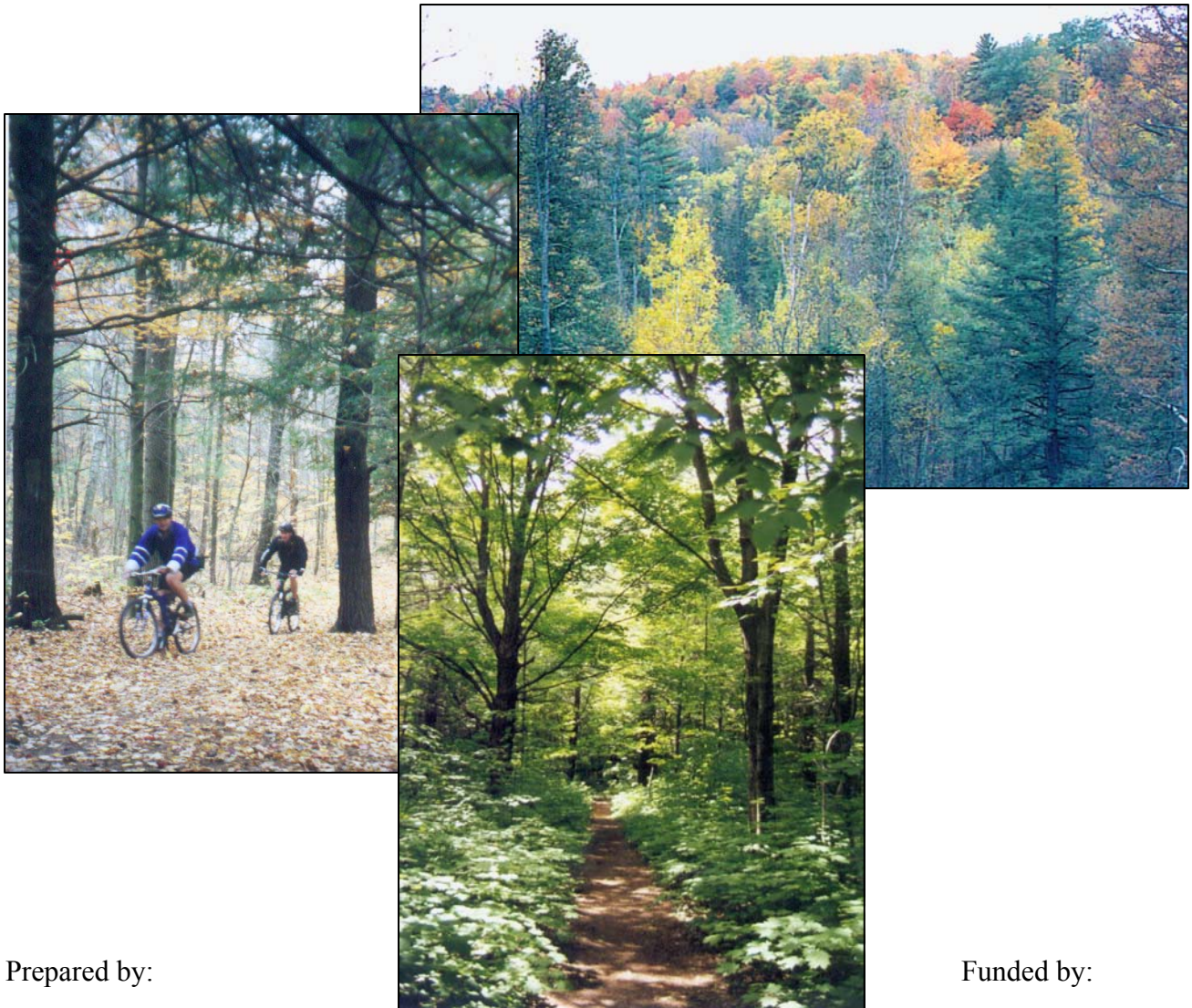


Long Sault Conservation Area Management Plan



Prepared by:



February 2004

Funded by:



C O N T E N T S

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Executive Summary

Long Sault Conservation Area Management Plan

Stage 1: Existing Conditions Report

Long Sault Conservation Area is a 338-hectare property located on the provincially significant Oak Ridges Moraine. Long Sault Conservation Area is the largest property owned by CLOCA and is one of the largest publicly owned natural spaces in the area. The Conservation Area surrounds a portion of the headwaters of the Bowmanville/Soper Creek Watershed, and is extremely important to the community for recreation (hiking, skiing, mountain biking, naturalist activities) and environmental education. The pursuit of these various outdoor activities by the public results in over 20,000 visits to the Conservation Area annually. Long Sault Conservation Area is also an important area for biological diversity as it supports a variety of species due to the nature of its largely un-fragmented woodland that is composed of coniferous/deciduous forests and pine plantations.

