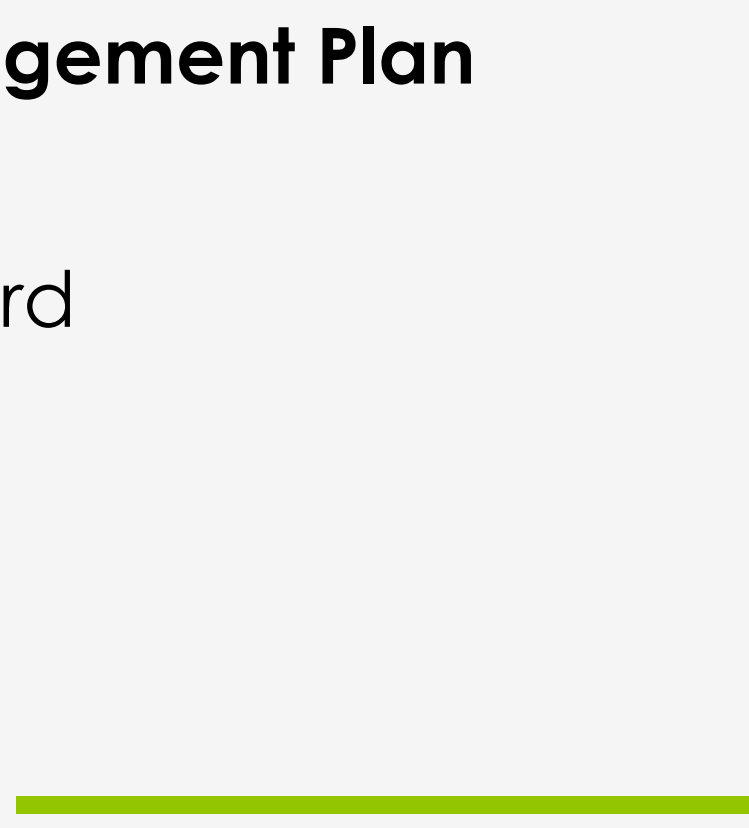


Ganaraska Forest Management Plan 2018 to 2038

GRCA Full Authority Board

Lawrence Powell, RPF
President
Madawaska Forestry

June 15, 2017



Forest Management Plan includes:

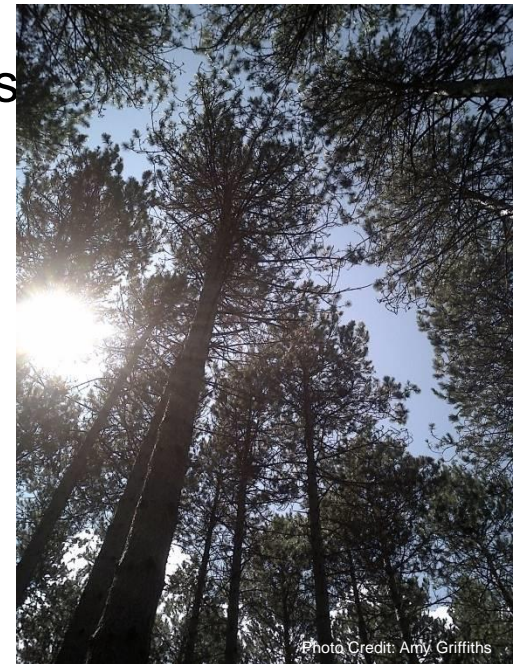
- Management History
- Management Philosophy
- Description of the Land Base, the Forest, the forest ecology, the Values present
- Management Direction: objectives and/or priorities
- Management Details: Where, How to, protect Values

The FMP Does Not Include

- Information on Fees
- Governance
 - Recreation Users Committee
 - Governance of Recreations
- Individual Trails
- Specific Matters of corporate policy that rests with GRCA Board of Directors

