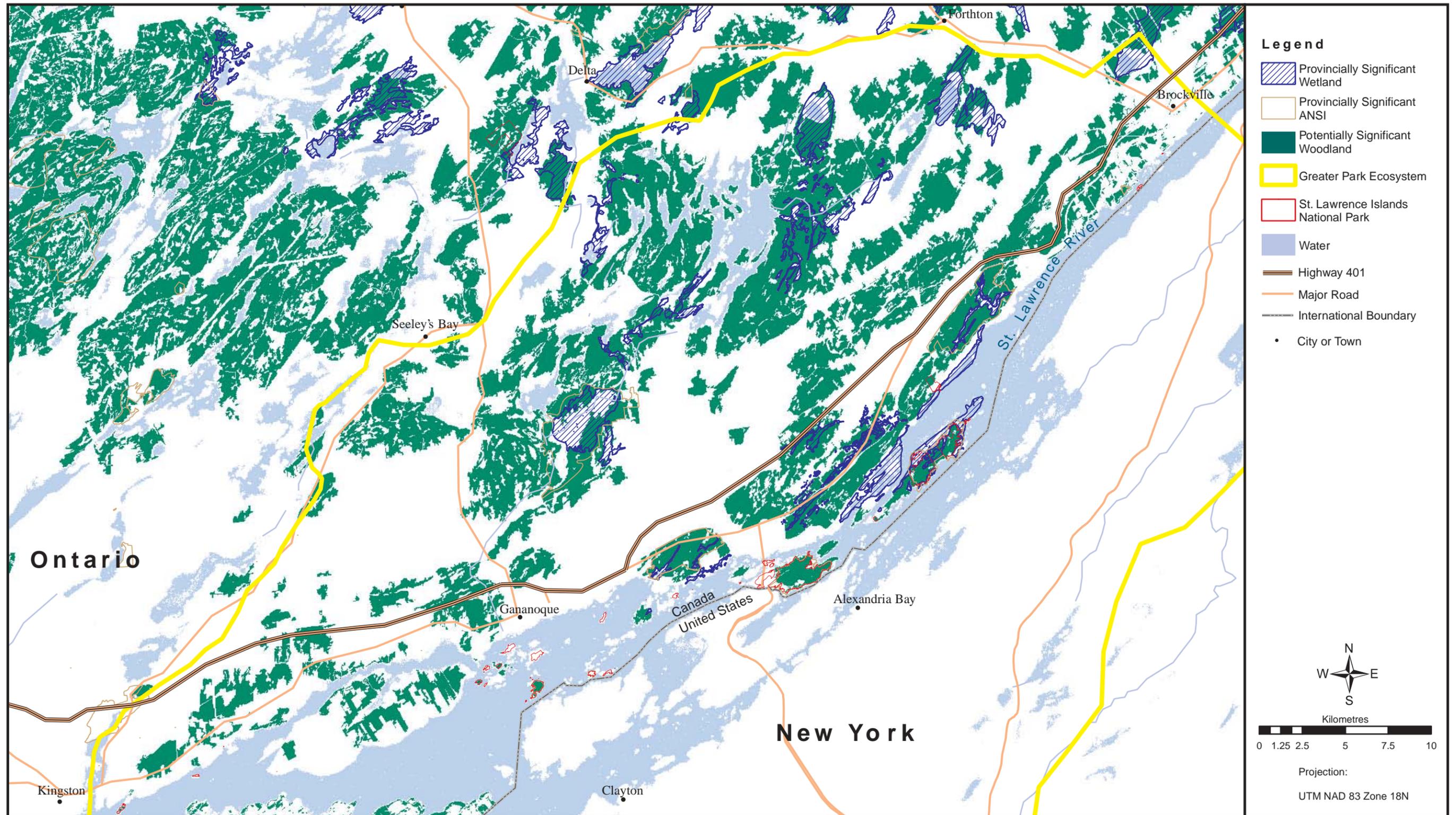


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Map 7.3

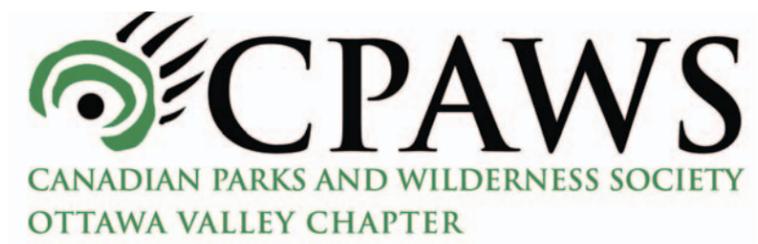
# Actual and Potential Significant Natural Heritage Features



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