The Long Sault Conservation Area Management Plan includes three stages:

Stage 1: Existing Conditions Report

The purpose of this section is to provide a summary of the existing conditions of the property, including a review of both the natural heritage system and the recreational activities associated with the Long Sault Conservation Area. This section outlines the cultural history of the Area and describes how the property functions within today's regional context. Current public uses are identified and the recreational infrastructure is listed. A description of the Area's vegetation, aquatics, wildlife habitat, and geology/groundwater function provides the reader with a visual picture of the study area while also showing how it functions within the greater ecosystem. Finally, the results obtained through the evaluation of the natural heritage system are described. Based on the results of the evaluation, particular areas of concern are identified with regard to ecological importance, health and sensitivity.

Stage 2: Long-term Concept Plan

The Long-term Concept Plan outlines the future vision for the property. The natural heritage management goals for individual features are based on the results of the natural heritage evaluation. A vision for the natural heritage system within the larger area is provided. Stewardship plans have been developed and will be used to help achieve the larger vision for the Area. Long-term recreational goals are identified, while keeping in mind the projected changes in size and dynamics of the regions population.

Stage 3: Management Strategy

With the current conditions documented and the long-term vision established, a management framework is outlined. This section addresses the actions required to carry out restoration and rehabilitation within the Area and the timeframe required to carry out the strategy. The Management Strategy also addresses the opportunities for recreation and resource interpretation that exist within the Area. The section identifies where opportunities for stewardship and community partnering may exist in the future.

A key element that was required to complete this plan effectively was the recognition of the various stakeholders who could be affected by decisions that were made regarding the long-term management of the Long Sault Conservation Area. All those who use the property, and other interested parties, were invited to participate in two public information sessions. This process ensured that the public had a chance to review and comment on the information contained within this report and provide input regarding their needs and issues. Agencies and organizations with a vested interest in the property were also consulted throughout the process.

The CLOCA's Board of Directors approved the Long Sault Conservation Area Management Plan in February 2004. The implementation of the Long Sault Conservation Area Management Plan will be included in CLOCA's future work plans, dependent on available resources.

The goals of the Long Sault Conservation Area Management Plan are:

- 1) To identify, protect and enhance the current and potential natural heritage features, attributes, functions and linkages of Long Sault Conservation Area
- 2) To provide the public with enjoyable recreational and educational opportunities that will not threaten the health of the area
- 3) To promote the cultural and heritage significance of the area

In order to accomplish the goals of the management plan, a number of objectives were defined.

Protection Objectives:

- To organize the existing natural heritage data and to undertake new research that will fill information gaps and strengthen our knowledge of natural heritage features
- To develop a transferable natural heritage evaluation system (to be used for other Conservation Area planning projects in the future)
- To evaluate the natural heritage features of the property so that areas of management concern can be identified
- To develop immediate and long-term management solutions to problems identified through the evaluation process and by community members
- To identify areas for acquisition in order to better protect the natural heritage features within the Conservation Area and to better protect portions of the ORM in the future

Recreation Objectives:

- To determine the current public uses that occur in the Area and to identify the user groups involved in these activities
- To evaluate the use of existing trails and facilities and to determine the compatibility of these uses with the protection goals
- To determine which existing recreational or educational activities should be promoted within the Area, and to determine those activities that might be better located elsewhere
- To determine other recreational and educational activities that may be suitable for the Area, but are not yet encouraged

Community Objectives:

- To liaise with the public and provide opportunities for commenting and review throughout all phases of the project
- To develop the long-term vision and goals for the property through community consultations
- To create and strengthen community partnerships so that information and ideas flow freely between groups and to ensure that community involvement is sustained following the planning process
- To continue to promote environmental awareness through education and experience

Natural Heritage Evaluation

The question of “*How do you even begin to identify the areas that require conservation, enhancement or restoration and what do you do with them once you have?*” was faced early on in the Long Sault Conservation Area planning process and resulted in the development of the Natural Heritage Evaluation System. Using information gained through the development of the Lynde Shores Conservation Area Management Plan, an existing evaluation system was updated and modified to reflect current landscape and conservation ecology principles, federal and provincial policies and recent scientific research. This process ensured that a comprehensive, reproducible, transferable and adaptive evaluation system was developed for use in this, and future conservation area management planning processes.