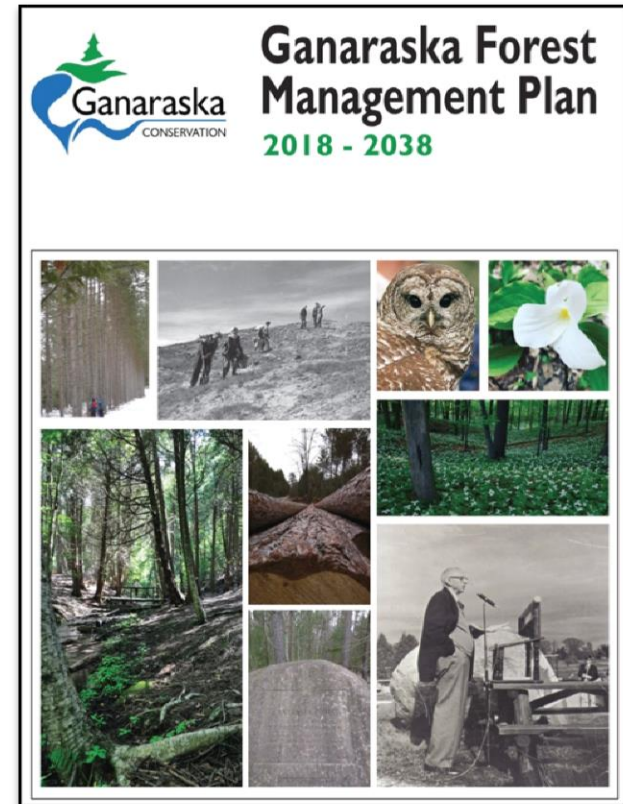
Presentation Overview:

1. Overview of the Plan and Guiding Documents
2. High Conservation Value Forest Area
3. Recreation
4. Current Ganaraska Forest Conditions
5. Threats to the Ganaraska Forest
6. Forestry Principles
7. Sustainable Forest Management
8. Forest Management Program



GFMP Content

- Introduction
- History of the Forest
- Abiotic, Biotic and Cultural Features
- Current Forest Conditions
- Long Term Management and Strategic Direction
- Forest Management Program
- Forest Protection
- Forestry Access
- Forest Operations
- Operating Plan
- Managing Forestry Interactions
- Communications
- Recommendations



Guiding Documents

The GFMP will be guided by and support the following:

- Ganaraska Region Conservation Authority Strategic Plan: 2015-2020. Strategic Actions:
 - Strengthen science, knowledge and decision making
 - Value the watershed through protection and restoration
 - Strengthen existing partnerships
 - Build new partner opportunities
 - Create connections
 - [Be] responsible watershed-based advocates
 - Foster support and improved understanding
- Ganaraska Watershed Plan, 2010
- Ganaraska Region Conservation Authority Natural Heritage Strategy, 2013

High Conservation Value Forests

To be a High Conservation Value Forest (HCVF), a forests must possess one or more of the following attributes:

- Forest areas contains globally, regionally or nationally significant concentrations of biodiversity values.
- Forest areas that are in or contain rare, threatened, or endangered ecosystems.
- Forest areas that provide basic services of nature in critical situations (i.e., watershed protection and/or control).

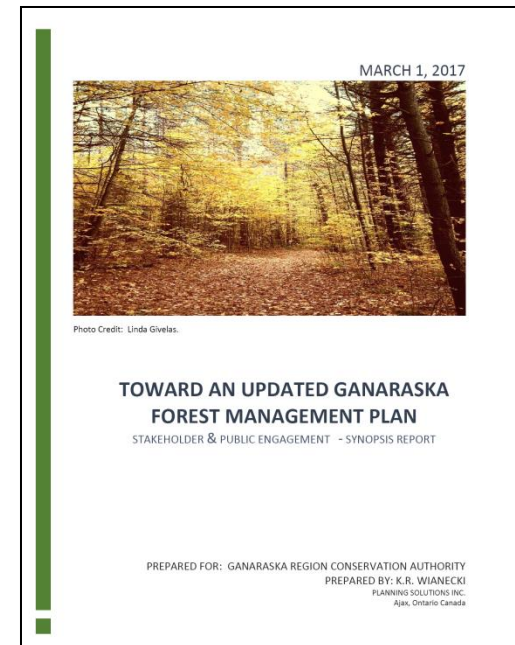
For the Ganaraska Forest there are two HVCF areas:

1. Tallgrass prairie restoration site (Ochonski prairie)
2. Groundwater recharge areas



Recreation

- Recreation is an important part of the Ganaraska Forest.
- The use of the Ganaraska Forest by a diverse group of trail users and involvement of the Ganaraska Forest Recreation Users Committee endorses the philosophy of the GRCA for a multi-use forest.
- A public consultation process around the development of the Ganaraska Forest Management Plan was commissioned in 2016-2017.
- In recognition of how important recreation is within the Ganaraska Forest it must be noted that many of the comments provided through the consultation were regarding recreational uses.



