United Counties of Leeds and Grenville

LIMERICK FOREST
Long Range Management Plan




September 2003

United Counties of Leeds and Grenville

LIMERICK FOREST

LIMERICK FOREST
LONG RANGE MANAGEMENT PLAN

I recommend that this plan be approved for implementation:

For the Limerick Forest Advisory Committee:

LFAC Chairperson — Date: Sept 9/03

For the United Counties of Leeds and Grenville:

Forest Manager — Date: Sept 09/03

Chief Administrative Officer — Date: Sept 25/03

Warden — Date: Sept 25/03

Vision Statement

"***A century from now Limerick Forest will be an outstanding example of community cooperation in the sustainable management of its natural resources.***

Limerick Forest will be providing a wide variety of community goods and services including jobs and revenue, varied recreational opportunities, the protection of areas of significant biodiversity, the protection of soil and water resources, and the provision of structured educational opportunities."

(Limerick Forest Advisory Committee – April 2003)

Contents

	Page
1. INTRODUCTION AND BACKGROUND	1
1.1 Introduction	1
1.2 Recent History	1
1.3 Need for Planning	1
1.3.1 General	1
1.3.2 Limerick Forest Values	2
1.3.3 Considerations and Constraints	2
2. ADMINISTRATION AND LEGAL FRAMEWORK	3
2.1 MNR and the United Counties of Leeds and Grenville	3
2.2 Official Plans	4
2.3 Legal Status for Limerick Forest Resource Management Plan	4
2.4 County Policy	5
3. PLANNING APPROACH	5
3.1 A Living Document	5
3.2 Planning Process	5
3.3 Community Based Planning	6
4. HISTORY OF LIMERICK FOREST	7
5. THE ENVIRONMENT	9
5.1 Location and Area	9
5.2 Population	11
5.3 Climate	12
5.4 Physiology and Soils	12
5.5 Water Resources	13
5.5.1 Surface Water	13
5.5.2 Groundwater	15
5.6 Vegetation	16
5.6.1 Plantations	16
5.6.2 Natural Forests	16
5.6.3 Wetlands	17
5.7 Wildlife	17
5.7.1 Mammals	18
5.7.2 Reptiles and Amphibians	18
5.7.3 Birds	18
5.8 Environmental Impact	19

Page

6. RESOURCE USE and VALUES 19

6.1 Timber Resources 19
6.1.1 Investment 19
6.1.2 Current Resource 20
6.1.3 Revenues 21
6.1.4 Markets 22
6.1.5 Trees – Other Values 23
6.2 Aggregates 24
6.3 Fur Harvesting 25
6.4 Water Resources 25
6.4.1 Wetlands 25
6.4.2 Groundwater 25
6.5 Recreation 27
6.5.1 Snowmobiling 28
6.5.2 Trail Riding 29
6.5.3 Hunting 30
6.6 Education 31
6.7 Natural Heritage Protection 32
6.7.1 Significant Woodlands 33

7. PLAN GOAL, OBJECTIVES AND STRATEGIES 34

8. PUBLIC INPUT 36

9. DESIGNATED USE AREAS (DUAs) 37

10. IMPLEMENTATION 38
10.1 Administration 38
10.2 Next Steps 39

11. ENVIRONMENTAL GUIDELINES 39

12. SCHEDULING 39

13. BUDGETING 39

14. MONITORING, REVIEW AND REVISIONS 42

15. REFERENCES 44

ANNEXES

Page

A – Limerick Forest Advisory Committee
- Limerick Forest Advisory Committee Organizational Chart 47
- Limerick Forest Advisory Committee 2003 Members 48

B - Record of Public Input to the Planning Process
- Limerick Forest Planning Chronology 50
- Summary of LFAC Facilitated Plan Alternatives Session April 12, 2003 51
- Summary of Public Input: From Limerick Forest Planning Open Houses 2003 54

C - Limerick Forest Compartment Location Description and Area
- Limerick Forest Compartment Location Description and Area 59

D - Population Projections for UCLG and Area
- Population Projections for UCLG and Area 64

E - Wetland / ANSI Summaries
- Limerick Wetland 66
- Wolford Bog Part 1- Wetland 67
- Wolford Bog Part 3- Wetland 68
- Wolford Bog Part 4- Wetland 69
- Wolford Bog Part 5- Wetland 70
- Indian Creek Wetland 71
- Charleville Creek Wetland Complex 72
- Cooligan Marshes Wetland Complex 73
- Hutton Creek Wetland 74
- Kemptville Creek Part 1&2 Complex 75
- Groveton Bog ANSI 76
- Merrickville Bog ANSI 77
- Cranberry Lake Swamp ANSI 78

F – Limerick Forest Tree Species Characteristics
- Jack Pine 80
- Red Pine 80
- White Pine 81
- White Spruce 81

G – Wildlife Lists
- Mammals that Possibly or Periodically Inhabit Limerick Forest 83
- Amphibians and Reptiles Which Possibly Inhabit Limerick Forest 85
- Breeding Birds of the Limerick Forest Area 86
- Species at Risk which may occur in Limerick Forest 90

H - Limerick Forest Education
- Limerick Forest Education: Local School List 92

List of Tables

		Page
Table 3.1	Steps in the Planning Process	6
Table 5.1	Area of Limerick Forest by Municipality	9
Table 5.2	Limerick Forest Area Summary	10
Table 5.3	Climatic Data Summary for Limerick Forest	12
Table 5.4	Soil Series Estimates for Limerick Forest	13
Table 5.5	Significant Wetlands of Limerick Forest	14
Table 5.6	Plantations by Species and Condition	16
Table 6.1	Tree Planting Records	20
Table 6.2	MNR Incurred Expenditures and Revenues	20
Table 6.3	Summary of Forest Type by Area	21
Table 6.4	Recreational Activities and Estimated Use in Limerick Forest South Tract	28
Table 6.5	Identified Snowmobile Trails Through Limerick Forest	29
Table 7.1	Potential Strategies for Achieving Plan Objectives	35
Table 9.1	Limerick Forest DUAs, Description and Restrictions	37
Table 10.1	Sample Schedule of Plan Implementation	40
Table 14.1	Monitoring Program Composition	43

List of Figures

Figure 1.1: Map 1 Location of Limerick Forest Properties
Figure 1.2: Map 2 Limerick Forest within a Regional Context
Figure 5.1: Map 3 Limerick Forest South Tract
Figure 5.2: Map 4 Limerick Forest North Tract
Figure 5.3: Map 5 Limerick Forest Cranberry Lake Area
Figure 5.4: Map 6 Limerick Forest North Augusta Area
Figure 5.5: Map 7 Limerick Forest Leeds County Unconsolidated Compartments
Figure 5.6: Map 8 Limerick Forest Grenville County Unconsolidated Compartments
Figure 5.7: Map 9 Limerick Forest and Watershed Boundaries
Figure 5.8: Map 10 Significant Wetlands of Limerick Forest
Figure 5.9: Map 11 Limerick Forest Areas of Natural and Scientific Interest
Figure 5.10 Map 12 Potential Groundwater Infiltration of the Limerick Forest Area
Figure 5.11 Map 13 Potential Aquifer Recharge Areas of the Limerick Forest Area
Figure 6.1: Map 14 Aggregate Resources of Limerick Forest
Figure 6.2: Map 15 Recreational Trails of Limerick Forest South Tract
Figure 6.3: Map 16 Significant Woodlands of Limerick Forest and UCLG
Figure 10.1 Map 17 Provisional Designated Use Areas for Limerick South Tract
Figure 10.2 Map 18 Provisional Designated Use Areas for Limerick North Tract
Figure 10.3 Map 19 Provisional Designated Use Area for Limerick Cranberry Lake Area
Figure 10.4 Map 20 Provisional Designated Use Areas for Limerick North Augusta Area
Figure 10.5 Map 21 Provisional Designated Use Areas for Limerick Forest Leeds County Unconsolidated Compartments
Figure 10.6 Map 22 Provisional Designated Use Areas for Limerick Forest Grenville County Unconsolidated Compartments

1. INTRODUCTION AND BACKGROUND

1.1 Introduction

The Limerick Forest Long Range Management Plan establishes the vision, goal, objectives, strategies and activity parameters for Limerick Forest. It also provides area use designations as well as policy statements for the general management of these areas and is the basis for detailed five year operating plans and annual working plans.

Within this plan are detailed section on the various features of Limerick Forest's environment as well as its resources uses and values. There is also administrative background, history and planning process sections. The annexes of the plan contain information and data pertinent to Limerick Forest.

Limerick Forest itself is an area of public land, totalling 5,788 ha in size and owned and managed by the United Counties of Leeds and Grenville (UCLG). It is comprised of 175 separate compartments of land with the two main tracts (1,471 ha and 1,122 ha) situated, respectively, in the municipalities of Augusta and Merrickville-Wolford. Thirty percent of Limerick Forest has a cover of mostly of red pine and jack pine plantations as a result of past efforts to fight serious soil erosion that resulted from early natural stand removal and subsequent cultivation. The remainder of Limerick Forest is comprised of second growth upland hardwood forest and wetlands. Figure 1.1 (Map1) indicates the individual property holdings of Limerick Forest in UCLG. Figure 1.2 (Map 2) shows Limerick Forest within a regional context, and of particular interest is its proximity to major urban populations and its relationship with other open space lands, both private and public.

1.2 Recent History

The Ontario Ministry of Natural Resources (MNR) was responsible for the planning and management of Limerick Forest, on behalf of the UCLG from 1940 when the first red pine plantations were established, until 2001 when MNR officially divested all management and administrative responsibilities for Limerick Forest. The responsibility for management and administration currently rests with UCLG.

1.3 Need for Planning

1.3.1 General

A large and diversified resource such as Limerick Forest cannot be effectively managed, either now or in the future, in the absence of a long range vision and plan. To date, with the exception of timber management, the other natural values and resource uses of Limerick Forest have been managed on an ad hoc basis. Until recently, Limerick Forest

resource management decisions have been dominated by the timber sector. This domination was not without purpose since a significant amount of public funds have been invested over the years in the establishment of red pine plantations. It had been MNR's responsibility to recover some of that investment through timber harvesting operations.

Public interest has indicated that Limerick Forest has an important environmental, economic, recreational and educational role to play in the community. With many competing interests, managing Limerick Forest in a way that will meet the needs of the present and future populations without compromising the natural values of Limerick Forest presents a challenge for the Counties. This challenge is in part to be met by the development and implementation of a long range plan which sets out the goals, objectives and strategies to be employed in realizing the vision for Limerick Forest.

1.3.2 Limerick Forest Values

Limerick Forest includes areas noted for their biodiversity, primarily in its myriad of wetland areas and surrounding indigenous upland forests. This biodiversity in its own right is worthy of protection, particularly given the few natural areas under public jurisdiction remaining in south-eastern Ontario. Limerick Forest provides a reservoir of biodiversity for the surrounding areas and a foundation for education programs. Limerick Forest also provides the framework for high quality recreational opportunities and along with the pine plantations, an economic base that provides jobs for local residents and revenue for UCLG that can be used to offset Limerick Forest management costs.

It is believed that certain compartments of Limerick Forest are important aquifer recharge areas. Both its natural and introduced vegetation communities and system of wetlands provide an important function in controlling surface runoff and protecting surface water quality.

1.3.3 Considerations and Constraints

As stated previously, the information base for Limerick Forest is primarily based on the forest values. Information on the other values is limited to certain attributes or selected compartments. The long range plan is therefore based on what is considered a minimum of data. As new data and information becomes available it will be used to improve the plan.

2. ADMINISTRATION AND LEGAL FRAMEWORK

2.1 MNR and the United Counties of Leeds and Grenville

Limerick Forest came under the Provincial Agreement Forests Program on April 24, 1940, creating a partnership between the landowner, in this instance UCLG and the forest land manager, the Department of Lands and Forests, and more recently, the Ministry of Natural Resources (MNR). By the provisions of the agreements under the program the lands were leased to MNR and, in exchange, the latter managed the land for forestry purposes. This included the production of wood and wood products, provision of proper environmental conditions for wildlife, protection against floods and erosion, the provision of recreational opportunities, and the protection and production of water supplies.

Subsequent to the original twenty year agreement, agreement extensions were provided and a final 20 year forest management plan for the period beginning April 1, 1992 was signed on March 22, 1993. A 5-year Forest Operating Plan, developed within the framework of the management plan, also took effect on April 1, 1992.

In 1995 the MNR essentially ceased operational management of Limerick Forest and initiated the process to terminate the Agreement Forest Program. Final termination of Limerick Forest's agreement did not occur until 2001.

A major issue in the transfer of management back to the UCLG was debit against Limerick Forest owed to the province. For each of the management years MNR presented an accounting of the revenues received from the sale of various resources together with the expenses incurred in the management of the forest. Negotiations for the payment of the owed amounts concluded with MNR forgiving any amounts owing for the management the Agreement Forests. In the case of Limerick Forest the amount forgiven was approximately $ 1,680,000.

In November 2001 UCLG rescinded the original by-law which created Limerick Forest and thereby assumed their present position as the owner and manager of Limerick Forest. Current management is effectively accomplished by the Limerick Forest Advisory Committee (LFAC) which was established by bringing together interested members of the community to advise County Council regarding the continued management of Limerick Forest (Annex A provides an organizational chart of LFAC). LFAC reports to the UCLG through its Public Works Committee. LFAC oversees the management operation and presents annual budgetary requests to the UCLG through the Public Works Committee.

To ensure the effective management of Limerick Forest, UCLG hired a Forest Manager and forest technician in August 2002. Their duties include working with the Counties, LFAC, governmental agencies, and other stakeholders to ensure that the goals and objectives of UCLG Council are accomplished. Field work includes managing work crews, contract administration, managing recreational use, monitoring, and inspections.

2.2 Official Plans

Under the provisions of the Planning Act each municipality is mandated to develop an Official Plan which guides the community's physical development with regard to long term economic prosperity, environmental health and social well-being. All municipal Official Plans must have regard for the Provincial Policy Statement which, among other matters, mandates the protection of significant wetlands and areas of natural and scientific interest (ANSI).

There are currently 14 Official Plans within UCLG and this will be reduced to ten within the next few years. There is no overall Official Plan for UCLG, but rather a wide diversity of Official Plans and zoning by-laws reflecting the community autonomy and long term development aspirations of each municipality. Implementation of Official Plan policies is directed by the zoning by-law of each municipality. Zoning considerations throughout Limerick Forest are complicated by the fact that the various Official Plans are not uniform in their approach to zoning designations and definitions.

Most of the Official Plans covering parts of Limerick Forest apply an open space designation to lands within Limerick Forest. Some areas within Limerick Forest are designated as rural. Open space definitions within the individual official plans do not always include forestry as a permitted use. In some plans, which allow forestry practices, a definition of forestry is not provided in the definitions section.

It is important that the uses to which various areas of Limerick Forest are put, comply with the particular planning and zoning of each municipality within which the area is situated. Therefore, for each compartment of Limerick Forest, permitted usage should be determined by consulting with the appropriate municipal authority and researching the applicable Official Plan and zoning by-law.

Since many of the current municipalities within UCLG are developing new Official Plans it is important that the LFAC closely communicate with the municipalities re: planning strategies and resource designations for Limerick Forest to ensure that these will be commensurate with zoning designations prepared by the municipalities.

2.3 Legal Status of the Limerick Forest Long Range Management Plan

The Limerick Forest Long Range Management Plan is given force through a by-law adopted by the Counties Council. Any changes to the plan must be approved by the Counties Council in consultation with LFAC.

2.4 County Policy

It is county policy that private signs or structures are not permitted on county property. For Limerick Forest no private signs or structures are permitted unless otherwise approved by the Forest Manager. Additional policy statements may be adopted by Counties Council as required to assist in the administration or management of Limerick Forest.

3. PLANNING APPROACH

3.1 A Living Document

The Limerick Forest Long Range Plan is a living document and is expected to be modified, perhaps even significantly, over the next several years. This approach has been taken as a result of the realization that there is a paucity of data available upon which to prepare concrete plan recommendations. Apart from forest resource information as this relates to the commercial aspect of forest management, there is little data available on the basic resources of Limerick Forest. It will be important that the LFAC pursue the collection and analysis of relevant resource data that will provide the basis for making sound recommendations towards the use of Limerick Forest's resources. The availability of additional data and information in the future will allow additional detailed recommendations and as well, may lead to significant modifications to the plan. As a result of this lack of important data, and the ever changing nature of Limerick Forest, the plan will remain a living document.

3.2 Planning Process

The basis of the planning exercise was the involvement and participation of the various users of Limerick Forest. First and foremost in the planning process was the assurance that the process was one of openness with complete public disclosure at all steps of the process. The LFAC, overseer of the plan preparation, represents the major user and interest groups of Limerick Forest (Annex A provides a list of LFAC members and their affiliations).

A sequential planning process has been used and Table 3.1 outlines the steps that were followed.

Table 3.1: Steps in the Planning Process

	Description
Initial public meeting	Public meeting in Roebuck to discuss need for a plan and to hear from general public and interest groups various concerns re: current and future use of Limerick Forest
Preparation of plan goal statement and set of objectives	Foundation for the plan will be a set of development and management objectives within an overall goal to be achieved.
Discussion and debate re: goal and objectives statements	LFAC studied statements and debated same. Final agreement on statements was made.
Preparation of development strategies	Strategies are the approaches that will be used for achieving plan objectives – these were developed and agreed upon by LFAC.
Data collection	Based on stated plan objectives and strategies. Much data is not available and will be collected as time and resources permit.
Preparation of list of preferred development activities	An interactive workshop held to solicit most preferred development activities and approaches to be used. Attended by LFAC members and members of the general public.
Public workshops	Two public workshops held in Merrickville and Roebuck to present initial plan recommendations to the general public and receive feedback.
Presentation to participating municipal councils	Plan framework and development strategies presented to participating municipal councils for information and comment.
First draft plan preparation	Based on objective data, public and municipal council input, a draft plan is prepared and presented to UCLG Public Works Committee for approval.
Second draft plan preparation	Feedback from UCLG leads to second draft plan preparation and this is returned to UCLG Public Works Committee.
Draft Final plan preparation	Presented to UCLG Council for approval. Available for comment by the general public.
Final plan preparation	Final plan submitted to UCLG for approval.

3.3 Community Based Planning

The plan and its contents are community based. The LFAC is comprised of individuals within the Limerick Forest area who represent the various interest groups having a stake in the future of Limerick Forest. In addition to the LFAC providing basic input to the planning process, LFAC has worked to ensure that there is agreement with plan statements emanating from each step of the process. In addition, the community-at-large has had several opportunities to raise concerns and issues, and to constructively contribute to the preparation of the plan. This has been possible through several public forums as well as by word of mouth through the members of the LFAC who ensure that their respective constituents are continually informed and have the opportunity for input to the planning process. Annex B provides an account of the public input opportunities that have been available during the planning process.

4. LIMERICK FOREST HISTORY

Most of Limerick Forest is situated on the Smiths Falls limestone plain, a thick sheet of Ordovician limestone sweeping south to the St. Lawrence River. This ancient rock is covered by a thin layer of glacial till, consisting of sand and boulders left by the last ice age glacier 12,000 years ago. At that time, Paleo-Indians hunted mastodons, Irish elk and grizzly bears and after the big game had run out, practiced slash and burn agriculture. Later, but before European settlement, the countryside had such extensive forests that the early timber barons thought they were inexhaustible. These "inexhaustible" forests were of the Great Lakes Association group and included hard and soft maple, beech, hemlock, red oak, black cherry, yellow birch, white pine and white cedar. The flat topography and shallow depth to bedrock impeded drainage resulting in a landscape that included many types of wetlands.

The Limerick Forest area was settled in the late 1840s, mostly by Irish potato famine survivors coming up the Rideau River. One of them, Andrew Forsythe, settled on a 200 acre tract of land on the northern edge of a forest just south of Bishop Mills. This he named Limerick, after his old home in Ireland. The farming community was warned not to wage a war of extermination against the trees of the woods. For example, in the first issue of *The Canada Farmer*, Toronto, Upper Canada, January 15, 1864 it warns that "Full of utilitarian ideas, bent on speculation the founders of a new town or village allow, unchecked, raw immigrants and day labourers to begin and carry on the work of spoliation and disfigurement. Grand old oaks, graceful elms, beautiful pines, hemlocks and balsams which furnish ornament and shade, are mercilessly felled. The consequence is that many stretches of country have come to be nearly, if not quite as bare as a Western prairie".

These warnings were unheeded, families were large, the farming communities had a fast rate of growth, clearing of the land proceeded apace and by the late 1800s the forests were gone. After this time, repeated cropping and grazing could not be sustained by increasingly nutrient deficient soils and the land "ran out". Then a true disaster started. The unprotected soil started to blow away, choking dust storms and later even sand storms turned the land into a desert with stony plains and sand dunes. From 1910 till after the Great Depression of the 1930s, whole families abandoned their handiwork and with taxes due, ownership of the land, buildings and all, fell back to the counties. This was the origin of county forests in Ontario including Limerick Forest.

There had been a growing awareness in Southern Ontario that felling of trees causes barren lands and that the trees were irreplaceable. In 1871 Sir John A. MacDonald, wrote "The sight of immense masses of timber passing my window every morning constantly suggests to my mind the absolute necessity there is for looking at the future of this great trade. We are recklessly destroying the timber of Canada and there is scarcely the possibility of replacing it." A number of attempts to address this problem were made as early as 1873 but it was not until 1921, when not one acre of the original forest was left intact in Southern Ontario, that the political will was found to do something about it. A Reforestation Act was passed by the Province by which counties could enter into an agreement under which the Provincial government reforested land. Extensive planting of

protection forests started well within living memory in 1942 and 1950-53. The agreement forest program as described in Section 2.1 above was initiated. The presettlement species of trees, shrubs and forest floor flora and fauna still occur in old woodlots but the abandoned fields grew up in pioneer species of poplar, white birch, cedar, green ash and buckthorn.

December 14, 1939

Agricultural Committee Studies the Map.

Frank Simmons, Forestry Branch, Toronto, (sitting) left' is showing the location of the proposed counties forest in Grenville County. Sitting, also, are Victor Purvis, Chairman of the Committee (centre), and Wm. Jelly, Clerk of Leeds and Grenville. Standing, left to right: J. R. Ostler, Agricultural Representative for Leeds; Gordon Myers, Reeve of North Crosby; Carl Reilly, Deputy Reeve of Edwardsburgh; Wilfred Weir, Reeve of Augusta; Frank Latourell, Reeve of South Gower.

Leeds and Grenville Plan a County Forest.

Waste Land in Three Adjacent Townships Will be Planted—Tax-deliquent Property Will be Put to Good Use—Council Appoints Committee to Secure Options.

Farmers Advocate December 14, 1939.

5. THE ENVIRONMENT

5.1 Location and Area

Limerick Forest consists of 5,788 ha of forest, field and wetland and is located entirely in the UCLG. It is an accumulation of properties, mostly abandoned farms, which were purchased or acquired for forest management under the former Agreement Forest Program with the MNR. The majority of these properties are concentrated in the townships of Augusta and the current municipality of Merrickville-Wolford in the heart of Grenville County. Table 5.1 indicates the areas of Limerick Forest by municipality, Annex C indicates the geographical location and the area in hectares of each of the Limerick Forest land parcels.