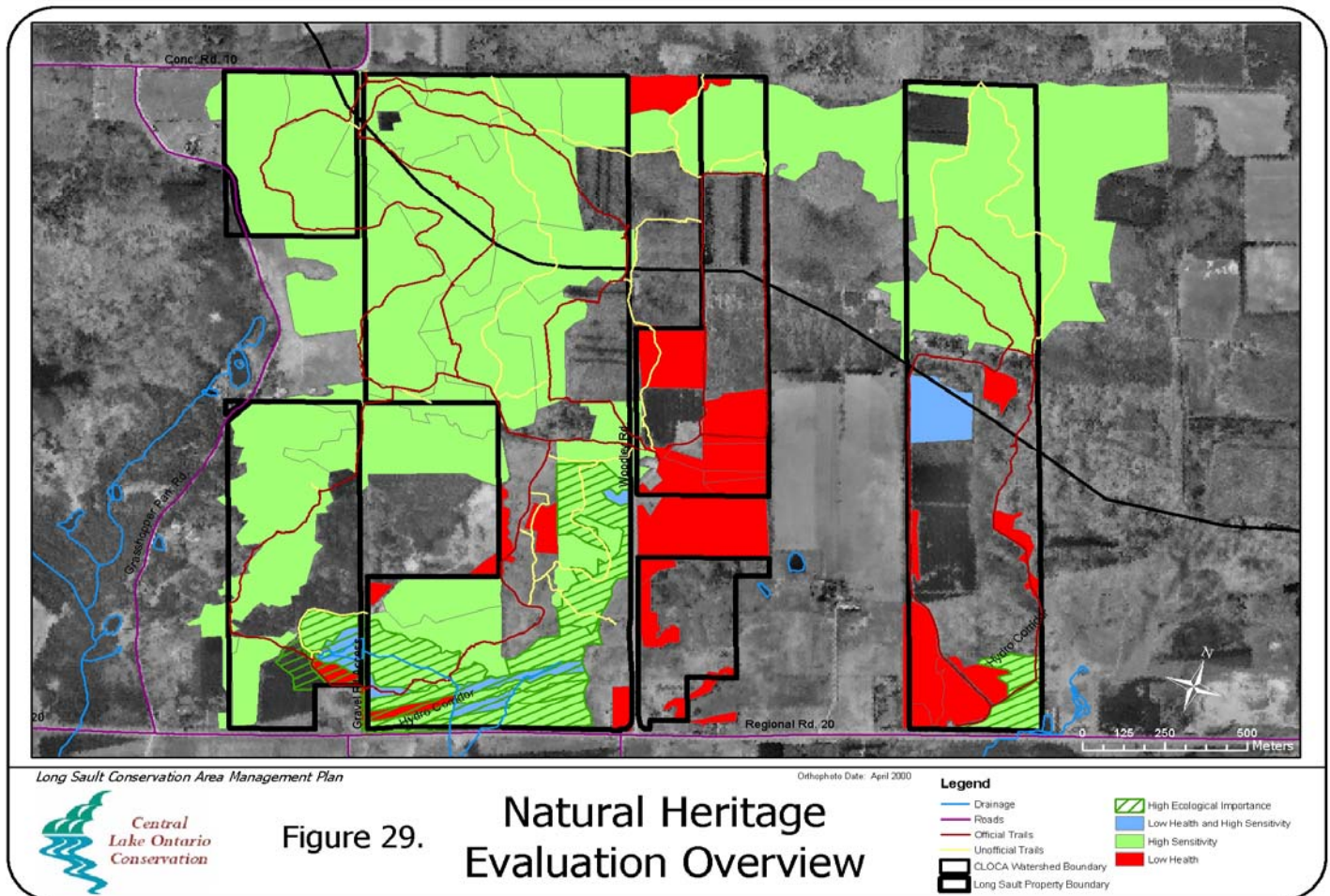
The area was partitioned into unique vegetative communities (polygons) based on the Ecological Land Classification (ELC) Vegetation Types. The evaluation system assessed each polygon for: **Ecological Importance, Health and Sensitivity**. Each of the three categories is composed of a number of different sub-categories. When the sub-category scores were combined, a total polygon score was generated for each of the three main categories. By comparing polygon scores within Long Sault, a hierarchy of “highs”, “mediums” and “lows” were established for **Ecological Importance, Health and Sensitivity**.