Recreation

- The Ganaraska Forest will be maintained, enhanced and restored over the long term in recognition of the many ecological, economic and social benefits that the Ganaraska Forest provides.
- The Ganaraska Forest Management Plan will support access to the Ganaraska Forest by families and individuals therefore recognizing the value of the Ganaraska Forest from a human health, wellness and active living perspective.
- Forestry operations will be integrated into the multi-use program for the Ganaraska Forest, and road and trail closures will only be implemented when and if there are public safety concerns.



Current Forest Conditions

A new forest inventory was initiated in 2016 and completed in March of 2017. All compartments were visited and information was collected from each compartment including suggestions for compartment objectives and management:

- Basal Area
- Range of diameters
- Tree species
- Distribution of tree regeneration
- Tree regeneration species
- Species composition percentage
- Other vegetation: species, quantity, distribution
- Wildlife habitat, natural heritage, species observed
- Invasive species observed
- Soils, physical features, drainage



Area of Forest Units

Forest Unit	Criteria	Area (Hectares)
Red Pine	Pr >60%	1,339
White Pine	Pw >60%	582
Pine Mixedwood	Pw+Pr >60%	610
White Spruce	Sw >60%	20
Larch	L >60%	8
Other Conifer	Ps, Pj, Ce, He, L	8
Poplar	Po >40%	125
Red Oak	Or >60%	1,059
Upland Hardwood	Or+Mr+Mh >60%	273

Pr = red pine, Pw = white pine, Sw = white spruce, L = larch, Ps = scotch pine, Pj = jack pine, Ce = Eastern white cedar, He = Eastern hemlock, Po = poplar, Or = red Oak, Mr = red maple, Mh = sugar maple

Threats to the Forest

- Climate Change
- Invasive Plants
- Insect Pests and Diseases
- Wildlife Damage
- Fire



Long Term Management – Forestry Principles

The long term ecological health of the Ganaraska Forest is paramount. All forest management will be focused on the following principles.

- Ensuring that the **health and integrity of all native ecosystems and species** associated with the Ganaraska Forest are **maintained**.
- Managing for the **maintenance of diverse native ecosystems**.
- Providing for the next forest, through the **protection and promotion of natural native regeneration**.
- Ensuring that the **multiple-use nature** of the Ganaraska Forest **is recognized and protected during all forestry operations** and that all **forest uses are compatible with maintaining** the **ecological health** of the Ganaraska Forest.
- **Preserving and honouring the cultural history of the Ganaraska Forest** by supporting the protection of historic structures and by documenting and preserving past and present work within the GRCA.
- Ensuring that the Ganaraska Forest provides a **sustainable economic benefit to the GRCA, without compromising the ecological health** of the Ganaraska Forest.

Sustainable Forest Management

Annual Growth of the Forest (Estimated)

Forest Unit	Area (hectare)	Average Growth Rate (m ³ /ha/year)	Estimated Growth (m ³ /year)
Red pine	1,339	5.0	6,695
White pine	582	4.5	2,619
Pine Mixedwood	610	4.5	2,745
Other conifer	36	4.5	162
Total conifer			12,221
Forest Unit	Area (hectare)	Average Growth Rate (fbm/ha/year)	Estimated Growth (m ³ /year)
Poplar	125	500	62,500
Red oak	1,059	500	529,500
Upland hardwood	273	500	136,500
Total hardwood			728,500

Sustainable Forest Management

Available Annual Average Harvest – to ensure overharvesting does not happen. The total Productive Forest is 4,024 Hectares.