Table 5.1: Area of Limerick Forest by Municipality

Municipality	Area (ha)	%
Leeds County		
Township of Athens	191	3
Township of Elizabethtown-Kitley	285	5
Township of Front of Yonge	0	0
Township of Leeds and the Thousand Islands	0	0
Township of Rideau Lakes	283	5
Village of Westport	0	0
Leeds County Total	**759**	**13**
Grenville County		
Township of Augusta	1,578	27
Township of Edwardsburgh and Cardinal	276	5
Village of Merrickville-Wolford	2,244	39
Municipality of North Grenville	931	16
Grenville County Total	**5029**	**87**
UCLG Total	**5,788**	**100**

Source: MNR 1992, Forest Management Plan for Leeds and Grenville Agreement Forest.

From a landscape perspective the one characteristic all these properties share is their low agricultural capability. A third of Limerick Forest is wetland and the remainder is as a result of abandoned farmland. Today most of the old fields are again forested either with planted pines or naturally regenerated cedar. To a lesser degree some natural stands of hardwood forest still exist. Natural hardwood forests are now developing in the understorey of a number of plantations. Percentages of different land classifications represented in Limerick Forest are provided in Table 5.2.

Table 5.2: Limerick Forest Area Summary

Land Classification	Area (ha)	%
Forest – plantation and natural	3 752	65
Open Land –agriculture, field, hydro right of way	84	1
Wetland – open wetland, treed wetland	1 939	33
Water	13	1
Total	**5 788**	**100**

Source: MNR 1992, Forest Management Plan for Leeds and Grenville Agreement Forest

- ***the main tracts***

There are two relatively consolidated tracts of Limerick Forest known as Limerick Forest South and Limerick Forest North. (refer to Figure 1.1 Map 1). The remainder of Limerick Forest exists in parcels ranging from 5 ha to 270 ha in area. Some of these parcels are concentrated in the Cranberry Lake area and the North Augusta area of Grenville County; the rest are isolated and scattered throughout the UCLG.

Limerick Forest South (Figure 5.1 Map 3) is a 1 471 ha tract of forest located north of Roebuck in the area where Augusta, Edwardsburgh and North Grenville townships converge. The deep sands common to the sites in the area support the oldest and most productive pine plantations in Limerick Forest. The former MNR Limerick Forest operations headquarters are located in this tract and a combination of the high profile of the area and good access to this area of Limerick Forest make it the mostly widely used part of Limerick Forest for recreation.

Limerick Forest North (Figure 5.2 Map 4) is a consolidated tract of 1 122 ha located south-east of Merrickville. Much of this tract is composed of wetland but it also contains some productive forest sites. Access is more limited than that for Limerick Forest South resulting in lower recreational pressure.

Limerick Forest Cranberry Lake Area (Figure 5.3 Map 5) consists of 1 262 ha unconsolidated Limerick Forest compartments situated around and to the east of Cranberry Lake.

Limerick Forest North Augusta Area (Figure 5.4 Map 6) consists of 862 ha of Limerick Forest compartments to the east of North Augusta.

The remaining Limerick Forest compartments are depicted at a larger scale Figure 5.5 Map 7 for Leeds County and Figure 5.6 Map 8 for Grenville County.

- ***land administration***

For administrative purposes the forest is divided into compartments and subcompartments. The compartment boundaries generally coincide with the deeded properties but in some cases boundaries have been modified to align with roads or natural features. Subcompartments delineate different forest stands, wetlands or other unique features. Forest management planning and record keeping occurs at the subcompartment level. There are currently 175 compartments, numbered 1 to 175 generally in order of their acquisition. Specific forest stands are identified by Limerick Forest compartment and subcompartment, e.g. Lim 76 d. A complete set of compartment files are kept at the UCLG office and contain all resource management records. Annex C contains Limerick Forest compartment location descriptions and areas.

- ***surrounding lands***

The lands in the immediate vicinity of Limerick Forest properties are similarly composed of forest and wetland. The wetlands are mostly unchanged from the time of the first settlement of the area. The adjacent farmland that was originally cleared is either experiencing natural forest regeneration or has been reforested through provincial reforestation programs. Within UCLG, and outside of the boundaries of Limerick Forest, farming continues on the more productive sites.

5.2 Population

The total populations of UCLG is 96 606[1] of which thirty percent is considered urban residing in the communities of Brockville, Prescott, Kemptville and Merrickville. Sixty-five percent of the population is rural and five percent is rural farm[2]. The majority of the residences of the UCLG are within a 30 minute drive of the larger tracts of forest, Limerick Forest South and Limerick Forest North. The remainder of UCLG residents are within a 30 minute drive of at least one parcel of Limerick Forest. The City of Ottawa is within a one hour drive of the major tracts (Limerick Forest North and Limerick Forest South) and visitors from Ottawa use Limerick Forest on a regular basis. The populations and population projections of the various municipalities within UCLG plus the City of Ottawa have been included in Annex D. Of significance is the relatively rapid growth projections in North Grenville (3.93 % / yr) in which portions of both Limerick Forest South and Limerick Forest North exist.

[1] Statistics Canada: 2001 Census
[2] 1991 Agri Census

5.3 Climate

The climate of UCLG is characterized by cold winters with moderate snowfall and warm summers with adequate rainfall. Extended summer droughts occur in the area on a 3 to 5 year basis.

Climate data for Kemptville has been included as the best representation for the majority of Limerick Forest. Table 5.3 provides a summary of the climatic data as averaged from 1928- 1990 by Environment Canada.

Table 5.3: Climatic Data Summary for Limerick Forest

Limerick Forest Climatic Summary Chart:	
Mean annual temperature	5.8 ^{o}C
Winter mean temperature (Dec-Feb)	- 8.7 ^{o}C
Summer mean temperature (Jun-Aug)	19.0 ^{o}C
Extreme high temperature	38.3 ^{o}C
Extreme low temperature	- 39.4 ^{o}C
Degree-Days Above 5 ^{o}C	2022
Mean annual Rain	728.5 mm
Mean annual Snowfall	186.4 cm
Mean annual Precipitation	914.7 mm
Prevailing wind direction	NW - SW

Source: Environment Canada 2003, Canadian Climate Normals for Kemptville, ON 1928-1990

5.4 Physiology and Soils

Limerick Forest lies mainly in two physiographic regions[3] as identified by Chapman and Putnam (1984), the Smith Falls Limestone Plain and the Edwardsburgh Sand Plain.

The Smith Falls Limestone Plain is the largest region in the UCLG and approximately 75% of Limerick Forest is located on it. The region is characterized by shallow soils (0-45cm) overlying limestone bedrock, though some deeper pockets of soil do exist. The topography is relatively flat and varies from 70 to140 meters above sea level. The poor drainage associated with this level shallow region results in soils that are excessively wet in the spring and drought prone in the summer. This poor drainage is also responsible for the abundance of wetlands in the region.

The Edwardsburgh Sand Plain occurs in 15% of UCLG and approximately 25% of Limerick Forest is located on it. This region is characterized by generally deep sand with the occasional ridge or hummock of till or gravel protruding from below. The topography is relatively flat and varies from 90 to 120 meters above sea level. There are numerous wetlands in the region on account of the flat topography and high water table. In general the sandy soil in this region has a low capacity for agricultural production but is good for timber production.

[3] Chapman and Putnum. 1984.

Estimates of the breakdown of the soils series in Limerick Forest are provided in Table 5.4.

Table 5.4: Soil Series Estimates for Limerick Forest

Soil Series or Type	%
Peat and Muck	30%
Farmington loam	30 %
Granby sand or sandy loam	15%
Rubicon sand	10%
Upland sand	10%
Other	5%

Source: MNR 1992, Forest Management Plan for Leeds and Grenville Agreement Forest

The peat and muck soils are associated with the wetlands in Limerick Forest. The muck soils are well decomposed and somewhat productive for tree species that are tolerant of high watertables. The peat soils are highly acidic and support little in the way of tree growth.

The sandy soils, common to about 25% of Limerick Forest, are differentiated by their drainage. The well drained Upland sand is a fine to medium sand and is excellent for timber production. The imperfectly drained Rubicon sand is close to the water table and is also quite productive. The Granby sands are poorly drained with a very high water table and are of limited productivity.

The Farmington loam is a shallow till over limestone and common to much of the Smith Falls Limestone Plain. The productivity of the soil is severely limited on account of its shallow depth, which makes it excessively wet in the spring and hot and dry in the summer.

5.5 Water Resources

5.5.1 Surface Water

Surface water in and around Limerick Forest is represented almost entirely by wetlands. Land classification area summaries indicate that 33% or 1,938 ha is wetland and 12 ha is open water. Several creeks associated with these wetlands flow through or immediately adjacent to Limerick Forest properties. Though lakes are plentiful in the western portion of UCLG, Cranberry Lake and Lissons Lake are the only lakes within Limerick Forest.

Most of Limerick Forest is located in the headwaters of the watersheds of the South Nation River and Rideau River. A few Limerick Forest properties are located in the Cataraqui Watershed (refer to Fig. 5.7 Map 9).

Significant Wetlands associated with Limerick Forest are listed in Table 5.5, indicated in Figure 5.8 (Map 10) and detailed descriptions of each are provided in Annex E. Of the 10 evaluated wetlands associated with Limerick Forest, seven of these have been designated Provincially Significant. Furthermore, three of these have been designated as Areas of Natural and Scientific Interest (ANSI) (see Figure 5.9 Map 11)

Table 5.5: Significant Wetlands of Limerick Forest

Wetland	Area and Significance
Limerick Forest Wetland	2,575 ha provincially significant wetland, also the Groveton Bog ANSI
Wolford Bog-Pt 1	1,975 ha provincially significant wetland, also the Cranberry Lake Swamp ANSI
Wolford Bog-Pt 3:	1,547 ha provincially significant wetland, also the Merrickville Bog ANSI
Wolford Bog-Pt 4:	413 ha provincially significant wetland
Wolford Bog-Pt 5	242 ha swamp and marsh
Indian Creek Wetland	565 ha evaluated wetland
Charleville Creek Wetland Complex	1,545ha provincially significant wetland
Cooligan Marshes Wetland Complex	852 ha provincially significant wetland
Hutton Creek Wetland	772 ha evaluated wetland
Kemptville Creek Part 2 Complex	328.2 ha provincially significant marsh and swamp

The Limerick Wetland; one of 7 provincially significant wetlands in Limerick Forest.

5.5.2 Groundwater[4]

Limerick Forest and UCLG ground water exists in both bedrock and overburden aquifers. However, 97% of UCLG potable water comes from bedrock aquifers. Three of these bedrock aquifers are in UCLG and they include the Precambrian, the Dolostone and Sandstone. The Precambrian exists only in the western portion of the counties and there are no Limerick Forest properties overtop of it. Throughout the remainder of UCLG and Limerick Forest both the Dolostone aquifer and Sandstone aquifer exist. The Sandstone is overtopped by the Dolostone and the Dolostone is overtopped to varying degrees by overburden aquifers. The only significant overburden aquifer is the surficial sand aquifer that exists in Limerick Forest South, the Township of Edwardsburgh, and the town of Cardinal.

These groundwater aquifers located in and around Limerick Forest have all been identified as highly to extremely vulnerable to contamination. The surficial sand water table throughout the Edwardsburgh Sand Plain is unconfined and susceptible to surface contamination. The bedrock aquifers located in the Smith Falls Limestone Plain are not adequately protected by the shallow overburden that exists over bedrock.

Recharge to these aquifers occurs by infiltration of precipitation. Overburden with high permeability such as sands and gravels have a much greater infiltration rate than clays and bedrock. A potential groundwater infiltration map (refer to Fig. 5.10 Map 12) relating infiltration to surficial geology indicates that much of Limerick Forest South Tract and the Limerick Forest North Augusta Area compartments have significant potential for groundwater infiltration. For the most part these compartments are in the South Nation Watershed in which much of the groundwater recharge occurs directly from precipitation over wide areas.

Local areas under vertical downward hydraulic gradient (downward flowing groundwater) are areas of significant groundwater recharge for regional aquifers. Such potential recharge areas have been mapped (refer to Figure 5.11 Map 13) by contouring static water levels from existing wells and comparing them to an average water table depth. This method found the majority of recharge occurred in areas of watershed divide. This is consistent with the general association of groundwater recharge occurring in watershed headwater regions. It should be noted that areas of groundwater recharge are also potential areas of aquifer contamination, and they should be protected accordingly.

Limerick Forest compartments located in these areas of potential groundwater recharge include Cranberry Lakes (Lim 147, 157, 158 & 131), Leeds County compartments (Lim 88, 89 & 121) and two small areas in Limerick Forest South (Lim 53 & 108).

[4] Dillon Consulting. 2001.

5.6 Vegetation

The broad vegetation types in Limerick Forest are described in three major classes; plantations, natural forests and wetlands. Some of the characteristics of these vegetation communities are described below.

5.6.1 Plantations

Plantation forests characterize Limerick Forest. They account for 48% of the total forested area and the majority of the forest management effort invested into the forest. All the plantations are even aged conifers and predominately of uniform species. A summary of species as a percentage of forest composition, along with condition, is provided in Table 5.6. Characteristics of each of the major species are described in Annex F. Other species such as scots pine, norway spruce, red spruce and larch comprise only a minor component of the planting.

Table 5.6: Plantation by Species and Condition

Species	Condition
Jack pine (*Pinus banksiana* Lamb.)	Occupies 15% of forested area and most are < 40 years of age. Quality is poor and stocking is patchy.
Red pine (*Pinus resinosa* Ait.)	Occupies 14% of forested area and most are > 40 years of age. Stands are managed, are of high quality and have been thinned regularly.
White pine (*Pinus strobus* L.)	Occupies 5% of the forested area and most are of poor quality as a result of weevil and blister rust damage.
White spruce (*Picea glauca* [Moench] Voss)	Occupies 13% of the forested area and have not been managed actively.

5.6.2 Natural Forests

Most of the natural forests in Limerick Forest are either associated with wetlands or in the case of naturally regenerated cedar, associated with shallow soils. The natural upland hardwood stands that do exist are usually remnants of the woodlots associated with the original farmsteads.

Hard maple is the dominant hardwood forest cover, occupying approximately 12% of Limerick Forest's forests. It is commonly associated with ironwood as a result of many years of pasturing livestock on the woodlands.

Soft maple forest cover, including both red and silver maple, constitutes approximately 9% of Limerick Forest. Soft maple is generally found on wetter sites and often associated with ash. Approximately 60% of the soft maple stands are located on wet sites and many of these are of poor quality and stocking.

Cedar is the most common species in Limerick Forest and accounts for 20% of the total forest area. All but 1% of the cedar is naturally regenerated. Eighty-five percent (85%) of the cedar occurs on the Smith Falls Limestone Plain and is often found in nearly pure stands on dry shallow sites. In wet areas cedar is often associated with spruce, fir, birch or poplar.

Poplar (including trembling aspen, large tooth aspen and balsam poplar) stands account for 7% of Limerick Forest's forest. Most of the poplar stands are a result of natural succession of abandoned fields or from the clearcutting of cedar or lowland hardwoods.

5.6.3 Wetlands

Wetlands account for 33% of the area of Limerick Forest and their vegetation community is best described by the type of wetland. There are four types of wetland: marshes, swamps, fens and bogs. Any given wetland in Limerick Forest may contain a combination of all of the above types.

Marshes account for a minor component of Limerick Forest's wetlands and are defined by areas of standing or slowly moving water. The vegetation associated with marshes is predominately non-woody emergent plants such as rushes, reeds, sedges and grasses. Swamps are defined as wooded wetlands and account for a significant proportion of Limerick Forest's wetlands. Limerick Forest has hardwood swamps containing soft maple and black ash; conifer swamps containing cedar and black spruce; and, thicket swamps with alder, willow and dogwood. Fens are peatlands predominately covered with sedges and occasional shrubs. Bogs are acidic peatlands covered predominantly with sphagnum moss and often contain shrubs.

5.7 Wildlife

The diversity of the forest and wetlands provides good wildlife habitat. An intensive wildlife inventory has never been completed for Limerick Forest, however lists of known and presumed species present have been created for each category of wildlife and these are provided in Annex G. There are several species at risk in the UCLG that could be found in Limerick Forest. Annex G also contains details on these species at risk, their habitat and category. More important than the individual species of wildlife and their numbers and distribution, is their habitat and its condition but unfortunately little is known of habitat condition for most species.

5.7.1 Mammals

Limerick Forest provides habitat for a wide variety of mammals. Forty-two (42) of Ontario's 82 mammals[5] have home ranges that overlap Limerick Forest and could potentially be found in the forest. Many of the small mammals such as mice and squirrels live in Limerick Forest year round, while others such as moose may be found occasionally as transients.

5.7.2 Reptiles and Amphibians

Limerick Forest is potentially home to 26 of Ontario's 47 species of reptiles and amphibians[6].
Amphibians, including frogs, toads and salamanders, are dependant on water for part of their life cycle. Of local significance is a population of Blandings Turtles whose status as being rare or vulnerable is presently under consideration. Spotted turtles are a provincially designated vulnerable species that have been found in the nearby Long Swamp Fen and could be present in Limerick Forest wetlands.

5.7.3 Birds

Limerick Forest supports a variety of bird species including permanent, seasonal and transient populations. Currently the Ontario Breeding Bird Atlas is completing a 5 year inventory (2001-2005) of the birds in Ontario on a 10 km grid system but results are not yet available. Of significance in Limerick Forest are nesting red shouldered hawks and possibly, black terns, both provincially designated vulnerable species. Previous Limerick Forest management plans have indicated the presence of marsh wren and pied billed grebe in the wetlands.

Red-shouldered hawk.

[5] Dobbyn J.S., Atlas of the Mammals of Ontario, 1984.
[6] Royal Ontario Museum, Field Guide to Amphibians and Reptiles of Ontario 2002

5.8 Environmental Impact

Much of Limerick Forest has been subject to a wide variety of human activities ever since initial settlement and these have resulted in significant impacts. First and foremost was the early land clearing that resulted in widespread wildlife habitat loss and conditions that led to serious soil erosion. Natural ecosystems were greatly altered as was the hydrological cycle. Following land clearing, cultivation and livestock rearing further exacerbated the problems. Today much of Limerick Forest is in a recovery mode. However, more recent activities, including recreation, wetland drainage within the region and introduction of exotic species (plants, insects and diseases) and other species not endemic to the area can and do result in impacts on Limerick Forest's ecosystems.

Forests that have regenerated on these sites continue to show the impacts of the past. Pasturing cattle compacted soils and favoured the regeneration of species such as ironwood and prickly ash. Invasive species such as buckthorn and new exotic and invasive species including garlic mustard and strangling dogvine have also been able to out-compete native species on these sites and are spreading into the area, threatening at least portions of Limerick Forest's natural communities.

Land clearing is still occurring in areas adjacent to Limerick Forest but most of the clearing is for residential development. Urban sprawl may be a source of future pressure on Limerick Forest. Policies in place to protect wetlands can be superseded for agricultural development and this continues to be a concern in Limerick Forest since drainage activities outside of Limerick Forest can affect wetland ecosystems within Limerick Forest.

6. RESOURCE USE AND VALUES

6.1 Timber Resources

Timber resources have traditionally been the focus in Limerick Forest management. The forest was established originally for soil protection but subsequent for timber management purposes and a significant investment over the years has been made in forest establishment and management. Timber extraction has created revenue for the UCLG and revenue from this source will continue to grow.

6.1.1 Investment

More than 8.8 million trees, mainly red and jack pine, have been planted in Limerick Forest. Eighty-six percent (86%) of all plantings occurred more than 30 years ago. Table 6.1 summarizes annual tree planting records for Limerick Forest.

Table 6.1: Tree Planting Records

Period	Total Trees for Period	Accumulated Total Trees
Up to 1962	3,642,945	3,642,945
1963 to 1972	3,972,550	7,615,495
1973 to 1982	944,470	8,559,965
1983 to 1992	244,097	8,804,062
1993 to 2002	13,600	8,817,662

Source: MNR Annual Reports to UCLG

Under the former Agreement Forest, expenditure incurred by the MNR for forest management was tracked and accumulated as debit against the forest. Revenue from the forest was collected by the MNR and applied to the accumulating debit. Table 6.2 summarizes the annual financial reports. It should be noted that expenditures applied to this report do not include any land acquisition costs (which were shared 50% by UCLG and 50% by provincial grant), the cost of nursery stock or MNR administration costs.

Table 6.2: MNR incurred Expenditures and Revenues (to nearest $)

Period	Expenditures	Revenue	Net	Net Accumulated Expenditure
Up to Mar 31, 1962	$ 162 325	$ 4 680	$ 157 645	$ 157 645
Apr 1, 1962 to Mar 31, 1972	$ 532 151	$ 20 022	$ 512 129	$ 669 774
Apr 1, 1972 to Mar 31, 1982	$ 853 262	$ 50 486	$ 802 776	$ 1 475 550
Apr 1, 1982 to Mar 31, 1992	$ 360 397	$175 444	$ 214 953	$ 1 682 204
Apr 1, 1992 to Dec 31, 2002	$ 0	$ 4 000	$ 4 000	$ 1 678 205
Total	**$ 1 908 134**	**$236 631**		**$ 1 678 205**

Source: MNR Annual Reports to UCLG

Over the years, further investments have also been made by various programs. Trees were planted and tended by local students, Boy Scouts and work crews on subsidised employment programs. More recently the federally funded Ice Storm Assistance Program (ISAP) provided funding for tree planting and the UCLG has recently provided funding for a forestry program.

6.1.2 Current Resource

In the years since the initial investment in reforestation and the subsequent investment in early forest tending, the forest has grown to become commercially viable for wood and wood products. Due to site factors that limits productivity such as shallow soil depth or high water table a proportion of the established forest is not expected to become commercially viable in the foreseeable future and consequently these areas have been classified as protection forest. Table 6.3 indicates the forest types and classification by area.

Table 6.3: Summary of Forest Type by Area

	Production Forest		Protection Forest		Total Area	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
Forest Type						
Jack Pine	22.8	1	547	14	596.8	15
Red Pine	431.7	12	85.4	2	517.1	14
White Pine	132.3	4	57.6	1	189.9	5
White Spruce	302.9	8	167.5	5	470.4	13
Cedar	212.8	5	540.5	15	753.3	20
Other Conifers	34.3	1	13.4	1	47.7	2
Hard Maple	159.9	4	283.1	8	443.0	12
Soft Maple	163.2	4	157.9	4	321.1	8
Poplar	162.4	4	117.7	3	280.1	7
Other Hardwoods	77.1	2	82.6	2	160	4
Totals	**1 699.4**	**45**	**2053.0**	**55**	**3759.8**	**100**

Source: MNR, 1992 Forest Management Plan for Leeds and Grenville Agreement Forest

6.1.3 Revenues

Most of the revenue generated from the forest has been, and continues to be a by-product of good forest management. Plantation thinnings as well as thinnings from improvement cuts in some of the natural forests have produced wood of varying size, quality and marketability. Traditionally the early plantations were thinned to waste. Later thinnings find their way into the sawlog and hydro pole market. The hardwood thinnings produce pulpwood and firewood and in the future such thinnings will produce sawlogs. Revenue from these harvests is indicated in Table 6.2. In 2002 further revenue of $73,000 from the sale of thinned red pine was gained.

Forwarder loading red pine logs during 2003 thinning operation in Limerick Forest.

The potential for future revenue grows exponentially. Many of the red pine plantations are growing into diameters classes that produce sawlogs and much more valuable hydro poles. As hardwood stands grow and develop they will continue to produce a higher component of quality sawlogs and even more valuable veneer logs. Pulpwood and fuelwood will continue to be available but will account for a smaller proportion of future revenues. With all previous debt against the forest forgiven by the MNR as a condition of the 2001 Termination Agreement of the Agreement Forest Program, the UCLG can anticipate substantial financial rewards as a result of past investments.