Natural Heritage Evaluation System Categories and Sub-categories.

Evaluation Category	Sub-category	Scoring
Ecological Importance	National, Provincial, Regional Significance	Identifies polygons with features or functions that have a published significance associated with them.
	Unique to CLOCA	Identifies polygons with features or functions that are significant to CLOCA's jurisdiction as identified by CLOCA.
	Wetland Function	Higher values assigned to polygons that fall within wetland boundaries.
	Fish Habitat Function	Higher values assigned to polygons that fall within fish habitat boundaries.
	Woodland Function	Higher values assigned to polygons that are treed areas
	Flood Plain and Valleyland Function	Higher values assigned to polygons that fall within flood plain and valleyland boundaries.
	Wildlife Habitat Function	Higher values assigned to polygons that fall within key wildlife habitat boundaries.
	Groundwater Function	Higher values assigned to polygons that are associated with groundwater recharge or discharge.
	Vegetative Species Diversity	Higher values assigned to polygons with higher species diversity.
Health	Degree of Past and Present Disturbance	Lower values assigned to polygons where the intensity and extent of past human and natural disturbances are high.
	Shape of Feature	Higher values assigned to polygons with less "edge" per unit area.
	Reproductive Viability	Higher values assigned to polygons that are large in size and that are in a later stage of succession.
	Nativeness of Species Assemblage (Weediness Index)	Lower values assigned to polygons with greater numbers of non-native, invasive plant species.
Sensitivity	Sensitivity to Soil Compaction	Higher values assigned to polygons with soils that are more prone to compaction.
	Tolerance to Site Conditions (Coefficient of Conservatism)	Higher values assigned to polygons with a greater number of plants whose tolerances to site conditions are very narrow.
	Succession	Higher values assigned to polygons that are in a later stage of succession.
	Surface water dependence (Wetness Index)	Higher values assigned to polygons with plants that are more dependent on the presence of surface water.

Evaluation Results

Ecological Importance	Health	Sensitivity
<p>The majority of the polygons within Long Sault were evaluated as being of relatively medium ecological importance. The two areas of high ecological importance, located in the southwest and southeast are associated with groundwater seepages and tributaries that flow south from these points through valleylands. As well, wetland communities have developed around and within these areas over time.</p> <p>Long Sault Conservation Area also contains a large area of core forest interior a landscape which is declining throughout the CLOCA jurisdiction.</p>	<p>The polygons that were evaluated as having high health were located primarily in the northern half of the Conservation Area. This area is largely associated with older, naturally forested communities. The southern half is composed mainly of cultural vegetation communities that are in medium and low health. Approximately 50% of those low health polygons were cultural pine plantations.</p> <p>Three factors consistently reduced overall health scores in a number of polygons. These factors included abundant non-native and invasive plant species, poor shape and natural and human disturbances. Non-native plant species were abundant in over half of the low health scoring polygons. Poor shape was identified as a problem in a number of polygons in the south particularly within the Hydro One corridor.</p>	<p>The sensitivity mapping corresponded closely to the health mapping. The sensitive areas were located mostly in the northern half of the Conservation Area, with the exception of a large sensitive area associated with the wetlands in the southwest and in the southeast.</p> <p>Coefficient of Conservatism scores were quite high throughout much of the Conservation Area, which suggests that the area supports a large number of specialized plant species.</p> <p>In the south, many of the polygons were in an early stage of succession. Though there were very few polygons in a late stage of succession, many in the northern half are moving towards the later stages of succession.</p>



Areas of Concern

In an effort to determine areas of primary concern and to see how these areas corresponded with the existing infrastructure within Long Sault Conservation Area, a mapping exercise was carried out. By mapping only polygons with high ecological importance, low health, and high sensitivity, it was possible to identify areas where any of the three layers overlapped. Areas of primary concern were identified in those areas where all three overlapped. These primary areas are all within the southwest wetland area. Areas of secondary concern were identified in those areas where only two of the layers overlapped. These coincided with the entire wetland area in the southwest and also the wetland area in the southeast. The majority of the secondary areas of concern are areas of high ecological importance and high sensitivity; however, three polygons were identified as having high sensitivity and low health.