Forest Unit	Total Area (hectare)	Cutting Cycle (years)	Available Annual Area (hectare)	Average Annual Harvest (m ³ /hectare)	Available Annual Harvest (m ³ /year)
Red pine	1,339	10	133.9	36.6	4,900
White pine	582	10	58.2	36.6	2,130
Pine mixedwood	610	10	61	36.6	2,232
Other conifer	36	15	3.6	25.0	90
Total conifer	2,567				9,352
Forest Unit	Total Area (hectare)	Cutting Cycle (years)	Available Annual Area (hectare)	Average Annual Harvest (fbm/hectare)	Available Annual Harvest (fbm/year)
Poplar	125	20	6	4,000	24,000
Red oak	1,059	25	42.4	4,000	169,600
Upland hardwood	273	25	10.9	4,000	43,600
Total hardwoods	1,457				237,200

169200
Fbm =
400 m3

237200
Fbm =
559 m3

Forest Management Priorities

- Manage the densely stocked compartments to ensure that these areas will remain healthy and continue to play a role in a productive forest.
- Manage for a diverse forest that supports a wide range of native species.
- Manage for natural regeneration providing adequate light and spacing to support natural succession within the Ganaraska Forest.
- Manage for the natural regeneration of white pine and red oak, while supporting the protection and enhancement of other native species.
- Manage for the sale of timber to be balanced over the term of this Forest Management Plan and to respect the ecological requirements of this Forest Management Plan.

Forest Management Program

Silviculture: The art and science of producing and tending a forest; the theory and practice of controlling forest establishment, composition, growth and quality of forests to achieve the objectives of management.

- Selection System – all aged stands
- Shelterwood system – gradual removal of the overstory leading to a young stand
- Clearcutting system – removal of all stems to start the stand over.
 - Clearcutting will only be considered within the Ganaraska Forest when conditions are such that there is no alternative and the area is small (less than 2 ha) or it is in the best interests for the restoration of a species or group of species that could be at risk (i.e., tallgrass prairie).

Harvesting Guidelines

All harvesting will require a detailed prescription for each compartment. Each prescription will be unique to that compartment or a group of compartments and will provide for the unique mixture of both species and field conditions for that compartment.

- Pine Compartments
- Poplar
- Red Oak and Mixed Hardwoods
- Larch White spruce and Other Conifers

Areas of Concern

Area of Concern (AOC) is a standard forestry term. AOC's are areas that require specific prescriptions to protect their values. Some of the AOC's are mapped and eventually all AOC's will be mapped as information becomes available.

- Species at Risk
- Cultural and Historical
- Wildlife Habitat
- Wetlands
- Raptors
- Migrating and Nesting Birds
- Tallgrass Prairie Areas
- Groundwater Recharge Areas
- Recreation

Forestry Access

Guiding Principles

- All forestry operations will be conducted between August 1st and March 10th.
- All forestry operations will ensure that the roads and trails used during the operation will be left in the same or improved condition that they were found.
- No brush or debris from the logging will be left on the trails.

Shared Trails and Road Use

All forestry operations for the next operating year will be proposed one year in advance of the operations starting in the Annual Plan. During the development of the Annual Plan any potential conflicts with trails and roads will be identified and addressed.

Finances

Financial considerations are based upon the following assumptions:

- The market conditions and demand that presently exist for forest products will continue for this operating period.
- There is room within existing markets for small dimension material to be harvested assuming there is a variety of innovative tendering initiatives available.

For this operating period, the average combined tenders for plantation material should be over \$200,000.00 per year. At the end of this operating period, the next set of tenders for the second operating should be reassessed and predictions made on the finances for that operating period.

Annual Plan and Monitoring

Annual Plans

Every year an Annual Plan, forestry operations planned for the following operating year (April through to the end of March), will be issued in April of the preceding year. The Annual Plan will include:

- Where harvesting operations are planned for that year.
- Where tending and regeneration programs are planned for that year.
- Where any road or trail improvements are planned for that year.
- Identification of specific areas of concern or features that will need protection or justify modifications to prescriptions.

Monitoring

Monitoring will consist of harvest inspections, tree health and forest health and research.



Thank you

- Questions?