6.1.4 Markets

There is currently a great deal of interest in Limerick Forest wood products. There are a number of small local sawmills in the area and a few larger mills located within operating distance of Limerick Forest. There are also a number of logging contractors and truckers that operate in the area and have expressed an interest in operating in Limerick Forest. In September 2002 a notice of upcoming timber sales in Limerick Forest, which was only advertised locally within UCLG, had 17 eligible contractors respond. The markets these contractors had for the disposal of wood, have not been inventoried. The contract for the sale and harvest of the wood from the 2002 tender was awarded to a large mill operating in Renfrew County that specializes in small diameter red pine.

Red pine lumber.

Potential markets for Limerick Forest wood include:

. Pulp-mills: Cornwall, Pembroke and Quebec
. Posts: suspected local markets for cedar fencing posts
. Fuelwood: local firewood processors and individuals interested in cutting for personal use

. Sawlogs: various markets from local bandsaws to large sawmills in the USA
. Veneer Logs: high value allows for trucking long distances within the province or into the USA
. Building Logs: local and regional log home and post and beam builders
. Poles: hydro / utility poles manufactures from Pembroke to New Brunswick have expressed interest

6.1.5 Trees – Other Values

Plantations have created valuable wildlife habitat while restoring forest cover to abandoned lands. Trees in plantations were deliberately planted close together to improve harvest value (fewer branches, taller and straighter stems). Thinning is necessary to reduce the density of these trees, both to allow the continued growth of the remaining plantation trees, and to improve habitat by the regeneration of native trees and understorey plants.

Natural forests in Limerick Forest have continued to provide a multitude of other values (both human and wildlife) as they grew larger and older, and have reclaimed cleared and impoverished soils. The decision whether to manage / harvest these stands must be made based on financial needs, the desire to accelerate the conversion to more natural stands, and the values of leaving forests untouched.

Some of the habitat which is most lacking in Eastern Ontario, is large stands of old growth forest (greater than 120 years old). Old growth contains large trees, fallen logs, standing dead trees, trees with cavities, and abundant mosses, lichens, and fungi. There is no old growth in Limerick Forest, but a number of stands are approaching that age and can be classified as potential old growth. If protected from disturbance, these areas could become highly valuable for wildlife, recreation and scientific purposes.

A second type of valuable wildlife habitat is interior forest. This is the central part of a forest which is located more than 100 meters from any edge. The larger an undisturbed stand, the more interior habitat it will contain. Some species of wildlife, particularly warblers, must have interior forest for nesting to avoid disturbance, predators, and nest parasites prevalent near edges. To provide this type of habitat requires protecting large stands from disturbances such as access roads, wide trails, powerlines and clearcuts. Limerick Forest has the potential to provide large areas of interior forest.

During hot dry spells, the large trees of Limerick Forest have an important role to play in the total hydrologic cycle. Without a forest of large trees that continues to transpire water originating from groundwater resources the local climate of the Limerick Forest area could change to one dominated by hot and dry summer conditions.

6.2 Aggregates

Sand, gravel and bedrock are excavated primarily for road maintenance and general construction. Asphalt, concrete and crushed stone are produced locally by private operators using these aggregates.

The MNR is responsible for regulating aggregate resources and issues licenses and wayside permits for aggregate extraction. Through the official plans municipalities also play an important role in developing and protecting aggregate reserves.

In 2000 there were 113 licensed pits and quarries in the UCLG and numerous abandoned pits and quarries[7]. Statistics indicate relatively stable annual aggregate extraction rates of 2.4 million tonnes per year from 1991 to 2000[8]. An aggregate inventory[9] in UCLG located and assessed all available sand and gravel deposits within the UCLG. The findings indicated sand and gravel were in limited supply in UCLG with only approximately 109.6 million cubic meters available. Specific sand and gravel reserves identified in Limerick Forest are located in Augusta Township Concession VIII, Lots 1 and 2 (Lim 76, 78, 80) and Edwardsburgh Concession VIII and IX Lot 37 (Lim 53 and east end of Lim 50, 51, 52) and these are indicated in Fig. 6.1 (Map 14). Numerous sand dunes and sand plains throughout Limerick Forest South contain "only minor amounts of high quality material....." The 1983 survey did not specifically study the bedrock reserves but noted that further utilization of bedrock resources would be necessary to meet future aggregate demands in UCLG. The bedrock reserves have not been assessed in UCLG, however with limestone bedrock lying within 1.5 m of the surface throughout most of the Smith Falls Limestone Plain, there appears to be no shortage. Crushed limestone bedrock produces a higher grade aggregate and is commonly used instead of gravel. There are currently 13 quarries in UCLG licensed to extract 4.46 million tones annually[10], which far exceeds the average annual extraction of 2.4 million tones of sand, gravel and bedrock combined.

- ***Limerick Forest Pit***

The sand and gravel pit along the main road north of Roebuck in Limerick Forest South (Lim 76, Part Lot 2&3, Con VIII, Augusta Twp) and indicated in Fig. 6.1 (Map 10) is being considered for further utilization. This pit was originally developed and utilized by the MNR through the 1960s and 1970s. In 1989 and 1990 the pit was utilized by the UCLG Roads Department and 143,000 tonnes of material were extracted under a wayside permit for the reconstruction of County Rd 18. UCLG has leased the property to the Township of Augusta for the period July 1, 1997 to July 1, 2007 and the township will pay the UCLG a royalty based on the tonnage of material extracted. The Township of Augusta has applied for a Class A, Category 3 pit license (currently pending approval)

[7] MNR Aggregate Resource License List Sheets, Grenville and Leeds Areas, 2000
[8] Mineral Aggregates in Ontario, Statistical Update 1998, 1999, 2000 as presented in the Ottawa Regional Analysis 2002
[9] 1983 Sand and Gravel Assessment for the United Counties of Leeds and Grenville
[10] MNR Aggregate Resource License List Sheets, Grenville and Leeds Areas, 2000

for the 7.8 ha site, with an expectation of extracting 25,000 tonnes annually. Engineering reports indicate that the site has the capacity to provide 800,000 tonnes.

6.3 Fur Harvest

Trapping is regulated by the MNR under the Fish and Wildlife Conservation Act. To trap furbearing mammals requires a license and a trapline. Quotas are issued based on the trapline location and size. Quotas dictate the species and quantities of each species that can be harvested. There is usually a requirement to harvest a certain portion of the quota. Trapping seasons vary by geographic region and target species, but generally they occur from late fall to early spring. In general, trapping in Southern Ontario is rarely a primary source of income for the trapper but rather supplemental income for seasonal or retired workers, or simply a hobby. Limerick Forest trappers are represented by the Grenville Trappers Council and Leeds Trappers Council.

Trapping has traditionally been encouraged in Limerick Forest and has been an effective mechanism for wildlife managers to manage and monitor fur bearing mammals. Beavers in particular can require management to control populations and remove nuisance beavers. The beaver's urge to build dams in response to running water can lead to property damage from flooding and tree falling. Past management plans have indicated that there have been as many as 17 trappers in Limerick Forest. However, due to falling fur prices trappers find it difficult to cover their costs and trap lines have been abandoned. Today the fur market is slowly rebounding but only one trapper is currently operating in Limerick Forest and his trapline covers all of Limerick Forest South. Two additional trappers have expressed interest in trapping in Limerick Forest in 2003/2004.

6.4 Water Resources

Surface water resources are best described by the wetlands within which they occur. The few small lakes and creeks associated with Limerick Forest are considered wetlands and have been provincially evaluated as the wetland complexes listed in section 5.5. The groundwater resources occur in aquifers which are often linked directly with wetlands as areas of groundwater discharge and sometimes recharge.

6.4.1 Wetlands

Wetlands provide significant ecological, social and economic value. This value is most often derived from a function of the wetland. Most of the values or benefits are realized locally within the area of the wetland or within the watershed within which the wetland is located. Other functions such as for migratory bird breeding or staging provide benefits to a much wider geographical area including all of North America.

The ecological functions of wetlands include[11]:

- controlling and storing of surface water and the recharge and discharge of ground water.
- maintaining and improving water quality, aiding in flood control, and shoreline protection from erosion;
- trapping sediments which would otherwise fill water courses;
- supporting and initiating complex food chains which are ultimately essential to a broad spectrum of living organisms, including humans;
- providing important habitat for a wide variety of plants and animal species for breeding, spawning, migrating, etc.;
- immobilizing some contaminants and nutrients;
- reducing some contaminants to less damaging compounds;
- assisting in maintaining water quality in adjacent lakes and streams that support fish populations;
- providing corridors for wildlife movement.

Wetland benefits include:

- harvest of valuable resource products such as timber, fish, fur, waterfowl and wild rice on a sustainable basis, which contribute substantial economic and social benefits to the Province;
- active and passive recreation;
- aesthetic appreciation;
- protection of cultural values;
- outdoor education;
- water supply.

Of the 10 evaluated wetlands associated with Limerick Forest, seven have been ranked as provincially significant. This implies that a significant amount of the possible functions and benefits of wetlands are occurring in Limerick Forest. Summary descriptions of the wetlands are included in Annex E.

6.4.2 Groundwater

Groundwater resources in Limerick Forest exist in aquifers that extend well beyond Limerick Forest boundaries. Approximately 70,000 people, or 67% of UCLG get their potable water from the groundwater sources. Industry and agriculture use groundwater, and wetlands and ecosystems are dependant on groundwater flow.

Potable water is obtained from the ground through private wells, communal wells and municipal wells. Private wells service 92% of the residences reliant on groundwater, while communal wells serve apartments, schools, restaurants, campgrounds etc. Four communities within UCLG are serviced by communal wells of which Merrickville and Kemptville are in relatively close proximity to large tracts of Limerick Forest. In UCLG

[11] 1992. Ministry of Natural Resources. Implementation Guidelines for the Wetlands Policy Statement (1992).

non-potable water is used for industrial cooling and manufacturing, aggregate washing, livestock watering and to a lesser extent for irrigation and ground source heat pumps.

The only groundwater tapped from Limerick Forest is at the Limerick Forest Headquarters where there are two active drilled wells. Additionally, there are three other inactive drilled wells at former picnic sites in the forest as well as numerous abandoned dug wells located throughout the forest. These abandoned dug wells belonged to the original homesteads located on the property before the establishment of Limerick Forest and are a source of potential groundwater contamination.

Adjacent properties to Limerick Forest have numerous wells for both potable and non-potable water. Limerick Forest does provide recharge to the groundwater aquifers and has an effect on the quality and supply of groundwater. The extent to which Limerick Forest's groundwater resources benefit adjacent users is unknown.

From an environmental perspective groundwater plays an important role in maintaining surface water bodies and wetlands. Groundwater discharge to lakes, rivers and streams provides base flow, which is a source of clean cool water important for fish habitat. Water levels are also maintained during periods of reduced precipitation by base flow. Groundwater also contributes to the high water tables that maintain wetlands and provide water for vegetation.

6.5 Recreation

Limerick Forest attracts many people in pursuit of recreational opportunities. Current recreational activities in Limerick Forest include picnicking, hiking, hunting, bird watching, cross country skiing, horseback riding and trail riding on bikes, motorbikes, all terrain vehicles (ATVs) and snowmobiles.

Recreational management began in the mid 1960s, when two of eventually four picnic sites were developed in Limerick Forest. By the late 1960s snowmobiling was becoming popular and a snowmobile trail network was developed through Limerick Forest. Through the 1970s up to 90 km of trail were groomed and maintained by MNR in Limerick Forest South and Limerick Forest North. Today the picnic sites have been abandoned and the snowmobile trails are no longer maintained by the MNR. However, the existing road network is extensively used by trail riders and hikers, and local snowmobile clubs still maintain and groom sections of trail in Limerick Forest. A local motorcycle club has developed and maintained a trail network through the Limerick Forest South.

Table 6.4 summarizes known recreational activities occurring in Limerick Forest South Tract and Figure 6.2 (Map 15) indicates existing trail systems where recreational activities are concentrated.

Table 6.4: Summary of Recreational Activities and Estimated Use in Limerick Forest South Tract[12]

Activity	Club (membership)	Summer Visits per week	Winter Visits per week	Total Visits
Snowmobiling	LGSA	-	200-300	3 000 (250 per week for 3 months)
Motorcycles	Bytown (160)	60-80	-	1 400 (70 per week for 5 months)
ATVs	Johnston (100)	30-40	30-40	1 400 (35 per week for 10 months)
Mountain Bikes	Brockville, Eastern Ontario	30	-	600 (30 per week for 5 months)
Horses	Eastern Ontario Horse of Course Club	10-15	10-15	520 (13 per week for 5 months)
Hunters	GFGC (625)	-	-	590 (20 per week for 3 months: with bow)(50 per day for 6 days: with gun)
Walkers	-	30-40	30-40	1,400 (35 per week for 10 months)
Others	-	52	50	2,000 (50 per week for 10 months)
	Total	**212 - 257**	**320-435**	**10,190 annual visits**

Source: LFAC Recreation Meeting Minutes Feb 2003

Details on the more active or higher profile activities of snowmobiling, trail riding and hunting are provided in the following sections. The many other activities that occur in Limerick Forest are of more a passive nature and generally occur by individuals or small groups / families without affiliation to a club or association. Generally they are not regulated or represented by a club or association. These include but are not limited to walking, dog walking, jogging, skiing, tobogganing, snowshoeing, dog sledding, bird watching, nature viewing or backroad driving.

6.5.1 Snowmobiling

The Leeds and Grenville Snowmobile Association (LGSA) with its 5 snowmobile clubs and 1,100 members are affiliated with the Ontario Federation of Snowmobile Clubs (OFSC). These 5 snowmobile clubs (Athens, Elizabethtown, Grenville, Kemptville and Rideau Ridge Riders) cooperatively maintain 1000+ km of groomed trail in UCLG.

In 2001 there were approximately 30 km (refer to Table 6.5) of maintained snowmobile trails through Limerick Forest. These trails are signed, maintained and groomed to four meters wide by the LGSA. Some of these trails are on township road allowances, others

[12] Based on input from LFAC recreation subcommittee

are located on Limerick Forest roads. Unlike most of the other motorized recreation in Limerick Forest, snowmobile trails are generally thoroughfares and represent a small segment of an overall provincial trail system.

Table 6.5: Identified Snowmobile Trails through Limerick Forest

Area	Trail Tier	Trail	Approximate Length
Limerick Forest South	Provincial Trail	E113	6.2 km
	Regional Trail	2 LGSA	7.2 km
	Local Trail	G 50	0.8 km
	Local Trail	K 39	1.9 km
Limerick Forest North	Regional Trail	1 LGSA	1.5 km
	Local Trail	K38	8.2 km
North Augusta	Local Trail	G 50	3.8 km
	Local Trail	G 51	0.9 km
		Total	**30.5 km**

Source: Snowmobile Leeds & Grenville Counties Map 2001-2002

6.5.2 Trail Riding

Trail riding is a premier activity in Limerick Forest and draws participants from great distances, commonly as far as two hours away. ATVs, motorcycles, horses and mountain bikes all share the existing forest access roads and trails that for the most part are confined within Limerick Forest. The trail riders are represented locally, to varying degrees, by their respective clubs. Organized events and rides have been hosted by the various clubs in the past.

Trail motorcycles in Limerick Forest.

The existing forest access roads in Limerick Forest are identified on the maps in Figures 5.1 to 5.6. There are approximately 60 km of unimproved forest access roads in Limerick Forest which lend themselves to trail riding. Limerick Forest South and Limerick Forest North have the majority of these with approximately 40 km. Another 11 km of gravelled secondary access roads can be used to link the unimproved roads. In addition to these roads, a network of approximately 30 km of single track trails (generally less than 1 meter wide) has been created in the southern half of Limerick Forest South. These trails are used extensively by motorcycles and mountain bikes.

6.5.3 Hunting

Hunting for whitetail deer, waterfowl and small game is a traditional fall activity in Limerick Forest. Hunters are provincially represented by the Ontario Federation of Anglers and Hunters and locally by fish and game clubs, hunting camps and individuals. The Grenville Fish and Game Club is the largest club in the area with 625 members.

Hunting is regulated provincially by the Ministry of Natural Resources (MNR) under the Fish and Wildlife Conservation Act. Additionally, waterfowl hunting is federally regulated by the Canadian Wildlife Service of Environment Canada under the Migratory Birds Conservation Act. These government agencies monitor wildlife populations and set hunting seasons and harvest limits at sustainable levels.

Whitetail deer is the most sought after species in Limerick Forest and in recent years hunting opportunities have increased. In UCLG the MNR has recently lengthened archery hunting seasons and provided additional licenses to improve the management of an expanding deer population. Hunting statistics are only available for Wildlife Management Units (WMU) and not specifically for Limerick Forest. However 90% of Limerick Forest is located in WMU 66A; the remainder is in WMU 67. MNR records indicate an average of 2,645 hunters spending 18,118 person-days per year hunting deer in WMU 66A[13]. Limerick Forest only occupies 3.5% of the land base of WMU 66A but considering that Limerick Forest is good deer habitat as well as public land it could be a fair estimate at least equal amounts, if not proportionally more, of hunting takes place in Limerick Forest than in the remainder of the WMU 66A. The 3.5% projection of 18,118 person-days of hunting works out to 634 person-days of hunting in Limerick Forest which is similar to the 590 hunting visits estimated by LFAC and shown in Table 6.4.

[13] MNR 2003: unpublished 1999-2001 Kemptville District hunting records.

6.6 Education

Many educational and scientific research activities have taken place in the past. Local schools and groups were encouraged to participate in hands-on learning about the environment and forest management. Professional development programs for MNR employees and associates have also been hosted in Limerick Forest and research has been conducted by students and government agencies. In recent years however these activities have decreased owing in part to the lack of administration to promote and facilitate such activities. Interest in continuing these activities does exist however.

Local schools are probably the largest resource for potential beneficiaries of any educational opportunities in Limerick Forest. The Limerick Forest Chalet in Limerick Forest South has the necessary facilities in place to support large groups of people. There is ample parking, the chalet has running water and a large classroom and there is a diversity of natural forest, plantation forest, wetlands and open field in the immediate area. In the past there has been a self-guided demonstration tour focusing on forest management as well as a self-guided beaver pond trail. Any of these could be re-established. Within the local area of the Chalet (25 km) there are 14 primary and three secondary schools (Annex H lists the schools). Other compartments of Limerick Forest in Leeds County are also in close proximity to schools. There are two Limerick Forest properties close to Athens and another two close to Elgin. Both of these communities have primary and secondary schools.

In addition to educational programs for students, a recent survey by LFAC indicated an interest in adult educational programs. The LFAC education subcommittee is currently developing an adult education program to operate from the Chalet.

Professional development activities, graduate student research and government funded research projects continue in Limerick Forest. The Eastern Ontario Model Forest (EOMF) recently hosted a soils workshop in Limerick Forest for forestry related personnel and interest was expressed for more such workshops in the future. Graduate students have expressed an interest in studying aspects of Limerick Forest and the LFAC Ecology subcommittee is currently seeking students interested in studying invasive species and old growth. The MNR is presently conducting fisher research in and around Limerick Forest, and timber growth and yield plots established in Limerick Forest continue to be monitored by Forestry Canada. LFAC has also established plots for the purpose of monitoring the impacts of forest thinning on understorey vegetation, particularly invasive species.

Opportunities for education and scientific research in Limerick Forest are numerous particularly in the wetlands which have been relatively unaltered by human activities.

Educational tour of Limerick Forest.

6.7 Natural Heritage Protection

Natural heritage features and areas protection is implemented at the municipal planning level under direction of provincial policy. The Provincial Policy Statement issued under Section 3 of 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.*" Official Plans of the various municipalities in which Limerick Forest exists have land zoning and land use policies that complement the provincial policies.

The Provincial Policy Statement pertains to natural heritage protection and it states that natural heritage features and areas will be protected from incompatible development. Specifically, the Policy Statement declares that:

> i) Development and site alteration will not be permitted in significant wetlands south and east of the Canadian Shield and where there are significant portions of wildlife habitat of endangered and threatened species.
>
> ii) Development and site alteration may be permitted in the following cases, 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 has been identified.
>
> . 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;
> . significant areas of natural and scientific interest

iii) Development and site alteration may be permitted on adjacent lands to i) and ii) if it has been demonstrated that there will be no negative impact on the natural connections between them and that these connections are maintained, and improved where possible.

Presently the only natural heritage areas provincially designated in Limerick Forest are:

- ***Provincially Significant Wetlands:***
  . Limerick Forest Wetland
  . Wolford Bog - Pt 1
  . Wolford Bog - Pt 3
  . Wolford Bog - Pt 4
  . Charleville Creek Wetland Complex
  . Cooligan Marshes Wetland Complex
  . Kemptville Creek Part 2 Complex

- ***Area of Natural and Scientific Interest (ANSI):***
  . Groveton Bog
  . Merrickville Bog
  . Cranberry Lake Swamp

Figure 5.8 and 5.9 (Maps 10 and 11) indicates the locations of these features and these areas will also be identified in Municipal Official Plans, to be protected from development.

6.7.1 Significant Woodlands

A woodland valuation system[14] has recently been developed to rank woodlands based on size, interior forest size, proximity to water, proximity to other woodlands, slope and whether or not they are islands. The top 30% of the woodlands for each watershed were mapped and identified as significant. Figure 6.3 (Map 16) indicates much of Limerick Forest has been identified as being significant woodland based on this criteria.

However since these woodlands have not been provincially designated as significant, nor are they expected to be in the near future, there is no regulation to protect them. The valuation system was developed by the Eastern Ontario Model Forest to be used as information for municipalities to consider when developing their Official Plans.

[14] Eastern Ontario Model Forest, 2003

7. PLAN GOAL, OBJECTIVES AND STRATEGIES

GOAL STATEMENT:

TO MANAGE LIMERICK FOREST ON A SUSTAINABLE BASIS FOR A WIDE VARIETY OF GOODS AND SERVICES.

This goal statement was agreed to by the members of the LFAC and was acceptable to the public at large when presented as the Limerick Forest goal at the public open houses. Inherent in this goal, and in keeping with current day thinking, development and management of the resources of Limerick Forest will be conducted in an environmentally acceptable manner. Environmental guidelines will be developed to ensure that impacts are avoided or at the least, be minimized.

In order to achieve the goal several objectives will have to be met. Each of these objectives relates to the various goods and services that LFAC and the public at large have agreed upon that should be provided through the resources of Limerick Forest.

Objective #1: To ensure that Limerick Forest continues to provide a source of economic activity for local people.

Objective #2: Manage Limerick Forest effectively in order to maximize benefits to the United Counties (UCLG).

Objective #3: Provide a wide range of quality recreational opportunities in a safe environment.

Objective #4: Protect the ecological features and values of Limerick Forest.

Objective #5: Provide outdoor educational opportunities and foster a strong understanding of sustainable resource management.

The premise is that if these five objectives can be achieved then the Goal for Limerick Forest will be achieved.

There are a number of ways in which each objective can be achieved and these are referred to as strategies. A number of potential strategies for each objective were discussed at LFAC meetings. Subsequent public meetings have resulted in a modification of the original list of strategies – dropping some, adding others, and modifying some of the original strategies. Table 7.1 lists these final agreed upon strategies that will provide the framework for the formulation of the five year operating plans.