It is interesting to see where the existing infrastructure interacts with these areas of concern. Both a portion of the Bluebird trail and the Meadowview trail pass directly through areas of secondary concern (high ecological importance and high sensitivity). As well, the low ropes course is located within an area of secondary concern (low health and high sensitivity). However, one can also see that the trails passing through the northern end of the Conservation Authority do not appear to be creating any major reductions in health at this time.

Any decisions regarding the management of these areas of concern must take into account the existing infrastructure, and the activities associated with these facilities, in order to protect them for the long-term.

Issues

As part of the management planning process, a number of issues and concerns have arisen through public input (including the results obtained by surveys completed in the summer of 2000), staff knowledge, and the Natural Heritage Evaluation. The following is a list of issues that should be considered:

<p>Vegetation Health</p> <ul style="list-style-type: none"> • The evaluation identified non-native and invasive plant species as a problem in many polygons. Of particular concern is the presence of Dog-strangling vine, Common buckthorn, Scots pine and Russian olive. • The areas that have a high ecological importance and sensitivity, as identified through the evaluation, should be monitored in order to ensure that their health is not jeopardized by existing and future land use activities or by the presence of invasive species. • Poor shape and smaller size were identified as problems in a number of polygons through the evaluation process. Cultural community polygons with poor shape could be rehabilitated in order to correspond with adjacent communities. Alternatives for improving connectivity with other areas should also be examined. • High levels of human and natural disturbance resulted in lower health scores in some areas. These disturbances should be assessed and mitigated if feasible. 	<p>Resource Management</p> <ul style="list-style-type: none"> • Some form of active management may be required within the plantations as they consistently scored lower in many of the evaluation sub-categories. • Cultural meadows and thickets are far from the targeted climax forest community in terms of succession; however, they do provide suitable habitat for a number of species. Management planning should address the long-term goals for these communities. • The original firebreaks separating the cultural pine plantations in the southwest appear to play a role in limiting the interior forest boundaries. Management planning should either encourage natural regeneration if firebreaks are no longer needed, or discourage regeneration so that these areas continue to provide their intended function if a fire does occur. • Interior forest boundaries could be extended if certain cultural woodlands and other non-treed communities were managed with that long-term goal in mind. • The bluebird nest box program could be expanded, as there is sufficient open habitat within the area to support it. • The culvert that maintains drainage from the pond area, under a section of the gravel pit access road, should be monitored to ensure that the grate does not become blocked on the upper wetland side to maintain water levels. • The two unused farm wells should be properly abandoned so that they do not pose any risk to groundwater resources.
<p>Conflicts With Resource Use</p> <ul style="list-style-type: none"> • Horses are not currently permitted within the Conservation Area; however, equestrian activities do occur throughout the Area, particularly in the east section. • Cross-country skiers have experienced continuous damage to established ski tracks by pedestrians in the winter months. • The general public have expressed concern over unleashed dogs in the Conservation Area, and the lack of attention by dog owners to 'stoop and scoop' procedures. • A number of unofficial trails have been identified throughout the area. Some of these are used frequently, and some even travel through private property. A trail in the northeast section is currently used by off-road vehicles (ATV's and dirt bikes), which are not permitted within the Conservation Area. • User conflicts have occurred in the past particularly related to multi-use trails. Methods for accommodating multiple user groups should continue to be explored. 	<p>Shortcomings Of Existing Facilities</p> <ul style="list-style-type: none"> • Public comments have identified a number of problems in the current signage located throughout the property. These problems include: <ul style="list-style-type: none"> • A lack of distance markers along trails. • No trail map pamphlets available within the Area. • Signage is confusing and does not correspond to mapping. • A lack of interpretive signage throughout the property. • CLOCA has acknowledged that directional signage on the trails requires a review, as discrepancies have been identified since they were first installed. • The north gate entrance should be identified as an access point to Long Sault Conservation Area for those using the Oak Ridges Trail. Furthermore, there is no official access to the east section from the Oak Ridges Trail. • User groups have identified an interest in having more trails throughout the area. • The need for more picnic tables and garbage cans has been identified through the user surveys. • There is a need to address trail erosion problems in a number of locations and the lack of sufficient boardwalk through the seepage area on the Bluebird Trail.