Table 7.1: Potential Strategies for Achieving Plan Objectives

Objective	Strategies
#1: To ensure Limerick Forest continues to provide a source of economic activity for local people.	i) Continue to harvest timber products on a sustainable basis; ii) Continue to harvest fur on a sustainable basis; iii) Continue to extract aggregate where and when appropriate; iv) Develop additional and sustainable economic activities
#2: Manage Limerick Forest effectively in order to maximize benefits to the United Counties (UCLG).	i) Generate revenue from various resource harvesting activities including timber and fur harvesting, and aggregate mining; ii) Generate revenue through user fees and licences for various recreational activities; iii) Generate revenue from other sources including sale of surplus buildings; iv) Dispose of surplus land and acquire additional strategic lands; v) Establish a Limerick Forest Management Trust Fund; vi) Establish a 'Friends of Limerick Forest'. vii) Prepare an effective forest protection plan (fire, insects, disease, invading species)
#3: Provide a wide range of quality recreational opportunities in a safe environment.	i) Identify and design a recreational trail system that will meet the needs of all current and potential users; ii) Identify other (non-trail) type recreational opportunities (e.g. tobogganing, wildlife viewing, picnicking, camping); iii) Prepare a code of conduct for trail and other recreational users; iv) Continue to provide traditional recreational past practices such as hunting.

#4: Protect the ecological features and values of Limerick Forest.	i) Identify and describe Limerick Forest ecosystems and their functions; ii) Identify the challenges and opportunities to cooperate with traditional users; iii) Identify areas for research and study; iv) Identify and describe requirements for protection (e.g. removal of alien species) including exclusion from other uses.
#5: Provide outdoor educational opportunities and foster a strong understanding of sustainable resource management.	i) Determine the level of demand for an outdoor education centre and outdoor education program to be established in Limerick Forest; ii) Based on the outcome of i); plan and develop an outdoor education program including infrastructure requirements iii) Explore opportunities through stakeholder groups to make use of existing facilities / resources; iv) Explore adult education opportunities.\

8. PUBLIC INPUT

An important feature of the plan is that it is based on continuous public input that has been provided from the very inception of the planning process. Annex C describes the various public meetings and workshops that have been held to receive input from the public and response from various milestones achieved during the planning process. Central to the input has been the input and guidance of the LFAC which is comprised of a number of individuals representing the various Limerick Forest stakeholder groups.

Limerick Forest Advisory Committee planning meeting.

9. DESIGNATED USE AREAS (DUAs)

Limerick Forest is a multiple use resource, and a large number of varying activities and resource uses occur within its boundaries. To ensure that resource use and resource service conflicts are minimized and that all acceptable uses are provided with optimum opportunities within the resource base that Limerick Forest has to offer, a number of areas within Limerick Forest have been designated for specific uses. These designated use areas (DUAs) are based on current activities and their patterns within Limerick Forest, on inherent values of Limerick Forest that are best in providing certain specific services and products, and on public input. At this point in time, due to the lack of a full data set on the resources of Limerick Forest, the DUAs that have been made, and which are represented in Fig. 10.1 to 10.6 (Maps 16-21), are tentative. Based on future collected data and its interpretation, and further public input, particularly at time of preparation of the five year operating plans, the DUAs are likely to be modified and further detailed.

With the odd exception (e.g. certain sensitive ecological areas) DUAs are able to host a number of various activities. Separation of activities as reflected in DUAs and within any one DUA are necessary in order to avoid ecological damage, safety concerns and a diminishing of quality recreational experiences.

Table 9.1 provides a description of the DUAs, the acceptable uses within these DUAs, regulations for each, and any restrictions that may apply.

Table 9.1: Limerick Forest Designated Use Areas (DUAs), Description, and Provisional Regulations and Restrictions

Ecological Protection area Example: Wetlands; ANSIs; old growth areas	**Primary use: Resource protection.** **Secondary uses: Selected recreation, fur harvesting, scientific study, education.** Areas of high ecological value that warrant protection due to their importance related to ecological functioning / biodiversity / rare species and habitats. Uses include education and scientific research as well as passive recreation. Motorized recreation will be restricted. Specific areas that are important for scientific research would have limited access, by permit only, to those engaged in scientific research. This area would also include areas that are vital to the protection of groundwater aquifers, aquifer recharging, surface water recharging and wetlands important for flood control. No resource extraction allowed except for sustainable fur harvesting and hunting. Wetland areas are an example of such areas.
Forest Management Area	**Primary use: Forest Management.**

Example: conifer plantations and hardwood forests being managed for timber extraction.	**Secondary uses: Recreation, fur harvesting.** Areas important for the management of commercial timber. Recreational activities allowed. Fur harvesting allowed on a sustainable basis. Resource roads and trail networks allowed.
Multi Use Recreational Area Example: Snowmobile trails, walking trails, hunting, etc. in a common area (most likely these will be areas coincident with timber management).	**Primary use: Recreation.** **Secondary uses: Timber extraction, fur harvesting, other as identified.** Approved trails and structures (including parking facilities and staging areas) allowed as these relate to recreation.
Single Use Recreational Area Example: Cross country skiing or hiking. Skiing trails could be shared with ATVs with each group being confined to defined seasons.	**Primary use: Specific recreational activities**. **Secondary uses: As identified and compatible.** Approved structures allowed only as these relate to the recreational activity.
Aggregate Extraction Area	**Primary use: aggregate extraction.** **Secondary uses: Other uses but only where primary use does not pose a safety issue.**
Service Area Example: parking lots, Limerick Forest HQ and chalet.	**Primary use: Service to the public and to Limerick Forest management.** **Secondary use: none**

10. IMPLEMENTATION

10.1 Administrative Framework

Limerick Forest is managed by the UCLG through staff assigned to the implementation of this long range plan and the subsequent five year operating plans. Management direction comes from the LFAC. The main role of the LFAC is to advise on the modification of this long range management plan and on the preparation of the five year operating plans and the annual work plans. The LFAC ensures a continuing liaison with UCLG and each plan emanating from LFAC is submitted to UCLG for approval.

This long range plan provides input to the Official Plan process in those municipalities under which portions of Limerick Forest fall. As well, modifications to this plan, and the preparation of five year operating plans and annual work plans must be carried out within the framework of existing official plans.

10.2 Next Steps

LFAC will identify the priority activities to be addressed in the first five year operating plan. The strategies described in section 7 of this plan will provide the basis for this identification. It is envisioned that the five year operating plan will clearly describe each of the activities (including the necessary studies needed for building up the Limerick Forest data base) in terms of links to the long range plan, results to be expected, budgets required, responsibilities and scheduling within the five year plan. An example of twelve hypothetical activities is provided in Table 10.1. The detailed five year plan will then be the basis upon which the individual annual plans will be developed.

A monitoring and review procedure, as outlined in Section 14, should be developed in conjunction with the five year operating plan and the annual plans. This procedure should also be designed to accommodate these two levels of planning.

11. ENVIRONMENTAL GUIDELINES

A set of environmental guidelines will be developed as needed for activities that are to take place within Limerick Forest. These guidelines would apply to timber harvesting operations, aggregate extraction activities, recreational trail development and maintenance, and any other infrastructure development that may occur in Limerick Forest. These guidelines will become a supplement to this long range plan.

12. SCHEDULING

Scheduling is important at the five year planning level. However, certain management activities need to be scheduled such as the timing for the preparation of the five year plan and a review of the long range plan. It is suggested that preparation of the first five year plan be initiated immediately. Likewise, LFAC should be considering a review period of the long range plan (e.g. 12 months following approval) and the development of a monitoring procedure.

13. BUDGETING

It is anticipated that some budget will be required as this relates to monitoring and review of the long range plan as well as any modifications that have to be made to the plan. It will be important that the plan is updated on a regular basis and that the latest versions along with past versions are kept on record for public review at any time. This budget will likely be allocated to forestry (or similar) technical services of UCLG.

Table 10.1: Sample Schedule of Plan Implementation

Strategy / Activity	1st Five Year Operation Plan					2nd 5 yr. OP	3rd 5 yr. OP	4th 5 yr. OP	5th 5 yr. OP
	Year 1	Year 2	Year 3	Year 4	Year 5				
1. Study to determine uses and values of small outlying parcels of Limerick Forest									
2. Development of framework to inaugurate a Limerick Forest Trust									
3. Identification and description of potential old growth areas									
4. Development of an education program for Limerick Forest									
5. Red pine thinning (state compartment #)									

6. Red pine clearcutting (state compartment #)									
7. Hardwood silvicultural treatments (state compartment #)									
8. Comprehensive ecological survey of Limerick Forest									
9. Develop tenure policy for all Limerick Forest lands									
10. Design, production and erection of signage for Limerick Forest									
11. Layout of cross country ski trails									
12. Development of environmental guidelines for all activities									

Budget projections directly relating to the activities in both the annual work plan and the 5 year operating plan are prepared by LFAC on an annual basis. The actual budget allocated for the annual work plan is determined by the UCLG Public Works Committee on an annual basis. The 5 year budget projections are for planning purposes only.

14. MONITORING, REVIEW AND REVISIONS

The long range plan provides the framework for the five year operating plans. In order to ensure that the five year operating plans, during planning stages and implementation continually reflect the goals and objectives of the long range plan, the long range plan must be continually revisited. Monitoring at the five year operating plan level is critical to ensure that specific activities are achieving their targets and that these activities fall within the general guidance provided by the long range plan.

Monitoring of the long range plan is also critical. Broad activities, including the various studies that have been recommended, must be monitored to ensure that implementation is occurring, that schedules are being adhered to and, more importantly, that results relate back to the plan's original goal and objectives. A monitoring program will be prepared and this program will include the steps indicated in Table 14.1.

The key to effective monitoring is the identification and application of verifiably objective indicators. These will be indicators that can be measured objectively and compared against baseline information that is made available prior to the initiation of a particular activity. For instance, if the objective of conducting a thinning of a red pine plantation is to encourage stand conversion to hardwoods, then the monitoring focus would be on the understorey. A sample plot in an unthinned stand would be compared with one in a similar stand that has undergone thinning. Plant species, numbers and distribution would be identified and measurements would be made over time to indicate whether or not the objective is being met. Similar indicators would be identified and measured for the host of general activities that will result from the planning exercise.

Table 14.1: Monitoring Program Composition

Component	Description	Schedule	Responsibility
Identification of all activities		Upon approval of plan	LFAC
Identification of verifiably objective indicators		Prior to plan implementation	LFAC
Establishment of baseline data		Prior to plan implementation or as soon as budgets allow	UCLG (forest management team)
Measurement of indicators		Annually for each activity supported in the plan	UCLG (forest management team)
Monitoring report		Annually	UCLG (forest management team)
Monitoring results to be fed into the management system			LFAC and UCLG
Management prescriptions to be modified as a result of monitoring			LFAC and UCLG
Plan to be revised as a result of monitoring			LFAC and UCLG

15. REFERENCES

Agriculture Canada and Agri Food Canada and Ontario Ministry of Agriculture, Food and Rural Affairs,1997. *Best Management Practices: Water Wells.*

Agriculture Canada and Ontario Ministry of Agriculture, 1994. *Best Management Practices: Water Management.*

Bezener, A., 2000. *Birds of Ontario*, Lone Pine Publishing, Edmonton.

Borczon, E.L., 1982. *Evergreen Challenge, The Agreement Forest Story.* Ministry of Natural Resources, Toronto

Cadman, M.D., Eagles, P.F.J., and Helleiner, F.M., 1987 *Atlas of the Breeding Birds of Ontario.* Federation of Ontario Naturalists and the Long Point Bird Observatory, Toronto

Chapman, L.G. and Putman, D.F.,1984. *The Physiography of Southern Ontario, Ontario Geological Survey, Special Volume 2.*

Dillon Consulting Limited, 2001. *The United Counties of Leeds and Grenville Groundwater Management Study*.

Dobbyn, J.S., 1984. *Atlas of the Mammals of Ontario.* Federation of Ontario Naturalists, Toronto.

Eastern Ontario Model Forest, 2003. *Woodland Valuation System. Version 2.0. Methods & Rationale for Assigning Woodland Value at the Patch Scale for Consideration in Planning and Conservation in Eastern Ontario.*

Eder, T., 2002. *Mammals of Ontario.* Lone Pine Publishing, Edmonton.

Heritage Quest Inc., 2001. *Stage 2 Archaeological Assessment Shanty Knoll Quarry Lots 2/3, Concession 8, Township of Augusta, Grenville County*.

Hosie, R.C., 1990. *Native Trees of Canada*. 8th ed. Fitzhenry & Whiteside Ltd., Markham. in cooperation with the Canadian Forestry Services (Environment Canada) and the Canadian Government Publishing Centre, Supply and Services, Canada.

Kershaw, L., 2001. *Trees of Ontario*. Lone Pine Publishing, Edmonton.

Kostuch Engineering Limited, 2001. *Natural Environment Level 1 and Level 2 Report for Class "A" - Category 3 Pit Licence Application.*

Leeds-Grenville Snowmobile Association, 2001. *Snowmobile Leeds and Grenville Counties 2001-2002 Map.* Henderson Printing Inc., Brockville.

MacCulloch, R.D., 2002. *The ROM Field Guide to amphibians and reptiles of Ontario.* Royal Ontario Museum and McClelland & Stewart Ltd., Toronto.

Ontario Ministry of Municipal Affairs and Housing, 2002. *Ottawa Regional Analysis: Final Working Report October 2002.*

Ontario Ministry of Municipal Affairs and Housing, 1996. *Provincial Policy Statement.*

Ontario Ministry of Natural Resources (MNR), 1992. *Manual of Implementation Guidelines for the Wetlands Policy Statement.* Queens Printers, Ontario.

Ontario Ministry of Natural Resources (MNR), 1993. *Ontario Wetlands Evaluation System Southern Manual 3rd Edition.*

Ontario Ministry of Natural Resources (MNR), 1992. *Forest Management Plan for Leeds and Grenville Counties Agreement Forest (Limerick Forest) for the Period April 1, 1992 to March 31, 2012.*

Ontario Ministry of Natural Resources (MNR), 1987. *Forest Management Plan for Leeds and Grenville Counties Agreement Forest (Limerick Forest) for the Period April 1, 1987 to March 31, 1992.*

Ontario Ministry of Natural Resources (MNR), 2000. *A Silvicultural a Guide to Managing Southern Ontario's Forests, Version 1.1.* Queens Printers for Ontario, Toronto.

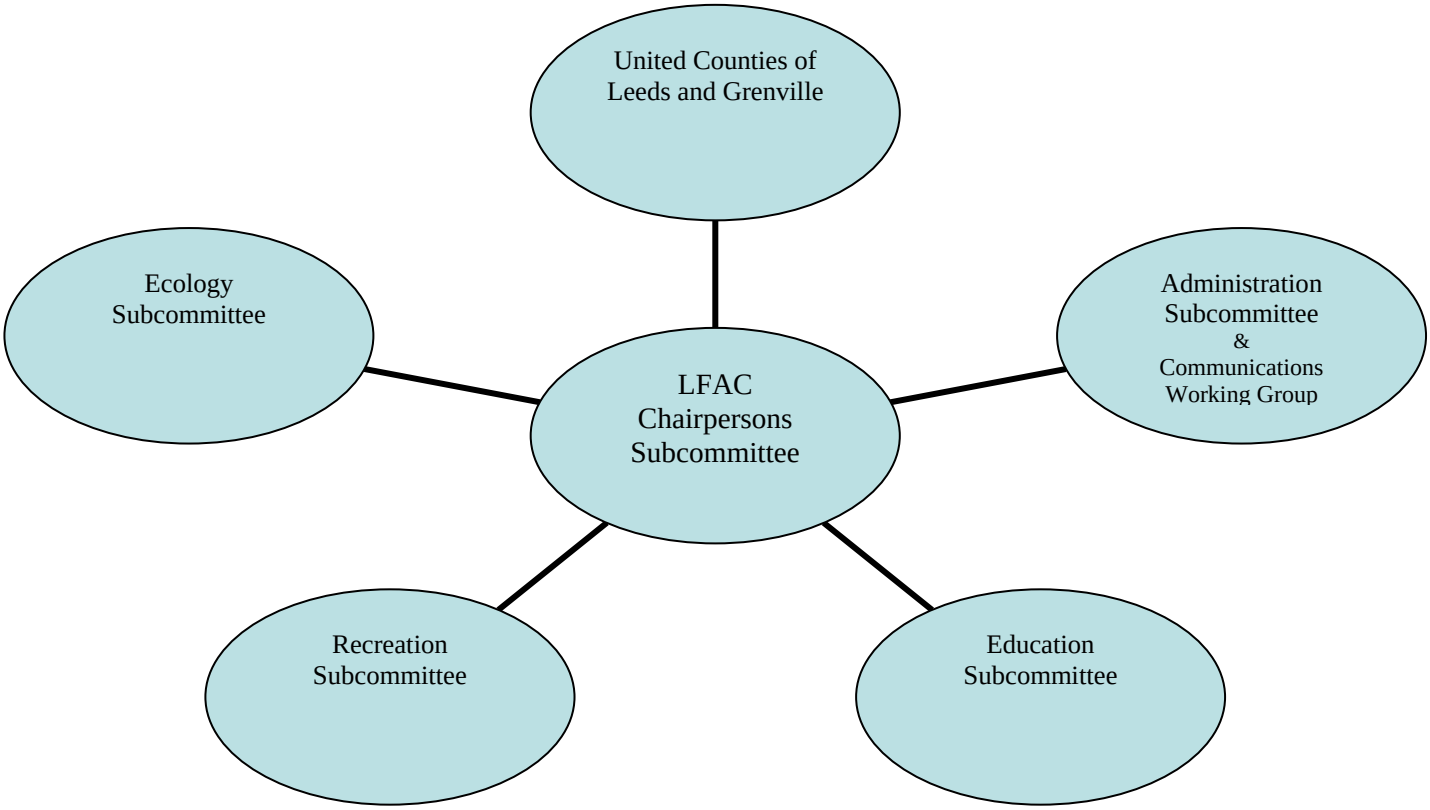
Ontario Department of Lands and Forests, 1962. *Management Plan for Leeds and Grenville County Forest Management Unit of the Kemptville District for the period from April 1, 1962 to March 31, 1982.*

Young, A.F., Gorrell, G.A., and Fletcher, T.W., 1983. *Sand and Gravel Assessment for the United Counties of Leeds and Grenville, Ontario Geological Survey Open File 5432.*

ANNEX A

LIMERICK FOREST ADVISORY COMMITTEE

LIMERICK FOREST ADVISORY COMMITTEE ORGANIZATIONAL CHART



Limerick Forest Advisory Committee
2003 Members

Administration Subcommittee

Bob Gollinger
Sandy Hay
Jack Henry
Greg Knops
John McCrea
Fred McFarland
Mark Rowsell
Les Shepherd
George Vail

Communications Working Group

Dale Cameron
Tom Charbonneau
Kirk Easterbrook
Tom Graham
Sandy Hay
Jack Henry
Greg Knops
John McCrea
Fred McFarland
Stan Perrin
Mac Peterson
Mark Rowsell
Fred Schueler
Steve Wesley Smith
Arnold Williams

Ecology Subcommittee

Dale Cameron
Jackie Dunne
Dale Fretwell
Philip Fry
Stew Hamill
Doug Hayes
Jim Holmes
A.J. Myers
Fred Schueler
Pieter Trip
Paul VanLuit
Cliff Yeatman

Education Subcommittee

Jackie Dunne
Andrea Howard
Connie Mitchell
Cliff Rogers
Fred Schueler
Steve Wesley Smith

Forest Resources Subcommittee

John Baker
Barklay Cormack
Kirk Easterbrook
Stew Hamill
Jack Henry
Greg Knops
Steve Lindsay
Pat McNamee
Adam Shewchuk
Rick Walton

Recreation Subcommittee

Brian Day
Dale Fretwell
Robert Gates
Dale Kingston
Valerie Kirkwood
Cameron Mack
Fritz McKellar
Karen McPherson
Stephen McPherson
Paul Meier
Larry Murray
Mike O'Reilly
Peggy Taylor
Maureen Venables
Arnold Williams

Volunteer Planner

John Ambrose

Counties Council Representative

George Vail, Reeve, Township of Augusta

Counties Staff

Leslie Shepherd, Director of Works & Planning Services / Physical Asset Management
Sandy Hay, County Planner
Ed Reynolds, Forest Manager
Rob Ross, Resource Technician

ANNEX B

RECORDS OF PUBLIC INPUT TO PLANNING PROCESS

Limerick Forest Planning Chronology

Date	Place	Activity/Attendees	Comments
Jan 31, 2001	Kemptville	Limerick Forest Stakeholders Meeting	Recommended public meeting in March
Mar 24, 2001	Roebuck	Limerick Forest Community Stakeholder Meeting 150 attend	18 sign up for forest advisory committee
May 11, 2001	Roebuck	forest advisory committee field trip to Limerick Forest	Very informative
Jun 27, 2001	Charleville	Limerick Forest Advisory Committee meets and forms into 5 Sub-committees	concerns and objectives identified
Sep 20,2001	Brockville	First Draft Strategic Plan	objectives, strategies, issues & data requirements
Oct-Dec 2001	Various	Sub-committees reviewed Strategic Plan	Firmed up objectives and costs.
Dec 18, 2001	Roebuck	First Draft Terms of Reference for the Limerick Forest Advisory Committee (LFAC)	Began draft of each sub-committee work plan
Jan 2002	Various	5 Sub-committees each hold their own meetings	Develop work plans / budgets
Feb 4, 2002	Brockville	Presentation Committee Presents work plan to United Counties Public Works Committee	Transition work plan and $18000 budget approved
Feb 4 to Dec 31, 2002	Limerick Forest Kemptville	Work plan proceeds including data collection for incorporation into Limerick Forest Plan	file transfer, forest inventory, mapping, and database.
Apr 22, 2002	Algonquin	Limerick Forest Advisory Committee Meeting	Terms of Reference and Operating Procedures amended and accepted
Jun - Apr 2003	Various	Various subcommittees meet on many occasions re long range planning	
Oct 19 2002	North Grenville	Limerick Forest Community Meeting	Public Meeting 80 people in attendance
Dec 4 2002	Algonquin	Chairperson Meeting	Approve2003 Annual Work Plan
Jun - Apr 2003	Various	Various subcommittees meet on many occasions re long range planning	
Apr 12, 2003	Charleville	Facilitated Plan Alternatives Session LFAC members answer 8 strategic questions	8 general statements re: Limerick Forest management result
Apr 30, 2003	Roebuck	Public Participation and Information Session Public comment on 8 LFAC statements	41 attend
May 1, 2003	Merrickville	Public Participation and Information Session Public comment on 8 LFAC statements	40 attend
Jun 12, 2003	Charleville	LFAC meet to review Designated Use Areas	
Jul 9, 2003	Brockville	First Draft presented to Counties Council / Municipalities for comment	
Jul 23, 2003	Algonquin	LFAC Chairpersons Meeting to approve Designated Use Areas	
Aug 16, 2003	Brockville	LFAC Plan Review Committee incorporate comments received into plan	
Sep 10 , 2003	Brockville	Draft Final Presented to Counties Council	

Summary of LFAC Facilitated Plan Alternatives Session April 12, 2003

The following 8 questions were answered by all 27 LFAC members who attended the session. The session was professionally facilitated by a volunteer apart from the LFAC. Below is a summary of the responses. These responses will form the basic plan direction to present to the public at 2 open house events.

Question 1:
In your opinion, how should the timber, fur and aggregate resources of Limerick Forest be dealt with and who should be the beneficiaries of these resources?

All supported timber harvesting to some degree. Some conditions noted were that:

-it should be sustainable

-harvesting be a tool for environmental enhancement or encouraging natural regeneration

-ecologically sound- environmental assessment and monitoring should be used

-some areas to be protected from harvesting

Most supported a limited utilization of aggregate resources, some thought that they should be for local use only.

The lack of specific reference to fur implies it not to be a high priority. A couple were morally opposed to it a few others felt it should continue for wildlife management and or nuisance beaver control.

Some (15%) specifically wanted local businesses and workers to benefit from the work created from resource utilization.

The majority wanted any revenue generated from the forest directed back to the forest. Others felt that the Counties should receive the revenue still others felt revenues should be shared between the Counties and the forest.

Question 2
Would you support stand conversion from red pine to hardwoods (natural regeneration) and if so, under what conditions?

The majority supported stand conversion to natural hardwoods. Some conditions noted were:

-each stand should be considered and managed on an individual basis

-some conifers should be retained to create mixed stand

Question 3
How and to what degree should sensitive and rare ecological features be protected from all other uses and activities in LF? Should these features form the foundation of the management program for LF?
Most information supported the overall protection of the ecological features to some degree, with the rare and threatened being of more concern than the more common features. Most agreed (45%), to restrict sections to protect features and many felt this could be accomplished by use of signage.

Opinions ranged from restricting all activities in sensitive areas to no restrictions anywhere. It seems most want to know what is important and where it is, using established protocols (i.e. Prov. standards). Then, protect the most sensitive by means of signs, maps and timing of activities.

Should the features form the foundation of the Management program for LF?

Most felt these features are important but not the foundation of the management program.

Question 4
What would you like to see in an education program for LF?

From the data received it is apparent that most everyone agrees that LF has something for everyone to learn. Everything from the history of the area, sustainable resource use, biodiversity, habitat, to how LF fits into the larger landscape and how various uses impact the environment.
Most supported sustainable resource management and biodiversity related education(25%).
How to deliver this education program, it was clear that as many (62%) supported school programs in LF as well as the use of self guided trails (30%) with signs? Plaques to "show and tell". No strong support was given for the Chalet to be the focal point, but could be assumed since that was not part of the question.
How to fund such a program ranged from self funding to private sector controlled, with most not commenting on the dollars.

Question 5
What type of management structure should be in place to manage Limerick Forest?

Most commented or implied the present system was good as there was good balance of citizens, elected officials and staff involved in the management of the forest. Most supported forest manager staffing requirement and liked the advisory committee steering the management direction. A common suggestion from 25% of the responses was that the advisory committee should be involved more in steering rather than managing and that the forest manager should have more discretion for operational decisions.

Question 6
What source of revenue should be considered for covering management costs of Limerick Forest? Is there merit in considering the disposal of Limerick Forest lands that will have little value vis a vis the objectives of the plan and using the proceeds to purchase other areas that better meet Limerick Forest objectives?

Most indicated the natural resources of timber and aggregates as source of revenue. Others suggestions also included taxes, private and government grants, donations or voluntary memberships, event fees and leasing of the Limerick Forest Headquarters facilities. More controversial suggestions were user fees with 50% supporting and 50% opposing and land leasing which the majority opposed.

The slight majority were opposed to land sales (55%) and those who supported any land sales did so on various conditions such as if proceeds are used to purchase other lands, sold lands to remain forested. Most indicated land acquisitions should be pursued regardless of their position on sales. Some suggestions were to try to buy crown lands or set up a system that lands may be donated to Limerick Forest.

Question 7
What conflicts amongst various users exist and how best can these be addressed?

The conflicts with recreational users and ecological/ environmental conditions was the biggest issue noted on 30% of the questionnaires. The other existing conflicts were aimed at various types of recreation and the use of the same areas. Some conflicts with neighbours and resource harvesting were noted.
In dealing with these conflicts, the majority (56%) suggested communications and signage as the most appropriate means to reduce conflicts. There was some support for designated areas (20%) but many mentioned compromise, scheduled usage and if necessary, bring LFAC into settle conflicts.

Question 8
Are there current recreational (or predicted) uses in LF that should not be allowed and if so, which ones specifically and why should they not be allowed?

Most surveyed agreed (70%) that there were no recreational uses that should be stopped or not allowed in LF. Many were concerned about protecting sensitive areas from destructive uses such as ATVs and 4x4 trucks, or at least at certain times of the season.
Any activity, present or future that would be damaging to the forest should be considered for removal from the list of recommended uses (i.e. permanent tree stands).

Summary of Public Input

From Limerick Forest Planning Open Houses 2003

Two Limerick Forest Management Plan Public Participation and Information Sessions were held. One on April 30, 2003 in Roebuck, the other on May 1, 2003 in Merrickville. These events were widely advertised with newspaper articles, newspaper advertisements, posters, mail outs, internet posting and word of mouth. At these open house events, relevant Limerick Forest information was displayed on maps and posters and Counties Forestry staff and LFAC volunteers were present to give interpretive tours of the displays and answer questions. There were also 17 general statements relating to the general direction that the Limerick Forest Advisory Committee is steering the Limerick Forest Management Plan. These statements were copied onto flip charts as well as hand outs and the public was invited to record their comments of support, disapproval or otherwise onto either of these forms. Total attendance to these 2 events was 81 people of which 41 returned their comments on the handout paper and an unknown number wrote their comments on the flip charts. Summarized below is the numbers of people who outright agreed or disagreed or recorded no comment, as well as a summary of the written comments. The original sources of this summary are available for review by contacting the Forest Manager at 342-3840 ext 329.

RESOURCE EXTRACTION:

- Timber harvesting should be continued.
  45 *Agree,* ***1*** *Disagree,* ***0*** *Unclear or unrelated comment,* ***35*** *No Comment*

- Continue timber management to convert plantation to natural forest but retain some red pine.
  24 *Agree,* ***1*** *Disagree,* ***0*** *Unclear or unrelated comment,* ***56*** *No Comment*

- Aggregate should be extracted on a limited basis but for local use only.
  18 *Agree,* ***5*** *Disagree,* ***1*** *Unclear or unrelated comment,* ***57*** *No Comment*

- Fur harvesting should be allowed to continue.
  21 *Agree,* ***3*** *Disagree,* ***0*** *Unclear or unrelated comment,* ***57*** *No Comment*

- Resource revenues should be used to support Limerick Forest management.
  22 *Agree,* ***1*** *Disagree,* ***0*** *Unclear or unrelated comment,* ***58*** *No Comment*

Summary of Comments:

** 16 comments expressed support for sound forest management*
** 8 did not want clear cutting*
** 3 supported planting red pine if appropriate*
** 2 supported stand conversion conditionally on projected use of forest*
** 3 supported aggregate extraction "only" for Limerick Forest*
** 4 supported fur harvesting and hunting in order to keep ecological balance.*
** 2 wanted careful control and limits on fur harvesting*
** 2 said Limerick Forest should be self funding*

Other comments:

** local operators only for resource extraction*

** aggregated extraction will cause more damage than all other uses*
** aggregate extraction should be limited*
** taxes should support Limerick Forest management*

REVENUES:

- A variety of revenue opportunities with resource extraction revenues providing the foundation.
  ***12** Agree, **4** Disagree, **6** Unclear or unrelated comment, **59** No Comment*

- Land disposal could be considered under certain circumstances and criteria.
  ***15** Agree, **14** Disagree, **4** Unclear or unrelated comment, **48** No Comment*

- Some revenues should be used to purchase other strategic land parcels.
  ***20** Agree, **4** Disagree, **2** Unclear or unrelated comment, **55** No Comment*

Summary of comments:

** 5 suggested other revenue should come from a donations, membership, user or event fees.*
** 3 commented that landscape context (corridors, linkages) should be considered for any land disposal or acquisition.*
** 2 wanted revenues to go back to the forest*
** 2 would consider land disposal as last resort*
** 2 wanted more info before commenting on land disposal/acquisition*

Other comments:

** since Limerick Forest is public land, taxes should fund forest, not forest revenue*
** too much invested in land; too valuable to sell*
** land has value without resource sale; habitat is invaluable*

MANAGEMENT:

- Advisory committee should continue but only in a steering capacity.
  ***20** Agree, **0** Disagree, **0** Unclear or unrelated comment, **61** No Comment*

- Forest manager should have more autonomy re: operational decisions.
  ***13** Agree, **7** Disagree, **0** Unclear or unrelated comment, **61** No Comment*

Summary of Comments:

** 6 supported with control based on LFAC approved plans and budgets*
** 3 were concerned about loss of LFAC interest*
** 2 suggested LFAC members represent a diversity of users*

ECOLOGICAL FEATURES:

- Important to protect the most sensitive ecological features.
  19 *Agree,* ***1*** *Disagree,* ***2*** *Unclear or unrelated comment,* ***59*** *No Comment*

- Ecological features provide a foundation (but not the foundation) of the Limerick Forest management program.
  13 *Agree,* ***0*** *Disagree,* ***3*** *Unclear or unrelated comment,* ***65*** *No Comment*

Summary of Comments:

** 4 expressed concern that only truly sensitive areas should be protected and that recreation should not be restricted to protect common features.*

** 2 commented specifically to protect wetlands.*

** 2 wanted sensitive and features identified and their value ranked*

Other comments were:

**to protect old growth*

**keep motorized vehicles on designated trails*

** use Limerick Forest as a model for environmental protection*

** remain objective: its origins were marginal farmlands & rehabilitative reforestation*

EDUCATIONAL PROGRAM:

- Important to provide a wide range of educational opportunities.
  29 *Agree,* ***0*** *Disagree,* ***4*** *Unclear or unrelated comment,* ***48*** *No Comment*

Summary of Comments:

** 14 supported targeting younger people/groups*

** 2 suggested using the chalet as an education center.*

CONFLICTS:

- Biggest conflict between recreation and ecological values.
  8 *Agree,* ***1*** *Disagree,* ***8*** *Unclear or unrelated comment,* ***64*** *No Comment*

- Designate areas for exclusive uses; schedule use to avoid conflicts.
  18 *Agree,* ***0*** *Disagree,* ***4*** *Unclear or unrelated comment,* ***59*** *No Comment*

Summary of Comments:

** 7 comments supported the ideas that there was not a problem, lots of room for everyone and just a need to respect other users.*

** 9 agreed with designating areas and scheduling to some degree where possible.*

** 4 comments noted problems with scheduling (ie. cost, enforcement)*

** 3 said ecology has priority*

RECREATIONAL USES:

- Currently all recreational uses are acceptable.
  18 *Agree,* ***6*** *Disagree,* ***21*** *Unclear or unrelated comment,* ***36*** *No Comment*

- Future uses should be considered on an individual basis re: conflicts and damage.
  15 *Agree,* ***1*** *Disagree,* ***21*** *Unclear or unrelated comment,* ***44*** *No Comment*

Summary of Comments:

** 8 commented positively towards the current recreational uses in Limerick Forest.*

** 2 commented that current recreational uses should be assessed for acceptability*

** 2 commented that current uses were acceptable but may require some regulation in the future if usage increases and or forest quality is compromised*

** 2 disagreed with hunting.*

** 6 disagreed with motorized recreation.*

** 4 wanted more trails or trail improvement.*

** 4 wanted the Chalet available for use, by the Boy Scouts for example.*

Other comments included:

** develop a picnic site*

** encourage and promote Limerick Forest for recreation*

ANNEX C

LIMERICK FOREST COMPARTMENT LOCATION DESCRIPTION AND AREA

Limerick Forest Compartment Description and Area Summary

Limerick Forest Compartment	Description	Municipality	Tract	Area (ha)
1	PT S1/2 LOT 3, CON A	Merrickville-Wolford	Limerick Forest North	42.9
2	PT LOT 1, CON 1	Merrickville-Wolford	Limerick Forest North	30.8
3	PT LOT 2, CON 1	Merrickville-Wolford	Limerick Forest North	31.6
4	PT LOTS 2,3, CON 1	Merrickville-Wolford	Limerick Forest North	24.3
5	PT LOT 3, CON 1	Merrickville-Wolford	Limerick Forest North	34.8
6	PT LOT 4, CON 1	Merrickville-Wolford	Limerick Forest North	44.5
7	PT LOT 1, CON 1	Merrickville-Wolford	Limerick Forest North	5.5
8	PT LOT 2, CON 1	Merrickville-Wolford	Limerick Forest North	12.2
9	PT LOT 3, CON 1	Merrickville-Wolford	Limerick Forest North	13.4
10	PT LOT 3, CON 1	Merrickville-Wolford	Limerick Forest North	20.2
11	PT LOT 4, CON 1	Merrickville-Wolford	Limerick Forest North	29.1
12	PT LOTS 1,2,3, CON 1,2	Merrickville-Wolford	Limerick Forest North	172.1
13	PT N1/2 LOT 4, CON 2	Merrickville-Wolford	Limerick Forest North	40.5
14	PT E1/2 LOT 6, CON 2	Merrickville-Wolford	Limerick Forest North	16.2
15	PT E1/2 LOT 6, CON 2	Merrickville-Wolford	Limerick Forest North	14.6
16	PT LOT 1, CON 2	Merrickville-Wolford	Limerick Forest North	12.8
17	PT LOTS 1,2, CON 2	Merrickville-Wolford	Limerick Forest North	9.7
18	PT LOTS 1,2, CON 3	Merrickville-Wolford	Limerick Forest North	21.5
19	PT LOTS 2,3, CON 3	Merrickville-Wolford	Limerick Forest North	11.3
20	PT LOTS 1,2, CON 3	Merrickville-Wolford	Limerick Forest North	31.9
21	PT LOTS 1,2, CON 3	Merrickville-Wolford	Limerick Forest North	94.3
22	N1/2 LOT 1, CON 4	North Grenville	Limerick Forest North	45.7
23	SW1/4 LOT 3, CON 4	North Grenville	Limerick Forest North	16.2
24	N1/2 LOT 2, CON 5	North Grenville	Limerick Forest North	35.7
25	N1/2 LOT 1, CON 5	North Grenville	Limerick Forest North	39.9
26	PT LOT 2, CON 5	North Grenville	Limerick Forest North	13.5
27	PT S1/2 LOT 1, CON 5	North Grenville	Limerick Forest North	25.9
28	PT LOTS 1,2, CON 5	North Grenville	Limerick Forest North	46.4
29	PT LOTS 1,2, CON 5	North Grenville	Limerick Forest North	8.4
30	N1/4 LOT 4, CON 6	North Grenville	Limerick Forest North	24.7
31	PT LOT 4, CON 6	North Grenville	Limerick Forest North	19.6
32	PT N1/2 LOT 3, CON 6	North Grenville	Limerick Forest North	41.2
33	PT LOT 4, CON 6	North Grenville	Limerick Forest North	18.1
34	PT S1/2 LOT 9, CON 9	North Grenville	Limerick Forest South	25.6
35	PT S1/2 LOT 9, CON 9	North Grenville	Limerick Forest South	17.8
36	PT LOTS 11,12, CON 10	North Grenville	Limerick Forest South	24.5
37	PT LOTS 10,11, CON 10	North Grenville	Limerick Forest South	27.7
38	PT LOT9, CON 10	North Grenville	Limerick Forest South	19.5
39	PT LOTS 11,12, CON 10	North Grenville	Limerick Forest South	12.1

40	PT LOTS 10,11, CON 10	North Grenville	Limerick Forest South	29.3
41	PT LOTS 9,10, CON 10	North Grenville	Limerick Forest South	40.4
42	PT LOT 9, CON 10	North Grenville	Limerick Forest South	16.4
43	PT LOTS 11,12, CON 10	North Grenville	Limerick Forest South	11.6
44	PT LOTS 10,11, CON 10	North Grenville	Limerick Forest South	20.8
45	PT LOT 10, CON 10	North Grenville	Limerick Forest South	17.2
46	PT LOT 9, CON 10	North Grenville	Limerick Forest South	25.2
47	PT LOT 37, CON 9	Edwardsburgh-Cardinal	Limerick Forest South	17.0
48	PT 36,37,COMM, CON 9	Edwardsburgh-Cardinal	Limerick Forest South	75.0
49	PT COMM, CON 9	Edwardsburgh-Cardinal	Limerick Forest South	7.3
50	PT LOT 36,37,COMM, CON 9	Edwardsburgh-Cardinal	Limerick Forest South	26.7
51	PT LOT 37,COMM, CON 9	Edwardsburgh-Cardinal	Limerick Forest South	28.3
52	PT LOT 37,COMM, CON 9	Edwardsburgh-Cardinal	Limerick Forest South	11.1
53	PT LOT 37, CON 8	Edwardsburgh-Cardinal	Limerick Forest South	24.1
54	PT LOT 37,COMM, CON 8	Edwardsburgh-Cardinal	Limerick Forest South	17.8
55	PT LOT 37,COMM, CON 8	Edwardsburgh-Cardinal	Limerick Forest South	29.1
56	PT LOT 1, CON 10	Augusta	Limerick Forest South	17.8
57	PT LOT 1, CON 10	Augusta	Limerick Forest South	13.6
58	PT LOT 1, CON 10	Augusta	Limerick Forest South	18.6
59	PT LOT 2, CON 10	Augusta	Limerick Forest South	8.4
60	PT LOT 3, CON 10	Augusta	Limerick Forest South	9.7
61	PT LOT 3, CON 10	Augusta	Limerick Forest South	8.1
62	PT LOT 3, CON 10	Augusta	Limerick Forest South	26.9
63	PT LOT 1, CON 9	Augusta	Limerick Forest South	19.8
64	PT LOT 3, CON 9	Augusta	Limerick Forest South	9.8
65	PT LOTS 3,4, CON 9	Augusta	Limerick Forest South	14.9
66	PT LOTS 1,2, CON 9	Augusta	Limerick Forest South	10.9
67	PT LOTS 2,3, CON 9	Augusta	Limerick Forest South	10.1
68	PT LOTS 3,4, CON 9	Augusta	Limerick Forest South	10.9
69	PT LOT 1, CON 9	Augusta	Limerick Forest South	15.5
70	PT LOTS 1,2, CON 9	Augusta	Limerick Forest South	21.5
71	PT LOTS 2,3, CON 9	Augusta	Limerick Forest South	20.3
72	PT LOTS 3,4, CON 9	Augusta	Limerick Forest South	7.7
73	PT LOTS 1,2,3,4, CON 8,9	Augusta	Limerick Forest South	161.9
74	PT LOTS 1,2, CON 8	Augusta	Limerick Forest South	11.5
75	PT LOTS 2,3,4, CON 8	Augusta	Limerick Forest South	24.2
76	PT LOTS 1,2, CON 8	Augusta	Limerick Forest South	18.8
77	PT LOTS 3,4, CON 8	Augusta	Limerick Forest South	22.8
78	PT LOTS 2,3, CON 8	Augusta	Limerick Forest South	28.3
79	PT LOTS 3,4, CON 8	Augusta	Limerick Forest South	27.9
80	PT LOTS 2,3,4, CON 8	Augusta	Limerick Forest South	43.3
81	PT LOTS 3,4, CON 8	Augusta	Limerick Forest South	12.1
82	PT LOT 27, CON 8	Augusta	North Augusta	32.2
83	PT LOT 28, CON 8	Augusta	North Augusta	23.2
84	PT LOT 29, CON 8	Augusta	North Augusta	8.9
85	PT LOT 29, CON 8	Augusta	North Augusta	17.0
86	PT LOT 26, CON 7	Augusta	North Augusta	15.0
87	PT LOT 26, CON 7	Augusta	North Augusta	18.6
88	PT LOT 8, CON 7	Athens	Other Leeds	17.8

89	PT LOT 8, CON 7	Athens	Leeds	20.2
90	PT LOTS 18,19, CON 4	Rideau Lakes	Leeds	24.9
91	PT LOTS 18,19, CON 4	Rideau Lakes	Leeds	28.7
92	PT LOT 19, CON 4	Rideau Lakes	Leeds	21.0
93	PT LOT 9, CON 4	Merrickville-Wolford	Grenville	22.8
94	PT LOT 9, CON 4	Merrickville-Wolford	Grenville	19.5
95	PT LOT 9, CON 4	Merrickville-Wolford	Grenville	27.9
96	PT LOT 9, CON 4	Merrickville-Wolford	Grenville	22.3
97	PT LOT 12, CON 2	Merrickville-Wolford	Grenville	20.2
98	PT LOT 12, CON 2	Merrickville-Wolford	Grenville	21.9
99	PT LOT 12, CON 2	Merrickville-Wolford	Grenville	18.2
100	PT LOT 15, CON 7	Augusta	North Augusta	34.7
101	PT LOT 16, CON 7	Augusta	North Augusta	34.0
102	PT LOT 14, CON 6	Augusta	North Augusta	18.6
103	PT LOT 14, CON 6	Augusta	North Augusta	20.2
104	PT LOT 8,CON 10	North Grenville	Limerick Forest South	21.5
105	PT LOT 8,CON 10	North Grenville	Limerick Forest South	19.1
106	PT LOTS 1,2, CON 10	North Grenville	Grenville	70.8
107	PT LOT 10, CON 11	Elizabethtown-Kitley	Cranberry Lake	29.5
108	W1/2 LOT 4, CON 9	Augusta	Limerick Forest South	40.5
109	PT LOTS 5,6, CON 7,8	Merrickville-Wolford	Grenville	56.3
110	PT LOTS 5,6, CON 7	Merrickville-Wolford	Grenville	41.7
111	PT LOTS 19,20, CON 7	Augusta	North Augusta	41.7
112	PT LOTS 19,20, CON 7	Augusta	North Augusta	25.1
113	SW1/4 LOT 21, CON 7	Augusta	North Augusta	20.2
114	NE1/4 LOT 22, CON 7	Augusta	North Augusta	22.3
115	SE1/4 LOT 22, CON 7	Augusta	North Augusta	16.2
116	NW1/4 LOT 22, CON 7	Augusta	North Augusta	19.8
117	NE1/4 LOT 23, CON 7	Augusta	North Augusta	16.2
118	PT LOTS 22,23, CON 7	Augusta	North Augusta	40.5
119	PT LOT 1, CON 5	Elizabethtown-Kitley	Leeds	40.1
120	PT LOTS 27,28, CON 6	Augusta	North Augusta	52.6
121	N1/2 LOT 4, CON 5	Rideau Lakes	Leeds	45.6
122	PT LOTS 4,5, CON 5	Rideau Lakes	Leeds	46.8
123	PT LOTS 15,16,17, CON 8	Augusta	North Augusta	36.4
124	PT LOTS 14,15,16,17, CON8	Augusta	North Augusta	91.1
125	PT LOTS 18,19,COMM, CON 7	Augusta	North Augusta	34.0
126	S1/2 LOT 12, CON 6	Merrickville-Wolford	Cranberry Lake	35.7
127	PT LOT 12, CON 7	Merrickville-Wolford	Cranberry Lake	51.0
128	PT LOT 12, CON 7	Merrickville-Wolford	Cranberry Lake	30.0
129	PT LOT 1, CON 5	Augusta	Grenville	25.0
130	PT LOT 9, CON 9	Elizabethtown-Kitley	Cranberry Lake	26.5
131	PT LOTS 8, 9, CON 9	Elizabethtown-Kitley	Cranberry Lake	38.9
132	LOT 36, CON 10	Edwardsburgh-Cardinal	Limerick Forest South	37.7
133	N1/2 LOT 7, CON 5	Rideau Lakes	Leeds	42.0
134	PT LOT 4, CON 7	Merrickville-Wolford	Grenville	24.3
135	PT LOT 8, CON 9	North Grenville	Limerick Forest South	40.5
136	E1/2 LOT 1O, CON 9	North Grenville	Limerick Forest South	42.2
137	PT LOT 27, CON 7	Merrickville-Wolford	Cranberry Lake	24.7

138	NE1/4 LOT 18, CON 6	Augusta	North Augusta	19.2
139	W1/2 OF E1/2 LOT 5, CON 8	Augusta	Limerick Forest South	20.2
140	PT LOTS 13,14, CON 8	Augusta	North Augusta	101.1
141	LOT 28,W1/2 LOT 27, CON 7	Merrickville-Wolford	Cranberry Lake	121.9
142	SW1/4 LOT 8, CON 6	Augusta	North Augusta	20.2
143	PT LOTS 13, CON 6,7	Merrickville-Wolford	Cranberry Lake	28.8
144	PT LOT 13, CON 7	Merrickville-Wolford	Cranberry Lake	54.6
145	PT LOT 7, CON 9	North Grenville	Limerick Forest South	50.5
146	LOTS 5,6, CON 11	North Grenville	Limerick Forest South	38.0
147	PT LOTS 17,18, CON 6	Merrickville-Wolford	Cranberry Lake	60.6
148	PT LOTS 16,17, CON 6	Merrickville-Wolford	Cranberry Lake	79.6
149	PT LOTS 25,26, CON 7	Merrickville-Wolford	Cranberry Lake	82.6
150	S1/2 LOT 26, CON 7	Merrickville-Wolford	Cranberry Lake	40.5
151	LOT 6, CON 8	Merrickville-Wolford	Grenville	32.4
152	PT LOT 22, CON 7	Merrickville-Wolford	Cranberry Lake	72.4
153	SE/1/4 LOT 4, CON 5	Rideau Lakes	Leeds	24.3
154	PT LOT 25, CON 8	Augusta	North Augusta	34.3
155	PT LOT 27, CON 7	Augusta	North Augusta	8.1
156	PT LOT 11, CON 6	Merrickville-Wolford	Cranberry Lake	27.5
157	S1/2 LOT 20, CON 7	Merrickville-Wolford	Cranberry Lake	44.5
158	LOTS 21,22, CON 8	Merrickville-Wolford	Cranberry Lake	60.7
159	LOT 23, CON 8	Merrickville-Wolford	Cranberry Lake	34.2
160	SE1/4 LOT 14, CON 6	Merrickville-Wolford	Cranberry Lake	20.2
161	SE1/4 LOT 13, CON 6	Merrickville-Wolford	Cranberry Lake	20.3
162	PT LOT 21, CON 5	Merrickville-Wolford	Cranberry Lake	56.7
163	PT LOT 21, CON 6	Merrickville-Wolford	Cranberry Lake	12.2
164	PT LOTS 16,17,18, CON 8	Merrickville-Wolford	Cranberry Lake	58.7
165	PT LOTS 20,21, CON 7	Augusta	North Augusta	40.4
166	PT LOT 1,COMM, CON 11	Elizabethtown-Kitley	Cranberry Lake	50.2
167	SW1/4 LOT 31, CON 4	Edwardsburgh-Cardinal	Grenville	20.2
168	PT LOTS 17,18,19, CON 8	Merrickville-Wolford	Cranberry Lake	57.0
169	PT LOTS 22,23, CON 3	Elizabethtown-Kitley	Leeds	98.4
170	PT LOTS 3,4, CON 4	Merrickville-Wolford	Limerick Forest North	73.1
171	E1/2 LOT 7, CON 10	North Grenville	Limerick Forest South	41.3
172	PT LOTS 28,29, CON 7	Rideau Lakes	Leeds	63.0
173	S1/2 LOT 17, CON 7	Merrickville-Wolford	Cranberry Lake	42.6
174	PT LOTS 9,10,11,12, CON 7	Athens	Leeds	162.4
175	PT LOTS 24,25, CON 6	Elizabethtown-Kitley	Leeds (Cnty Garage)	5.8

Total Area: 5782.3 ha

Limerick Forest North Tract Total: 1 122.6 ha
Limerick Forest South Tract Total: 1 471.3 ha
Cranberry Lakes Area Total: 1 262.1 ha
North Augusta Area Total: 861.8 ha
Leeds Unconsolidated Blocks Total: 641.0 ha
Grenville Unconsolidated Blocks Total: 423.5 ha

ANNEX D

POPULATION PROJECTIONS FOR UCLG AND AREA

Populations and Population Projections for UCLG and Area

	1996	2001	% change 1996-2001	Projection	
				% per yr	2021
United Counties of Leeds and Grenville					
Township of Athens	3 040	3 053	0 %	+.62	3 549
Township of Augusta	7 626	7 635	0 %	+.35	8 239
Township of Edwardsburgh / Cardinal	6 715	6 674	- 1 %	+.51	7 627
Township of Elizabethtown-Kitley	10 222	10 039	- 2 %	+.41	11 309
Township of Front of Yonge	2 530	2 639	+ 4 %	+.56	2 909
Township of Leeds and the Thousand Islands	9 177	9 069	- 1 %	0	9 484
Village of Merrickville-Wolford	2 630	2 812	+ 7 %	+0.83	3 236
Municipality of North Grenville	12 648	13 581	+ 7 %	+3.93	33 122
Township of Rideau Lakes	9 564	9 687	+ 1 %	+1.48	13 823
Village of Westport	683	647	- 5 %	0	683
UCLG Subtotal	64 835	65 836	+ 2%	+1.7	89 429
City of Brockville	21 725	21 375	-2%	+0.5	24 461
Town of Prescott	4 480	4 228	-6%	-1.32	3 501
Town of Gananoque	5 217	5 167	-1%	-1.32	4 263
UCLG Total	96 284	96 606	0 %	+.89	120 059
City of Ottawa	721 136	774 072	+7%	2	1 193 201

Source: Statistics Canada, 2002
Strategic Projections Inc.
City of Brockville
City of Ottawa

ANNEX E

WETLAND / ANSI SUMMARIES

LIMERICK WETLAND

Natural Heritage Information Centre Report

Area Id: 8317 **Area Type:** WET
Alias(es): GROVETON BOG
Size (ha): 2574.7 **Significance Level:** Provincial

Site District:	Counties:	Topographic Maps:
	LEEDS & GRENVILLE	31B/13

UTM Centroid: 18 452000 4967000
Decimal Latitude/Longitude: 44.8567521020887 -75.6074890435638

Description: A Provincially Significant wetland, composed of three wetland types (7% bog, 92% swamp and 1% marsh) (Sine et al., 1984).

Vegetation: Vegetation Communities (Sine et al., 1984): Two forms S12: tall shrubs- willow; Frogbit; S20: tall shrubs- willow; bur marigold; Three forms S9: tall shrubs- willow; spirea; grasses; S21: deciduous trees- Red Maple; cattails; grasses; S22: dead shrubs; Frogbit; coontail; Four forms S4: tall shrubs- willow; spirea; sedges; ferns; S5: tall shrubs- Swamp Birch; spirea; sedges; ferns; S7: deciduous trees- ash; alder; bugleweed; grasses; S8: dead shrubs; alder; steeplebush; Water Arum; S17: dead trees; sedges; ferns; Frogbit; S19: deciduous trees- Red Maple; bidens; grasses; jewelweed; B2: tall shrubs- Winterberry; Leatherleaf; Cotton-grass; Pitcher Plant; Five forms S2: tall shrubs- willow; bidens; grasses; jewelweed; duckweed; S3: deciduous trees- Red Maple; Nannyberry; ferns; grasses; moss; S11: tall shrubs- Swamp Birch; Leatherleaf; bidens; grasses; moss; M1: robust emergents- cattails; willow; spirea; loosestrife; moss; S15: deciduous trees- Black Ash; cedar; Winterberry; bidens; bugleweed; S18: deciduous trees- Black Ash; alder; ferns; grasses; moss; B1: coniferous trees- Winterberry; Labrador-tea; Star-flower; sedges; Sphagnum sp.; Six or more forms S1: deciduous trees- Black Ash; cedar; willow; sedges; bidens; ferns; S6: tall shrubs- willow; bidens; ferns; grasses; duckweed; moss; S10: coniferous trees- cedar; Black Ash; Nannyberry; Labrador-tea; grasses; ferns; Sphagnum sp.; S13: deciduous trees- Black Ash; cedar; alder; virginia creeper; grass; ferns; moss; bidens; S14: tall shrubs- willow; dead shrubs; bidens; grass; rushes; Frogbit; S16: deciduous trees- Black Ash; Winterberry; spirea; bidens; grass; ferns; mosses; S23: tall shrubs- willow; spirea; horsetail; arrowhead; ferns; moss; B3: coniferous trees- Black Spruce; Winterberry; Leatherleaf; Cotton-grass; Sphagnum sp.; Pitcher Plant;

Landform: Soils (Sine et al., 1984): 100% organic; Site Type (Sine et al., 1984): 100% palustrine (permanent or intermittent outflow);

Id	Citation
4051	Glooschenko, V., B. Parker, L.Coo, R. Kent, C. Wedeles, A. Mason, J. Dawson, D. Herman and P. Smith. 1987. Provincially and Regionally Significant Wetlands in Southern Ontario. OMNR, Wildlife Branch, Toronto. 321 pp.
33667	Sine, P., L. Chalmers and J. McDonnell. 1984. Wetland Data Record and Evaluation- Limerick Forest Wetland (Groveton Bog). Second Edition. June 19, 1984. Ontario Ministry of Natural Resources. Manuscript. 22 pp + 1 map

See also Groveton Bog ANSI

Source: Ontario Ministry of Natural Resources: Natural Heritage Information Centre Website
www.mnr.gov.on.ca/MNR/nhic/nhic.html

WOLFORD BOG PART 1 - WETLAND

Natural Heritage Information Centre Report

Area Id: 8289 **Area Type:** WET
Alias(es):
Size (ha): 1975.0 **Significance Level:** Provincial

Site District:	**Counties:**	**Topographic Maps:**
	LEEDS & GRENVILLE	31B/13

UTM Centroid: 18 435000 4961000
Decimal Latitude/Longitude: 44.8013969397448 -75.821854298051

Description: A Provincially significant wetland, composed of three wetland types (11% bog, 70% swamp and 19% marsh) (McIntyre et al., 1984).

Vegetation: Vegetation Communities (McIntyre et al., 1984): One form M1: narrow-leaved emergents- wild rice, burreed; M4: robust emergents- cattails; Two forms M3: narrow-leaved emergents- rushes; lilies; M6: herbs- loosestrife, jewelweed; grass; S3: rich shrubs- dogwood; loosestrife; S9: deciduous trees- Red Maple; duckweed; S10: deciduous trees- Red Maple; ferns, bugleweed; S15: tall shrubs; floating plants; S17: tall shrubs- saplings, Buttonbush, willow; Sweet Gale; Three forms S1: deciduous trees- Red Maple; sedges, grasses; jewelweed, ferns, False Nettle; S14: tall shrubs- alder; grass; ferns; S16: coniferous trees- cedar; low shrubs; herbs; S18: deciduous trees- Red Maple; dogwood, willow; spirea; Four forms S7: tall shrubs- alder; saplings, dogwood, alder; ferns, wintergreen; Sweet Gale; M2: robust emergents- cattails; rush, grass, sedges; jewelweed, loosestrife; tall shrubs; M5: robust emergents- cattails; Buttonbush; Sweet Gale; sedges; B1: deciduous trees; dogwood; Leatherleaf; Sphagnum sp.; B2: coniferous trees- Tamarack, spruce; Mountain Holly; Sweet Gale, Leatherleaf; Sphagnum sp.; B3: tall shrubs- dogwood; Leatherleaf; S5: tall shrubs; low shrubs; moss; herbs; S8: tall shrubs- alder, willow, Buttonbush; spirea, Sweet Gale; sedges, rushes; loosestrife; S13: deciduous trees- Red Maple; tall shrubs; grasses; herbs; Five forms S12: deciduous trees- Red Maple, ash; dead deciduous trees; saplings, Buttonbush; grass; bidens, bugleweed; Six or more forms S2: deciduous trees- Red Maple, ash; saplings, alder, cedar; ferns; sedges, burreed; beggar's tick; moss; S4: deciduous trees- Red Maple; cedar; alder; ferns; sedges; moss; S6: coniferous trees; tall shrubs; low shrubs; narrow-leaved emergents; mosses; herbs; S11: deciduous trees- Red Maple; willow; grass; bugleweed; beggar's tick; duckweed;

Landform: Soils (McIntyre et al., 1984): 100% organic; Site Type (McIntyre et al., 1984): 34% palustrine (permanent or intermittent outflow), and 66% riverine;

Id	**Citation**
33852	McIntyre, P., D. Healey, L. Chalmers, D. Martin and J. McDonnell. 1984. Wetland Data Record and Evaluation- Wolford Bog Part 1 (Cranberry Lake- Atkins Lake). Second Edition. September 21, and August 16, 1983 and, August 30, 1984. Ontario Ministry of Natural Resources. Manuscript. 22 pp + 1 map + 6 pp supplement.

See also Cranberry Lake Swamp ANSI

Source: Ontario Ministry of Natural Resources: Natural Heritage Information Centre Website
www.mnr.gov.on.ca/MNR/nhic/nhic.html

WOLFORD BOG PART 3 - WETLAND

Natural Heritage Information Centre Report

Area Id: 9919 **Area Type:** WET
Alias(es): HANLAN'S BOG
Size (ha): 1547.0 **Significance Level:** Provincial

Site District:	Counties:	Topographic Maps:
	LEEDS & GRENVILLE	31B/13

UTM Centroid: 18 440000 4971000
Decimal Latitude/Longitude: 44.8918489146572 -75.7598229529878

Description: A Provincially significant wetland, composed of three wetland types (26% bog, 72% swamp and 2% marsh) (McDonnell, 1985).

Vegetation: Vegetation Communities (McDonnell, 1985): Swamp S1: dead deciduous trees; Black Ash; Red-osier Dogwood, willow; Reed Canary Grass, sedges; mint, Purple Loosestrife, touch-me-not; S2: deciduous trees- willow; grasses; S3: tall shrubs- willow, Speckled Alder, Red-osier Dogwood; grasses, sedges, spike-rush; arrowhead, mare's tail; S4a: tall shrubs- Speckled Alder, willow; grasses; bedstraw, skullcap, Royal Fern, meadow rue, Sensitive Fern, baneberry; S4b: tall shrubs- Gray Birch, stunted Red Maple trees, Black Ash, Spiraea sp., alder, willow, cedar, Tamarack, Mountain Holly, Nannyberry; Royal Fern, herbs, mint, Marsh Fern, Sphagnum sp.; grasses; (*amount of Tamarack increases as you set further into bog) S5a: deciduous trees- Black Ash, Red Maple; cedar; willow, Red-osier Dogwood, Mountain Holly; ferns, mints, moss, beggar's-ticks, joe-pye weed, Royal Fern; grasses, sedges; S5b: deciduous trees- Black Ash, Red Maple; cedar, Black Spruce, Tamarack; Mountain Holly, willow, Red-osier Dogwood; Royal Fern, beggar's-ticks, etc.; grasses, sedges; S8: tall shrubs- willow, Mountain Holly; cattail; beggars-ticks; Bog B1: low shrubs- Leatherleaf, Labrador-tea, blueberry; Sphagnum sp., Pitcher-plant; B6: coniferous trees- Black Spruce, Tamarack; Leatherleaf, Labrador-tea; Pitcher-plant, Sphagnum sp.; B7: coniferous trees- Tamarack; Leatherleaf, Labrador-tea; Sphagnum sp., Pitcher-plant; Marsh M1: narrow-leaved emergents- sedges; beggars-ticks; W1: submergents- Chara sp.; W2: floating plants- lily pads; coontail;

Landform: Soils (McDonnell, 1985): 100% organic; Site Type (McDonnell, 1985): 100% palustrine (permanent or intermittent outflow);

Id	Citation
55270	McDonnell, J. 1985. Wetland Data Record and Evaluation- Wolford Bog Part 3 (Hanlan's Bog). Second Edition. January 1985. Ontario Ministry of Natural Resources. Manuscript. 23 pp + 1 map + 4 pp supplement.

See also Merrickville Bog ANSI

Source: Ontario Ministry of Natural Resources: Natural Heritage Information Centre Website
www.mnr.gov.on.ca/MNR/nhic/nhic.html

WOLFORD BOG PART 4 - WETLAND

Natural Heritage Information Centre Report

Area Id: 8291 **Area Type:** WET
Alias(es):
Size (ha): 731.8 **Significance Level:** Provincial

Site District:	Counties:	Topographic Maps:
	LEEDS & GRENVILLE	31B/13

UTM Centroid: 18 439500 4964000
Decimal Latitude/Longitude: 44.8287966902257 -75.7653190491501

Description: A Provincially significant wetland, composed of two wetland types (95% swamp and 5% marsh) (Chalmers, 1984).

Vegetation: Vegetation Communities (Chalmers, 1984): One form M1: robust emergents- cattails; Two forms S2: tall shrubs; narrow-leaved emergents; Three forms M2: narrow-leaved emergents; floating plants; submergents; M3: robust emergents; herbs; narrow-leaved emergents; S8: tall shrubs; robust emergents; narrow-leaved emergents; S10: tall shrubs; herbs; narrow-leaved emergents; S13: deciduous trees; herbs; moss; Four forms S3: tall shrubs; deciduous trees; narrow-leaved emergents; herbs; S4: deciduous trees; tall shrubs; herbs; moss; S7: tall shrubs; moss; narrow-leaved emergents; free-floating plants; S12: deciduous trees; tall shrubs; herbs; free-floating plants; Five forms S1: tall shrubs; low shrubs; herbs; narrow-leaved emergents; robust emergents; S6: deciduous trees; dead deciduous trees; tall shrubs; mosses; narrow-leaved emergents; S9: dead deciduous trees; deciduous trees; tall shrubs; narrow-leaved emergent; herbs; Six or more forms S5: coniferous trees; deciduous trees; herbs; tall shrubs; narrow-leaved emergents; moss; S11: dead deciduous trees; dead shrubs; tall shrubs; robust emergents; narrow-leaved emergents; floating plants;

Landform: Soils (Chalmers, 1984): 50% clays, loams or silts, and 50% organic; Site Type (Chalmers, 1984): 100% palustrine (permanent or intermittent outflow);

Id	Citation
33855	Chalmers, L. 1984. Wetland Data Record and Evaluation- Wolford Bog Part 4. Second Edition. 1982. Ontario Ministry of Natural Resources. Manuscript. 22 pp + 2 maps.

Source: Ontario Ministry of Natural Resources: Natural Heritage Information Centre Website
www.mnr.gov.on.ca/MNR/nhic/nhic.html

WOLFORD BOG PART 5 - WETLAND

Natural Heritage Information Centre Report

Area Id: 9055 **Area Type:** WET
Alias(es):
Size (ha): 242.0 **Significance Level:** Other

Site District:	Counties:	Topographic Maps:
	LEEDS & GRENVILLE	31B/13

UTM Centroid: 18 442400 4965000
Decimal Latitude/Longitude: 44.8380381692699 -75.7287508095602

Description: A Non-Provincially significant wetland, composed of two wetland types (93% swamp and 7% marsh) (Martin, 1984).

Vegetation: Vegetation Communities (Martin, 1984): Two forms M1: dead deciduous trees; narrow-leaved emergents; S1: tall shrubs; narrow-leaved emergents; Three forms S2: deciduous trees; tall shrubs; herbs; M3: dead deciduous trees; narrow-leaved emergents; herbs; S3: deciduous trees; narrow-leaved emergents; herbs; S4: tall shrubs; narrow-leaved emergents; herbs; M4: robust emergents; narrow-leaved emergents; herbs; Four forms M2: robust emergents; broad-leaved emergents; narrow-leaved emergents; herbs; S5: deciduous trees; dead deciduous trees; tall shrubs; herbs; S6: tall shrubs; low shrubs; narrow-leaved emergents; herbs;

Landform: Soils (Martin, 1984): 100% organic; Site Type (Martin, 1984): 100% palustrine (permanent or intermittent outflow);

Id	Citation
36072	Martin, D. 1984. Wetland Data Record and Evaluation- Wolford Bog Part 5. Second Edition. 1982. Ontario Ministry of Natural Resources. Manuscript. 22 pp + 1 map + 1 pp supplement.

Source: Ontario Ministry of Natural Resources: Natural Heritage Information Centre Website
www.mnr.gov.on.ca/MNR/nhic/nhic.html

INDIAN CREEK WETLAND

Natural Heritage Information Centre Report

Area Id: 9067 **Area Type:** WET
Alias(es):
Size (ha): 565.0 **Significance Level:** Other

Site District:	Counties:	Topographic Maps:
	LEEDS & GRENVILLE	31B/13

UTM Centroid: 18 448600 4961500
Decimal Latitude/Longitude: 44.8070058207865 -75.6499601400202

Description: A Non-Provincially significant wetland, composed of two wetland types (92% swamp and 8% marsh) (Sine and Vipond, 1984).

Vegetation: Vegetation Communities (Sine and Vipond, 1984): Three forms M2: robust emergents- cattails; milfoil; grasses, sedges, rushes; Four forms S1: deciduous trees- Red Maple; Balsam Fir; Winterberry; jewelweed; S7: deciduous trees- Black Ash; hardwood saplings; grasses; White Snakeroot; M3: narrow-leaved emergents- sedges; jewelweed; spirea; dead trees; Five forms S3: tall shrubs- willow; spirea; sedges; Purple Loosestrife; cattails; S5: deciduous trees- Black Ash; willow; spirea; sedges; ferns; S6: tall shrubs- Speckled Alder; spirea; grasses; White Birch; Purple Loosestrife; Six or more forms S2: tall shrubs- Black Ash saplings; Tamarack; sedges; White Snakeroot; dead trees; bur marigold; S4: deciduous trees- Red Maple; cedar; saplings; spirea; grasses; bugleweed; moss; M1: narrow-leaved emergents- grasses; boneset; dock; willow; spirea; dead trees; M4: narrow-leaved emergents- sedges; spirea; willow; dead trees; Purple Loosestrife; Frogbit;

Landform: Soils (Sine and Vipond, 1984): 60% clays, loams or silts, and 40% organic; Site Type (Sine and Vipond, 1984): 100% riverine;

Id	Citation
36084	Sine, P., and G. Vipond. 1984. Wetland Data Record and Evaluation- Indian Creek Wetland. Second Edition. August 20 & 21, 1984. Ontario Ministry of Natural Resources. Manuscript. 22 pp + 1 map + 3 pp supplement.

Source: Ontario Ministry of Natural Resources: Natural Heritage Information Centre Website
www.mnr.gov.on.ca/MNR/nhic/nhic.html

CHARLEVILLE CREEK WETLAND COMPLEX

Natural Heritage Information Centre Report

Area Id: 8325 **Area Type:** WET
Size (ha): 1545.0 **Significance Level:** Provincial

Site District:	Counties:	Topographic Maps:
	LEEDS & GRENVILLE	31B/12 31B/13

UTM Centroid: 18 446000 4955000
Decimal Latitude/Longitude: 44.7483028277843 -75.6821459819727

Description: A Provincially significant wetland complex, made up of five individual wetlands, composed of two wetland types (99.5% swamp and 0.5% marsh) (Sine and Vipond, 1984).

Vegetation: Vegetation Communities (Sine and Vipond, 1984): Swamp S1: dead trees; willow, alder, Red-osier Dogwood; spirea; sedges, grasses; S2: deciduous trees- willow, alder; spirea; sedges; boneset; S3: deciduous trees- Red Maple, Black Ash; Red Maple, Black Ash saplings; sedges; jewelweed, water parsnip, water hemlock, water plantain; S4: tall shrubs- willow, alder, Red-osier Dogwood; spirea; sedges; Water Arum, bur marigold, dock; water meal, duckweed; dead trees and shrubs; S5: tall shrubs- Speckled Alder, willow, Nannyberry, Southern Arrow-wood, saplings of Red Maple, Black Ash, Trembling aspen, White Elm, Red-osier Dogwood; Red Maple, Black Ash, White Elm; spirea; sedges; Marsh Fern, Royal Fern; S6: deciduous trees- Red Maple, Black Ash, elm; hardwood saplings, willow, Nannyberry, Southern Arrow-wood; spirea; sedges; Marsh Fern, Royal Fern; S7: deciduous trees- Black Ash, Red Maple, White Birch, Trembling Aspen; hardwoods saplings, Winterberry, Speckled Alder, Red-osier Dogwood; grasses, sedges; ferns, mint, White Snakeroot, strawberry; S8: tall shrubs- Speckled Alder, Winterberry, Southern Arrow-wood, saplings of Red Maple, Black Ash, elm; Trembling Aspen; Sensitive Fern, other ferns; S9: deciduous trees- White Ash, elm; hardwood saplings, Nannyberry, willow, Grey Dogwood; spirea, virginia creeper; grasses, sedges; White Snakeroot, jewelweed, False Nettle, violet; S10: deciduous tree- Black Ash, White Ash, elm; Red Maple, Black Ash saplings, Gray Dogwood; dead trees; sedges, grasses; bur marigold, smartweed; Purple Loosestrife, bugleweed, jewelweed; S11: tall shrubs- willow; spirea; ferns, boneset; S12: tall shrubs- Black Ash, White Ash, Red Maple, elm saplings; sedges; bur marigold; joe-pye weed, goldenrod; S13: tall shrubs- Winterberry, Nannyberry, Gray Dogwood; Highbush Cranberry, Chokeberry, elm, Southern Arrow-wood; Tamarack, cedar; Red Maple, Trembling Aspen; sedges; Royal Fern, bugleweed, wild strawberry, violet, White Snakeroot; S14: deciduous trees- Black Ash, Red Maple; cedar; saplings of hardwoods and conifers; sedges; False Nettle; Marsh M1: narrow-leaved emergents- grasses, sedges; willow, Gray Dogwood; Swamp Milkweed, boneset, False Nettle, bugleweed;

Landform: Soils (Sine and Vipond, 1984): 20% clays, loams or silts, and 80% organic; Site Type (Sine and Vipond, 1984): 100% palustrine (permanent or intermittent outflow);

Id	Citation
33890	Sine, P. and G. Vipond. 1984. Wetland Data Record and Evaluation- Charleville Creek Wetland Complex. Second Edition. September 7, 1984. Ontario Ministry of Natural Resources. Manuscript. 22 pp + 1 map + 5 pp supplement.

Source: Ontario Ministry of Natural Resources: Natural Heritage Information Centre Website
www.mnr.gov.on.ca/MNR/nhic/nhic.html

COOLIGAN MARSH WETLAND COMPLEX

Natural Heritage Information Centre Report

Area Id: 8323 **Area Type:** WET
Size (ha): 852.0 **Significance Level:** Provincial

Site District:	Counties:	Topographic Maps:
	LEEDS & GRENVILLE	31C/9

UTM Centroid: 18 410000 4950000
Decimal Latitude/Longitude: 44.6996780773552 -76.1359574204665

Description: A Provincially significant wetland complex, made up of six individual wetlands, composed of two wetland types (78% swamp and 22% marsh) (Sine and Thompson-Pender, 1984).

Vegetation: Vegetation Communities (Sine and Thompson-Pender, 1984): One form M11: narrow-leaved emergents- grasses; Two forms M9: narrow-leaved emergents- grasses; loosestrife; M7: narrow-leaved emergents- grasses; willow; S22: coniferous trees- cedar; herbs; S21: tall shrubs- willow; grasses, sedges; M15: robust emergents- cattails; loosestrife; M13: herbs- loosestrife; sedges; Three forms M10: herbs- loosestrife; grasses; willow; S23: deciduous trees- ash; sedges; False Nettle; S14: narrow-leaved emergents- grasses; loosestrife; duckweed; S26: dead hardwoods; cattails; loosestrife; S16: tall shrubs- willow; grasses; spirea; Four forms S20: tall shrubs- dogwood; spirea; sedges; loosestrife; S7: dead hardwoods; dead shrubs; ferns; duckweed; S9: deciduous trees- Red Maple; dogwood; loosestrife; grasses; S15: deciduous trees- Red Maple; maple saplings; duckweed; jewelweed; M5: narrow-leaved emergents- grasses; duckweed; spirea; willow; M8: narrow-leaved emergents- grasses; dead hardwoods; cattails; loosestrife; S31: deciduous trees- Red Maple; cedar; maple saplings; jewelweed; Five forms S19: deciduous trees- ash; alder; spirea; sedges; cedar; S24: deciduous trees- maple; cedar; dogwood; jewelweed; duckweed; S25: tall shrubs- willow; sedges; cattails; loosestrife; plantain; M1: robust emergents- cattails; dead hardwoods; duckweed; loosestrife; coontail; S1: deciduous trees- maple; Hemlock; ferns; spirea; moss; S3: dead hardwoods; spirea; ferns; Water Arum; moss; M2: robust emergents- cattails; grasses; willow; ferns; arum; S4: deciduous trees- maple; willow; grass; loosestrife; pondweed; S6a: deciduous trees- ash; Hemlock; elderberry; false nettle; grasses; S6b: coniferous trees- Hemlock; ash; elderberry; false nettle; grasses; M3: dead hardwoods; spirea; ferns; arum; moss; S13: deciduous trees- ash; ash saplings; ferns; moss; grasses; M4: narrow-leaved emergents- grasses; dead hardwoods; loosestrife; willow; grass; S14: tall shrubs- willow; grass; spirea; duckweed; smartweed; M6: narrow-leaved emergents- grass; willow; loosestrife; spirea; dead trees; S18: tall shrubs- willow; grass; ferns; dead hardwoods; moss; S28: coniferous trees- cedar; maple; maple saplings; ferns; moss; M16: free-floating plants- duckweed; dead hardwoods; grass; cattails; bladderwort; submergents; Six forms S29: herbs- loosestrife; dogwood; cedar; ash; grass; plantain; S2: tall shrubs- willow; dead shrubs; dead hardwoods; grasses; loosestrife; arum; S8: tall shrubs- willow; dead shrubs; loosestrife; duckweed; Chara sp.; sedges; S10: deciduous trees- maple; dogwood; loosestrife; dead hardwoods; moss; milfoil; S11: deciduous trees- ash; poplar; Balsam Fir; spirea; fern; horsetail; S12: deciduous trees- ash; cedar; dead hardwoods; ash saplings; virginia creeper; ferns; S17: dead hardwoods; grasses; ferns; moss; maple; dogwood; S30: herbs- loosestrife; elm saplings; dead trees; dead conifers; arum; grasses; S33: deciduous trees- ash; ferns; elm saplings; grass; pondweed; dead trees; Seven forms S5: dead hardwoods; maple; willow; grass; loosestrife; cattails; moss; M12: narrow-leaved emergents- grass; dogwood; Sweet Gale; arrowhead; duckweed; bladderwort; iris; M27: deciduous trees- Red Maple; cedar; dogwood; virginia creeper; ferns; grass; moss;

Landform: Soils (Sine and Thompson-Pender, 1984): 20% clays, loams or silts, and 80% organic; Site Type (Sine and Thompson-Pender, 1984): 42% palustrine (permanent or intermittent outflow), and 58% riverine;

Id	Citation
33888	Sine, P., and J. Thompson-Pender. 1984. Wetland Data Record and Evaluation- Cooligan Marshes Wetland Complex. Second Edition. May, 1984. Ontario Ministry of Natural Resources. Manuscript. 22 pp + 1 map + 20 pp supplement.

Source: Ontario Ministry of Natural Resources: Natural Heritage Information Centre Website
www.mnr.gov.on.ca/MNR/nhic/nhic.html

HUTTON CREEK WETLAND

Natural Heritage Information Centre Report

Area Id: 9112 **Area Type:** WET
Alias(es):
Size (ha): 772.0 **Significance Level:** Other

Site District:	Counties:	Topographic Maps:
	LEEDS & GRENVILLE	31C/16

UTM Centroid: 18 417000 4960000
Decimal Latitude/Longitude: 44.7905316428016 -76.049247597266

Description: A Non-Provincially significant wetland complex, made up of five individual wetlands, composed of two wetland types (86% swamp and 14% marsh) (McIntyre et al., 1984).

Vegetation: Vegetation Communities (McIntyre et al., 1984): Two forms S8: low shrubs- Sweet Gale; grass; S9: dead deciduous trees; Chara sp.; S11: tall shrubs- willow; Purple Loosestrife; M4: narrow-leaved emergents- sedges, grass; duckweed, Wolfia sp.; Three forms M1: robust emergents- bulrush, cattails, sweetflag; grass, burreed, wild rice; white lily, pondweed; S4: tall shrubs- willow; Sweet Gale; grass; M3: robust emergents- cattails; Purple Loosestrife; grass, sedges; S6: tall shrubs- willow; sedges, grasses; duckweed; Four forms M2: robust emergents- sweetflag, bulrush, cattail; grass, burreed, wild rice; white lily, pondweed; dead deciduous trees; S10: dead deciduous trees; Purple Loosestrife; cattail; grass; S5: tall shrubs- alder, Red-osier Dogwood; grass, sedge; ferns, nightshade; dead deciduous trees; S7: tall shrubs- willow, alder; grass, sedge; ferns; moss; Five forms S1: ash, Red Maple; Red-osier Dogwood, saplings, willow; Purple Loosestrife, ferns; grass, sedge; moss; S2: dead deciduous trees; ash, Red Maple; saplings; loosestrife; grass; S3: deciduous trees- ash, maple; saplings; ferns; grass; duckweed;

Landform: Soils (McIntyre et al., 1984): 10% clays, loams or silts, and 90% organic; Site Type (McIntyre et al., 1984): 100% palustrine (permanent or intermittent outflow);

Id	Citation
36153	McIntyre, P., D. Healey and G. Vipond. 1984. Wetland Data Record and Evaluation- Hutton Creek Wetland. Second Edition. July 26 & 30, 1984. Ontario Ministry of Natural Resources. Manuscript. 22 pp + 3 pp supplement

Source: Ontario Ministry of Natural Resources: Natural Heritage Information Centre Website
www.mnr.gov.on.ca/MNR/nhic/nhic.html

KEMPTVILLE CREEK PART 1&2 COMPLEX

Natural Heritage Information Centre Report

Area Id: 9937 **Area Type:** WET
Alias(es):
Size (ha): 328.2 **Significance Level:** Provincial

Site District:	Counties:	Topographic Maps:
	LEEDS & GRENVILLE	31B/13

UTM Centroid: 18 446300 4966400
Decimal Latitude/Longitude: 44.8509446293543 -75.6795600439496

Description: A Provincially significant wetland, composed of two wetland types (42% swamp and 58% marsh) (Boxall et al., 1990).

Vegetation: Vegetation Communities (Boxall et al., 1990): From Kemptville Creek #1 (Mabee and McIntyre, 1984): One form M1: submergents- milfoil, pondweed; M2: robust emergents- cattails; Two forms M3: robust emergents; lily; M4: floating plants- lily; pondweed, milfoil; M5: robust emergents- cattails; grass; S1: ?- Red Maple; loosestrife, ferns; S2: tall shrubs; grass; Three forms M6: robust emergents- cattails; lily; milfoil; M7: robust emergents- cattails; grass; herbs; S3: deciduous trees; herbs; robust emergents; S4: tall shrubs; cattail; floating plants; S5: tall shrubs- grass; cattail; S6: tall shrubs; cattails; submergents; Four forms S7: deciduous trees; tall shrubs; lily; herbs; Five forms S8: deciduous trees; tall shrubs; robust emergents; herbs; narrow-leaved emergents; S9: tall shrubs; robust emergents; narrow-leaved emergents; broad-leaved emergents; floating plants; M8: robust emergents; narrow-leaved emergents; broad-leaved emergents; floating plants; herbs; Six or more forms S10: deciduous trees; tall shrubs; herbs; robust emergents; narrow-leaved emergents; broad-leaved emergents; floating plants; From Kemptville Creek Wetland 2 (McIntyre and Henley, 1994): Two forms M2: narrow-leaved emergents- grass, burreed; Purple Loosestrife, jewelweed, nightshade, ferns; Three forms M1: narrow-leaved emergents- burreed, wild rice; floating pondweed, lily; pondweed, milfoil; S1: tall shrubs- willow; grass, burreed; loosestrife; Four forms S2: deciduous trees- Red Maple; saplings, willow; grass; loosestrife; Five forms M3: narrow-leaved emergents- rice, grass; bulrush; loosestrife; lily; pondweed, milfoil;

Landform: Soils (Boxall et al., 1990): 100% clays, loams or silts; Site Type (Boxall et al., 1990): 100% riverine;

Id	Citation
55290	Boxall, J. (1990), P. McIntyre, and P. Mabee (1982). 1990. Wetland Data Record and Evaluation- Kemptville Creek Part 1 & 2 complexed. Second Edition. Aug 30, 1982, Aug 24, 1984, June 1990. Ontario Ministry of Natural Resources. Manuscript. 17 pp.
55381	Mabee, P. and P. McIntyre. 1982. Wetland Data Record and Evaluatin - Kemptville Creek #1. Second Edition. Aug 30, 1982. Ontario Ministry of Natural Resources. Manuscript. 22 pp + 1 map.
55382	McIntyre, P. and D. Henley. 1984. Wetland Data Record and Evaluation- Kempville Creek Wetland 2. Second Edition. Aug 24, 1984. Ontario Ministry of Natural Resources. Manuscript. 22 pp + 1 map + 1 pp supplement

Source: Ontario Ministry of Natural Resources: Natural Heritage Information Centre Website
www.mnr.gov.on.ca/MNR/nhic/nhic.html

GROVETON BOG ANSI

Natural Heritage Information Centre Report

Area Id: 1278 **Area Type:** ANSI-LS
Alias(es): Limerick Forest Wetland
Size (ha): 1200.0 **Significance Level:** Provincial

Site District:	Counties:	Topographic Maps:
6E-12	LEEDS & GRENVILLE	31B/13

UTM Centroid: 18 452000 4968000
Decimal Latitude/Longitude: 44.8657538164034 -75.6075837116129
Minimum Elevation: 100.0 **Maximum Elevation:** 107.0

Description:

Vegetation: The area constitutes the least disturbed core portion of a huge (1990 ha) domed peatland on a larger Sand Plain outwash deposit. The majority of forest cover consists of submature to mature mixed swamp (treed swamp forest) of White Cedar, Black Ash and White Birch, with Red Maple and Balsam Fir being locally significant. Deciduous Thicket Swamp constitutes a substantial portion of the area (especially north of the power transmission corridor), with small area of deciduous swamp forest (Silver Maple - Black Ash) and low shrub fen in the southern and northcentral areas. A large virtually pure Black Ash swamp occurs along the western side of the wetland south of the power transmission corridor. The sand ridges appear to be marine deposits (like the "islands" in the Mer Bleue Bog ?) upon which mature upland forest is present. It appears to be dominated by mature Red Maple and Eastern Hemlock with an abundance of large White Ash and White Pine. Younger upland forest dominated by White Birch is common along the eastern margin of the wetland. [Brunton 1992]

Landform: The area constitutes the least disturbed core portion of a huge (1990 ha) domed peatland on a larger Sand Plain outwash deposit. Large, essentially linear, sand-based ridges occur within it. The peatland is primarily bog with peat averaging >1 m in depth over most of the area to a maximum of over 4 m in the centre. [Brunton 1992] Landform Type(s): Organic Deposit and Sand Plain. [Brunton 1992]

Representation: The vast size of the essentially intact core wetland complex, complete with potentially very significant upland forests on the higher ‘islands’ and the presence of a number of significant plant species, offers a high level of significance to the site. It appears to contain peatland values, particularly the mixed swamp habitat, unsurpassed by other known sites in Site District 6E-12. [Brunton 1992]

Citation

3761
Bird and Hale Ltd. 1984. Peat and Peatland Evaluation of the Ottawa-Brockville Area. Volumes 1-5, Ontario Geological Survey, OFER 5491. 217 pp.

55164

Brunton, D.F. 1992. Life Science Areas of Natural and Scientific Interest in Site District 6-12. Unpublished Manuscript. 225 pp.

Source: Ontario Ministry of Natural Resources: Natural Heritage Information Centre Website
www.mnr.gov.on.ca/MNR/nhic/nhic.html

MERRICKVILLE BOG ANSI
Natural Heritage Information Centre Report

Area Id: 1423 **Area Type:** ANSI-LS
Alias(es): HANLAN'S MARSH
Size (ha): 2000.0 **Significance Level:** Provincial

Site District:	Counties:	Topographic Maps:
6E-11	LEEDS & GRENVILLE	31B/13

UTM Centroid: 18 440000 4972000
Decimal Latitude/Longitude: 44.9008502866853 -75.7599415036583
Minimum Elevation: 110.0
Maximum Elevation: 116.0

Description: This site is a large and diverse wetland with extensive open and treed domed bog communities. These are the most extensive bog areas seen in the site district and are the most important feature of the site. In addition to the bog communities there is a range of most other wetland types present in the candidate including considerable mixed and coniferous swamp. The open bog habitat varies from a rather dry phase dominated by such low shrubs and Ledum groenlandicum (Labrador Tea) and Chamaedaphne calyculata (Leatherleaf) to a wetter phase that approaches graminoid bog classification dominated by Eriophorum virginicum (Virginia Cotton-grass) and Eriophorum spissum (Dense Cotton-grass). One area of open bog habitat in the northern part of the deposit is being disturbed by ATV traffic due to the easy access into the site from the east side. Evidently, this traffic is largely due to limited peat harvesting that is done for the Ministry's Kemptville tree nursery (Don Cuddy, pers. com., 1992). Clearly, such harvest should not occur in this ANSI. A smaller area of domed bog occurs in the south portion of the site and is associated with Lissons Lake and hence is lacustrine bog. [White 1992]

Vegetation:

Landform: The present candidate occurs on organic (peat and muck) land form. (Chapman and Putnam 1984). [White 1992]

Representation: Cranberry Lake Swamp offers the other lacustrine bog communities but its palustrine bog is quite limited in quality and extent. The present site is most similar to the regionally significant Blueberry Swamp, however, the latter site is less extensive and diverse. [White 1992]

Citation

37997
Luciuk, L.Y. 1976. Life Science Inventory Checklist: Merrickville Bog. Ontario Ministry of Natural Resources, Division of Parks, Park Planning Branch. 1 p.

4597

White, D.J. 1992. Life Science Areas of Natural and Scientific Interest in Site District 6-11: A Review and Assessment of Significant Natural Areas. Ontario Ministry of Natural Resources, Eastern Region, Kemptville.

CRANBERRY LAKE SWAMP ANSI
Natural Heritage Information Centre Report

Area Id: 1153 **Area Type:** ANSI-LS
Alias(es):
Size (ha): 2000.0 **Significance Level:** Provincial

Site District:	Counties:	Topographic Maps:
6E-11	LEEDS & GRENVILLE	31B/13

UTM Centroid: 18 435000 4961000
Decimal Latitude/Longitude: 44.8013969397448 -75.821854298051
Minimum Elevation: 111.0 **Maximum Elevation:** 120.0

Description:

Vegetation: The most important aspect of this site is the extensive deciduous swamp associated with a shallow lake. A range of moisture conditions, from the very wettest areas adjacent to the lake itself to the better drained sections bordering the outlet stream of the lake, provide for a range of microhabitats. A large colony of the provincially rare shrub Viburnum recognitum (Southern Arrowwood) occurs in the deciduous swamp and may be the largest and most vigorous such colony in eastern Ontario (Albert Dugal, pers. com., 1991; and this study). The deciduous swamp gives way near the lake to a thicket swamp of low shrubs, such as Decodon verticillatus (Water-willow), Myrica gale (Sweet Gale), and Ilex verticillata (Winterberry). The candidate also includes other wetland communities such as mixed swamp, and open and treed bog. Palustrine bog communities in the northern portion of the site are quite dry, however, there are lacustrine bog areas adjacent to the lake and they appear from aerial reconnaissance to be very wet. [White 1992]

Landform:

Representation: This lacustrine and palustrine wetland occurs on organic (peat and muck) landform (Chapman and Putnam 1984) and is most similar to portions of the Innisville Wetlands, however, the latter wetland is primarily a riverine type. The Merrickville Bog is the only other site to offer provincially significant representation of lacustrine and palustrine bog communities. The present candidate is the only provincially significant representation of lacustrine deciduous swamp. [White 1992]

Citation

4597
White, D.J. 1992. Life Science Areas of Natural and Scientific Interest in Site District 6-11: A Review and Assessment of Significant Natural Areas. Ontario Ministry of Natural Resources, Eastern Region, Kemptville.

Source: Ontario Ministry of Natural Resources: Natural Heritage Information Centre Website
www.mnr.gov.on.ca/MNR/nhic/nhic.html

ANNEX F

LIMERICK FOREST TREE SPECIES CHARCTERISTICS

Limerick Forest Tree Species Characteristics

- **Jack Pine *(Pinus banksiana)***

Jack Pine is the most widely planted species in Limerick Forest and accounts for approximately 15% of the forested area. The majority of these plantations are less than 40 years old and of poor quality and patchy stocked.

Jack Pine is the most widely distributed tree in Canada and normally associated with the Boreal forest throughout central to northern Canada. In Limerick Forest however the species is just south of its natural range. In its natural range it is a pioneer species that regenerates where mineral soil has been exposed through disturbances such as fire or logging. This relatively small tree requires full sunlight to grow and is most often found on dry and infertile rocky or sandy soils.

In Limerick Forest Jack pine was planted as a nurse crop on the shallow drought prone site of the Smith Falls Limestone Plain. Most of these plantations were established to protect and rehabilitate the sites and create conditions in which natural regeneration of native species could occur. Where there is a nearby seed source, natural regeneration of cedar and hardwoods is occurring under these plantations. However many of the sites are still void of desirable natural regeneration and instead invasive species such as buckhorn and prickly ash are establishing.

- **Red Pine *(Pinus resinosa)***

Red pine is the premier species of Limerick Forest and its plantations account for 14% of the total forested area. The majority of these plantations are over 40 years old and have been managed by selectively thinning to create high quality trees.

Red pine is a fast growing tree that requires full sunlight to grow. In its natural state, red pine most often would establish on bare mineral soil after a disturbance such as fire. It prefers dry sandy sites and is a drought resistant species that can tolerate nutrient poor soils. For these qualities red pine has been the most productive species planted in Limerick Forest. Red pine is a medium sized tree that can reach heights up to 25m and live for 200 years.

In Limerick Forest red pine was predominately planted in pure stands on the more productive sites on the Edwardsburgh sand plain. Today most of these plantations have received at least one thinning and in many areas shade tolerant hardwoods are

regenerating in the understorey. These tall slender trees with no lower branches have made the stands popular for recreation.

- **White Pine *(Pinus strobus)***

White pine was mostly planted with other species such as spruce and red pine. Plantations in which white pine is the only or dominant species account for only 5% of the total forested area.

White pine grows naturally throughout the area and as it is intermediately shade tolerant it often occurs in mixed hardwood stands. It is the largest tree in Eastern Canada and can reach heights over 30 m and commonly will live well over 200 years. It is tolerant of a wide variety of soil types form dry sandy or rocky to sphagnum bogs.

In Limerick Forest many of the older white pine plantations were repeatedly damaged by white pine weevil and white pine blister rust. This has left some large but very poorly formed plantations that are of little commercial value. There are however some nice white pines growing in mixed plantations.

- **White Spruce *(Picea glauca)***

White Spruce was typically planted or naturally occurring on the wetter sites in Limerick Forest and account for 13% of the total forested area.

White spruce grows in a wide variety of soils and climates and is found in just about all of Canada's forested regions. It is a shade tolerant species and most often grows in mixed stands. It can reach heights of up to 25 m and live for over 200 years.

In Limerick Forest most of the spruce plantations have received very little if any thinning and no pruning. These fairly dense stands have very little regeneration or vegetation in the understorey. Recreation in these stands is often limited by obstruction from the lower branches that characteristically persist on spruce.

ANNEX G

LIMERICK FOREST WILDLIFE LISTS

Wildlife Lists for Limerick Forest

Mammals that Possibly or Periodically Inhabit Limerick Forest

Ungulates:	Whitetail Deer	*Odocoileus virginianus*
	Moose	*Alces alces*
Carnivores:		
	Coyote	*Canis latrans*
	Red Fox	*Vulpes vulpes*
	Bobcat	*Lynx rufus*
	Lynx	*Lynx canadenis*
	Black Bear	*Ursus americanus*
	Racoon	*Procyon lotor*
	Fisher	*Martes Pennanti*
	Short-tailed Weasel	*Mustela erminea*
	Long-tailed Weasel	*Mustela frenata*
	Mink	*Mustela vison*
	Northern River Otter	*Lontra canadenis*
	Striped Skunk	*Mephitis mephitis*
Rodents:		
	Beaver	*Castor canadenis*
	Porcupine	*Erethizon dorsatum*
	Woodchuck	*Marmota monax*
	Eastern Chipmunk	*Tamias striatus*
	Grey Squirrel	*Sciurus carolinensis*
	Red Squirrel	*Tamiasciurus hudsonicus*
	Southern Flying Squirrel	*Glaucomys volans*
	Northern Flying Squirrel	*Glaucomys sabrinus*
	Meadow Jumping Mouse	*Zapus hudsonius*
	Woodland Jumping Mouse	*Napaeozapus insignis*
	White-footed Mouse	*Peromyscus leucopus*
	Deer Mouse	*Peromyscus maniculatus*
	Southern Red-backed Vole	*Clethrionomys gapperi*
	Meadow Vole	*Microtus pennsylvanicus*
	Muskrat	*Ondatra zibethicus*
Rabbits and Hares:		
	Eastern Cottontail	*Sylvilagus floridanus*
	Snowshoe Hare	*Lepus americanus*
Bats:		
	Little Brown Bat	*Myotis lucifugus*
	Big Brown Bat	*Eptesicus fuscus*
	Eastern Small Footed Bat	*Myotis leibii*
	Northern Long Eared Bat	*Myotis septentrionalis*

Insectivores:

Common Shrew	*Sorex cinereus*
Smokey Shrew	*Sorex fumeus*
Pygmy Shrew	*Sorex hoyi*
Water Shrew	*Sorex palusris*
Northern Short Tailed Shrew	*Blarina brevicauda*
Hairy Tailed Mole	*Parascalops breweri*
Star Nosed Shrew	*Condylura cristata*

Amphibians and Reptiles Which Possibly Inhabit Limerick Forest

Turtles:

Common Snapping Turtle	*Chelydra serpentina*
Painted Turtle	*Chrysemys picta*
Blandings Turtle	*Emydoidea blandingii*
Spotted Turtle	*Clemmys guttata*

Snakes:

Common Gartner Snake	*Thamnophis sirtalis*
Northern Water Snake	*Nerodia sipedon*
Red Bellied Snake	*Storeria occipitomaculata*
Smooth Green Snake	*Opheodrys vernalis*
Milksnake	*Lampropeltis triangulum*
DeKays Brown Snake	*Storeria dekayi*
Ringnecked Snake	*Diadophis punctatus*

Salamanders:

Eastern Newt	*Notophthalmus viridescens*
Blue-spotted Salamander	*Ambystoma laterale*
Spotted Salamander	*Ambystoma maculatum*
Four Toed Salamander	*Hemidactylium scutatum*
Eastern Red Backed Salamander	*Plethodon cinereus*

Frogs and Toads:

American Toad	*Bufo americanus*
Grey Tree Frog	*Hyla versicolor*
Spring Peeper	*Pseudacris crucifer*
Western Chorus Frog	*Pseudacris triseriata*
Wood Frog	*Rana sylvatica*
Northern Leopard Frog	*Rana pipiens*
Pickerel Frog	*Rana palustris*
Green Frog	*Rana clamitans*
Mink Frog	*Rana septentrionalis*
American Bull Frog	*Rana catesbeiana*

Breeding Birds of the Limerick Forest Area

Diving Birds:

Common Loon	*Gavia immer*
Pied-Billed Grebe	*Podilymbus podiceps*
Double-Crested Cormorant	*Phalacrocorax aurtius*

Herons:

American Bittern	*Botaurus lentiginosus*
Least Bittern	*Ixobrychus exilis*
Great Blue Heron	*Ardea herodias*
Black-Crowned Night-Heron	*Nycticorax nycticorax*
Green Heron	*Butorides virescens*

Vultures:

Turkey Vulture	*Cathartes aura*

Waterfowl:

Canada Goose	*Branta canadensis*
Wood Duck	*Aix sponsa*
Gadwall	*Anas strepera*
American Wigeon	*Anas americana*
American Black Duck	*Anas rubripes*
Mallard	*Anas platyrhynchos*
Blue-Winged Teal	*Anas discors*
Northern Shoveler	*Anas clypeata*
Northern Pintail	*Anas acuta*
Green-Winged Teal	*Anas crecca*
Redhead	*Aythya americana*
Ring-Necked Duck	*Aythya collaris*
Lessor Scaup	*Aythya affinis*
Hooded Merganser	*Lophodytes cucullatus*
Common Merganser	*Mergus merganser*

Hawks:

Osprey	*Pandion haliaetus*
Northern Harrier	*Circus cyaneus*
Sharp-Shinned Hawk	*Accipiter striatus*
Coopers Hawk	*Accipiter cooperii*
Northern Goshawk	*Accipiter gentilis*
Red-Shouldered Hawk	*Buteo lineatus*
Broad-Winged Hawk	*Buteo platypterus*
Red-Tailed Hawk	*Buteo jamaicensis*
American Kestrel	*Falco sparverius*
Merlin	*Falco Columbarius*

Owls:

Eastern Screech-Owl	*Otus asio*
Great Horned Owl	*Bubo virginianus*
Barred Owl	*Strix varia*
Long-Eared Owl	*Asio otus*
Short-Eared Owl	*Asio flammeus*
Northern Saw-Whet Owl	*Aegolius acadicus*

Grouse and Turkey:		
	Ruffed Grouse	*Bonasa umbellus*
	Wild Turkey	*Meleagris gallopavo*
Rails and Coots:		
	Virginia Rail	*Rallus limicola*
	Sora	*Porzana carolina*
	Common Moorhen	*Gallinula chloropus*
	American Coot	*Fulica americana*
Plovers:		
	Killdeer	*Charandrius vociferus*
Sandpipers and allies:		
	Spotted Sandpiper	*Actitis macularia*
	Upland Sandpiper	*Bartramia longicauda*
	Common Snipe	*Gallinago gallinago*
	American Woodcock	*Scolopax minor*
	Wilsons Phalarope	*Phalaropus tricolor*
Gulls and allies:		
	Ring-Billed Gull	*Larus delawarensis*
	Herring Gull	*Larus argentatus*
	Black Tern	*Childonias niger*
Doves and Cuckoos:		
	Mourning Dove	*Zenaida macroura*
	Black-Billed Cuckoo	*Coccyzus erythropthalmus*
	Yellow-Billed Cuckoo	*Coccyzus americanus*
Nightjars:		
	Common Nighthawk	*Chordeiles minor*
	Whip-Poor-Will	*Caprimulgus vociferus*
Swift:		
	Chimney Swift	*Chaetura pelagica*
Hummingbird:		
	Ruby-Throated Hummingbird	*Archilochus colubris*
Kingfisher:		
	Belted Kingfisher	*Ceryle alcyon*
Woodpeckers:		
	Red-Headed Woodpecker	*Melanerpes erythrocephalus*
	Yellow-Bellied Sapsucker	*Sphyrapicus varius*
	Downy Woodpecker	*Picoides pubescens*
	Hairy Woodpecker	*Picoides villosus*
	Northern Flicker	*Colaptes auratus*
	Pileated Woodpecker	*Dryocopus pileatus*
Flycatchers:		
	Olive-Sided Flycatcher	*Contopus cooperi*
	Eastern Wood-Pewee	*Contopus virens*
	Yellow-Bellied Flycatcher	*Empidonax flaviventris*
	Alder Flycatcher	*Empidonax alnorum*
	Willow Flycatcher	*Empidonax traillii*
	Least Flycatcher	*Empidonax minimus*
	Eastern Phoebe	*Sayornis phoebe*

Great Crested Flycatcher	*Myiarchus crinitus*
Eastern Kingbird	*Tyrannus tyrannus*

Vireos:

Yellow-Throated Vireo	*Vireo flavifrons*
Blue-Headed Vireo	*Vireo solitarius*
Warbling Vireo	*Vireo gilvus*
Red-Eyed Vireo	*Vireo olivaceus*

Jays and Crows:

Blue Jay	*Cyanocitta cristata*
American Crow	*Corvus brachyrhynchos*
Common Raven	*Corvus corax*

Swallows:

Purple Martin	*Progne subis*
Tree swallow	*Tachycineta bicolor*
Northern Rough-Winged Swallow	*Stelgidopteryx serripennis*
Bank Swallow	*Riparia riparia*
Cliff Swallow	*Petrochelidon pyrrhonota*
Barn Swallow	*Hirundo rustica*

Chickadees, Nuthatches and Wrens:

Black-Capped Chickadee	*Poecile atricapillus*
Red-Breasted Nuthatch	*Sitta canadensis*
White-Breasted Nuthatch	*Sitta carolinensis*
Brown Creeper	*Certhia americana*
House Wren	*Troglodytes aedon*
Winter Wren	*Troglodytes troglodytes*
Marsh Wren	*Cistothorus palustris*

Kinglets, Gnatcatchers, Bluebirds, Thrushes and mimics:

Golden-Crowned Kinglet	*Regulus satrapa*
Ruby-Crowned Kinglet	*Regulus calendula*
Blue-Gray Gnatcatcher	*Polioptila caerulea*
Eastern Bluebird	*Sialia sialis*
Veery	*Catharus fuscescens*
Hermit Thrush	*Catharus guttatus*
Wood Thrush	*Hylocichla mustelina*
American Robin	*Turdus migratorius*
Gray Catbird	*Dumetella carolinensis*
Brown Thrasher	*Toxostama rufum*

Waxwings and Starlings:

Cedar waxwing	*Bombycilla cedrorum*
European Starling	*Sturnus vulgaris*

Wood-Warblers:

Blue-Winged Warbler	*Vermivora pinus*
Golden-Winged Warbler	*Vermivora chrysoptera*
Nashville Warbler	*Vermivora ruficapilla*
Yellow Warbler	*Dendroica petechia*
Chestnut-Sided Warbler	*Dendroica pensylvanica*
Magnolia Warbler	*Dendroica magnolia*
Black-Throated Blue Warbler	*Dendroica caerulescens*
Yellow-Rumped Warbler	*Dendroica coronata*
Black-Throated Green Warbler	*Dendroica virens*
Blackburnian Warbler	*Dendroica fusca*
Pine Warbler	*Dendroica pinus*
Prairie Warbler	*Dendroica discolor*

Cerulean Warbler	*Dendroica cerulea*
Black-and-White Warbler	*Mniotilta varia*
American Redstart	*Setophaga ruticilla*
Ovenbird	*Seiurus aurocapillus*
Northern Waterthrush	*Seiurus novenboracensis*
Mourning Warbler	*Oporornis philadelphia*
Common Yellowthroat	*Geothlypis trichas*
Canada Warbler	*Wilsonia canadensis*

Tangers:

Scarlet Tanger	*Piranga olivacea*

Sparrows, Bunting and Grosbeaks:

Eastern Towhee	*Pipilo erythrophthalmus*
Chipping Sparrow	*Spizella passerina*
Clay-Coloured Sparrow	*Spizella pallida*
Field Sparrow	*Spizella pusilla*
Vesper Sparrow	*Pooecetes gramineus*
Savannah Sparrow	*Passerculus sandwichensis*
Grasshopper Sparrow	*Ammondramus savannarum*
Song Sparrow	*Melospiza melodia*
Swamp Sparrow	*Melospiza georgiana*
White-Throated Sparrow	*Zonotrichia albicollis*
Dark-Eyed Junco	*Junco hyemalis*
Northern Cardinal	*Cardinalis cardinalis*
Rose-Breasted Grosbeak	*Pheucticus Iudovicianus*
Indigo Bunting	*Passerina cyanea*

Blackbirds and allies:

Bobolink	*Dolichonyx oryzivorus*
Red-Winged Blackbird	*Agelaius phoeniceus*
Eastern Meadowlark	*Sturnella magma*
Common Grackle	*Quiscalus quiscalus*
Brown-Headed Cowbird	*Molothrus ater*
Baltimore Oriole	*Icterus galbula*

Finches:

Purple Finch	*Carpodacus purpureus*
Red Crossbill	*Loxia curvirostra*
White-Winged Crossbill	*Loxia leucoptera*
Pine Siskin	*Carduelis pinus*
American Goldfinch	*Carduelis tristis*
Evening Grosbeak	*Coccothraustes vespertinus*
House Sparrow	*Passer domesticus*

Species at Risk which may occur in the Limerick Forest

HABITAT	SPECIES	CATEGORY	DESIGNATER
Wetland			
marsh	Least Bittern	Threatened Vulnerable	COSEWIC COSSARO
marsh	Black Tern	Vulnerable	COSSARO
bog	Spotted Turtle	Special Concern Vulnerable	COSEWIC COSSARO
marsh, swamp, pond	Blandings Turtle	Local concern	
temporary	Western Chorus Frog	Local concern	
Tamarack swamp	E. Prairie White-fringed Orchid	Endangered	COSEWIC
Deciduous Forest			
mature hardwood	Southern Flying Squirrel	Special Concern	COSEWIC
large, mature	Red-shouldered Hawk	Special Concern Vulnerable	COSEWIC COSSARO
large, mature, on Shield	Cerulean Warbler	Special Concern Vulnerable	COSEWIC COSSARO
open	Red-headed Woodpecker	Special Concern Vulnerable	COSEWIC COSSARO
rich, mature, hardwood	American Ginseng	Endangered	COSEWIC
Other			
open, Milkweed	Monarch Butterfly	Special Concern	COSEWIC

Endangered - Any native species that, on the basis of the best available scientific evidence, is at risk of extinction or extirpation throughout all or a significant portion of its (Ontario) range.

Threatened – Any native species that, on the best available evidence, is at risk of becoming endangered throughout all or a significant portion of its (Ontario) range.

Vulnerable – Any native species that, on the best available scientific evidence, is a species of special concern (in Ontario), but is not a threatened or endangered species. COSEWIC has replaced the category of "Vulnerable" with "Special Concern".

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) – a committee of representatives from federal, territorial, provincial and private agencies that assigns national conservation status to species at risk in Canada.

The Committee on the Status of Species at Risk in Ontario (COSSARO) – the Ministry of Natural Resources committee that evaluates the conservation status of species occurring in Ontario.

ANNEX H

LIMERICK FOREST EDUCATION

Limerick Forest Education: Local Schools List

Schools within 25 km radius of Limerick Forest Chalet in Limerick Forest South:

Kemptville and area:
- North Grenville District High School
- St. Michael Catholic High School
- South Branch Public School
- Oxford-on-Rideau Public School
- Kemptville Public School
- St. Michael Catholic Elementary School
- Holy Cross Catholic Elementary School

Spencerville and area:
- Centennial ‘67 Public School
- North Edwardsburgh Public School

Prescott and area:
- South Grenville District High School
- Boundary Street Public School
- Central Public School
- Maynard Public School
- Algonquin Public School
- St. Mark Catholic Elementary School
- St. Joseph Catholic Elementary School

Cardinal:
- South Edwardsburgh Public School

Stewardship council seeks comment on Limerick Forest

Public views invited on best ways to manage woodland

By MARK CALDER
Staff Writer

The Grenville Land Stewardship Council wants the public's help to determine the best ways to manage Limerick Forest once the counties government takes control from the province.

The council needs the public's help to find the best ways to administer the forest now that funding cuts have forced the MNR to bail out on its role as manager of the 14,000-acre woodland.

The council will recommend a method the counties can manage the forest in a way that will make it self-sufficient while still meeting the e needs Tha public various Unlim the Ea trappe formes start th The comm

MARK CALDER/THE RECORDER AND TI

Jack Henry (left), Grenville County stewardship co-ordinator, and Grenville Land Stewardship Council members Cliff Rogers (centre) and Connie Mitchell are pictured beside a map of the Limerick Forest.

Limerick Forest Management Plan

Public Participation and Information Sessions

The Limerick Forest Advisory Committee and the United Counties of Leeds and Grenville are currently developing a Long Range Plan for the Management of Limerick Forest and we need your input. Please drop in for a short visit any time between 3:00 and 8:00 p.m. at either of the display sessions.

Roebuck	Merrickville
Community Hall	Community Centre
County Rd. 18	106 Read St.
April 30, 2003	May 1, 2003

For more information contact Ed Reynolds or Rob Ross at the United Counties of Leeds & Grenville 342-3840 ext 329.

Limerick Forest input session set for April 30

ROEBUCK – Public input on the future of the Limerick Forest will be sought at an information session to be held later this month.

The get-together will take place Wednesday, April 30 from 3 to 8 pm at the community hall. A similar meeting will be held May 1 at the community centre in Merrickville.

A long-range plan for the management of the forest is being developed. Local residents are invited to pay a visit any time during the sessions, which are being held by the Limerick Forest Advisory Committee and the United Counties of Leeds and Grenville.

For more information, call Ed Reynolds or Rob Ross at the counties office in Brockville (342-3840, ext. 329).

Forest committee seeks more direction

Public comment sought to help determine future of Limerick Forest

By NICK GARDINER
Staff Writer

MAYNARD — Limerick Forest is alive and well two years after being turned over to a local advisory group by the Ministry of Natural Resources.

lic meetings being held by the committee.

mote awareness.

Currently, about 10,000 people ly to hike, he wildlife tivities, he

f the forest o opportu-

is now 60 w starting

urvested in stumpage is expect- five years. ittee isn't ds but is ort at the increased tions. rge Vail

job," he said.

The committee's annual report commits it to protecting ecological features, providing outdoor ...cation and recreational oppor...ities and supplying a source of economic activity but wants to hear from the public before drafting a long-term plan.

Resource technician Rob Ross said it's imperative the public use its voice.

"We want their input. It's really been a community-based plan from the beginning," he said.

The committee itself was formed from a meeting at the Roebuck Hall in the fall of 2001 after management of the forest was transferred to the United Counties by the MNR, he noted.

He said area residents will get a chance to make their feelings wn at two upcoming public meetings.

The first is scheduled for Wednesday, April 30 at the Roebuck Hall and the second for May 1 at the Merrickville Community Centre.

Coalition takes close look at Limerick Forest

By ROY LEWIS

A diverse coalition of interest groups is now preparing recommendations for the best use of the vast expanse of woods and wetlands known as Limerick Forest.

The effort to develop a management plan for the region, most of which is located in north-central Grenville County, has been evolving over the past few years as the Ministry of Natural Resources (MNR) slowly divests itself of managing various "agreement forests" across the province.

The MNR will soon turn back the management of Limerick to the region's owners, the United Counties of Leeds and Grenville.

The sparsely populated woodland has become a popular recreation area for many regional organizations that have expressed an interest in what will happen to the forest in the future.

Believed to have been named after Limerick County in Ireland because of

Scott Muir (right) of Ducks Unlimited, standing on a be members of the steering committee studying ways to how this water level control structure keeps the adjacent deep for ducks and their offspring to find food and shel

adjacent to Limerick, recalls when the region was just open farmland. He says there were some swamps but the extensive areas of wetlands that now dot the region did not exist. Ferguson believes the introduction of beavers has caused the substantial

to hold a series of meetings to formulate recommendations for the management of the forest.

Committee members received a first-hand look at some of the recreational activities in the forest during a three-hour tour through the region last Saturday. Just

United Counties hold Limerick Forest meetings

By Theresa Roach
Advance Staff Reporter

The United Counties of Leeds and Grenville recently held public participation and information sessions on the Limerick Forest Management Plan.

The meetings were held at the Roebuck Community Hall on April 30 and at the Merrickville Community Centre on May 1. The purpose of the sessions was for the Limerick Forest Advisory Committee (LFAC) and the United Counties to gather public input about their long range plan for the forest.

Limerick Forest meetings held

The Limerick Forest Advisory Committee (LFAC) held two open house type meetings. The first was held in Roebuck on Wednesday, April 30 and the second in Merrickville on Thursday, May 1. Here, Resource Technician, Rob Ross and Forest Manager with the United Counties of Leeds and Grenville, Ed Reynolds demonstrate the information they are trying to get out.

Advance Photo - T. Roach

There were about 29 people the Merrickville session and abo 44 at the Roebuck session. Fore Manager for the United Counti Ed Reynolds said the idea behi the sessions was to "get a feelir for what people are looking f and know what they are thinkir for the long range plan."

"The sessions went well a better than we had planned. W had a good turnout. Now we w take the information we receive and put it together in a workab form at which point it will be r viewed by LFAC and anythin that can be put in the plan will b added," said Reynolds.

The LFAC volunteer committe formulated a list of recreationa purposes for which those over 1 years use the forest. The list in cluded, cross country skiing, to bogganing, hiking, dog walkin wild life viewing, scouts, skatin school events, horses, motorbike snowmobiles, atv, mountain bike hunters, picnicking, dog sledding trapping and snowshoeing.

The Limerick Forest Recreationa Subcommittee is also helping t work on the long range plan. Th user code of conduct "champion multiple use of public lands for th benefit of all recreationalists."

The mission of the committee i to secure, protect and expand

•Please turn to Page 18A

Information session on Limerick Forest planned

By Theresa Roach
Advance Staff Reporter

The Limerick Forest Advisory Committee and the United Counties of Leeds and Grenville are in the process of "developing a Long Range Plan for the Management of Limerick Forest" and they are looking for public input.

They will be hosting two Public Participation and Information Sessions in the near future. The first will be held at the Roebuck Community Hall on Wednesday, April 30 and the second on Thursday, May 1 at the Merrickville Community Centre.

The sessions will run from 3 to 8 pm and residents are invited to drop in for a short visit any time during this time.

Limerick Forest represents 5,788 hectares of country lands in the United Counties of Leeds and Grenville. Until 2001, the forest was managed under agreement by the Ministry of Natural Resources and in 2001 management was transferred to the United Counties of Leeds and Grenville.

Forest users, adjacent land owners and other interested individuals and organizations got together under the Grenville Land Stewardship Council to "explore opportunities for participating in the agement of Limerick Forest. Limerick Forest Advisory Co ittee (LFAC) was then forme

The goal for this committee manage Limerick Forest e tively in order to maximize fits to the United Counties, p ecological features and valu the forest, to provide ou education opportunities an foster "a strong understandi sustainable resource managem to ensure that the forest cont to provide a source of econ activity for local people and vide a wide range of qu

•Please turn to Page 18A