Stage 2: Long-Term Concept Plan

A long-term concept plan has been developed to identify the larger natural heritage goals for the surrounding area so that management activities carried out within Long Sault Conservation Area contribute to the achievement of these goals. Long-term concepts also work towards the protection and enhancement of natural linkages that connect Long Sault to other existing and potential habitat sources within the area.

The Concept Plan illustrates the collective long-term goals for natural heritage management and public use. The concept plan is intended to be ideal or visionary; it incorporates principles of ecosystem management without taking a prescriptive approach to planning. It is inherently flexible, in that the plan lends itself to modification without compromising underlying conservation principles. Thus, all interim management options can be part of the progress leading towards the fulfillment of this vision. It is intended that the plan will be implemented in phases, as dictated by the pattern of land acquisition and by the acceptance of stewardship opportunities.

Long Sault Area Management Unit

In order to properly develop a long-term concept plan for Long Sault Conservation Area, it was important to establish boundaries within which CLOCA would consider active management. These boundaries are by no means fixed, but they enclose an area within which CLOCA can optimistically develop management strategies that will directly improve the existing natural heritage system within the management unit over the long-term. The management unit also includes areas that contain significant features, as well as portions of current and potential linkage areas that provide natural corridors to other parts that make up the greater natural heritage system.

The Long Sault Area Management Unit encompasses 2400 ha. Ideally, the best way to ensure the long-term protection of the natural heritage features within the management unit is through acquisition. Ownership by CLOCA would allow for better control so that long-term and large-scale visions for the area could be achieved. However, acquiring all of the property parcels within the management unit is unrealistic. As a result, CLOCA will consider and pursue a number of avenues in order to achieve the long-term vision for the larger management unit including:

- Property Acquisition
- Ecogifts
- Conservation easements
- Covenants
- Land donation and life estates/interests
- Stewardship/Education

Natural Heritage Approach: Conserve, Enhance, Restore

The current landscape within the Long Sault Area Management Unit is composed of several different vegetation communities in various stages of succession, as well as agricultural and rural residential land uses. Because of this diversity, the management and stewardship required to achieve the ultimate natural heritage system within the Management Unit will differ according to the type of community or feature in question. This concept plan is visionary. Instead of trying to assign specific management approaches to specific areas within the Management Unit that may not apply in several years because of slight changes in land use, long-term management within the area will be based on three approaches.

Conserve: A large portion of the Management Unit is already treed. Because the ultimate goal is to move towards a predominantly forested landscape within the Management Unit, these areas require little physical work to achieve the end goal. As a result, the management approach that will be used in forested communities (i.e. those communities having more than 60% tree cover) will be to conserve them so that their current functions and attributes are not degraded in the future. Wetland communities will also be conserved in the same manner as treed communities.

Enhance: There are quite a number of property parcels within the Management Unit that have either been historically or recently deforested and are now at varying stages of succession (i.e. cultural plantations, cultural woodlands and cultural thickets), or they were fairly recently used for agriculture and are now being left fallow (cultural meadows). These communities will eventually succeed into forested communities on their own. However, they could be enhanced through a number of means (including planting native species, removal of invasive species, disturbance management and selective thinning), which would help to accelerate succession to a natural forest. In appropriate locations, some of the cultural meadows will be maintained as such or be enhanced so that they become prairie/savanna.

Rehabilitate: Much of the southern portion of the Management Unit is currently used for various types of active and passive agriculture. If the long-term goal for the Management Unit is to be achieved, much of this area will ideally be removed from agricultural use and gradually converted to a predominately treed landscape over time. In order to achieve a treed landscape in these areas, active rehabilitation efforts will speed the transition time. Natural succession alone will also result in a forested landscape over a much longer time frame (passive rehabilitation). Emphasis will be placed on marginal and riparian areas.

The following figure shows the results of the visioning exercise.

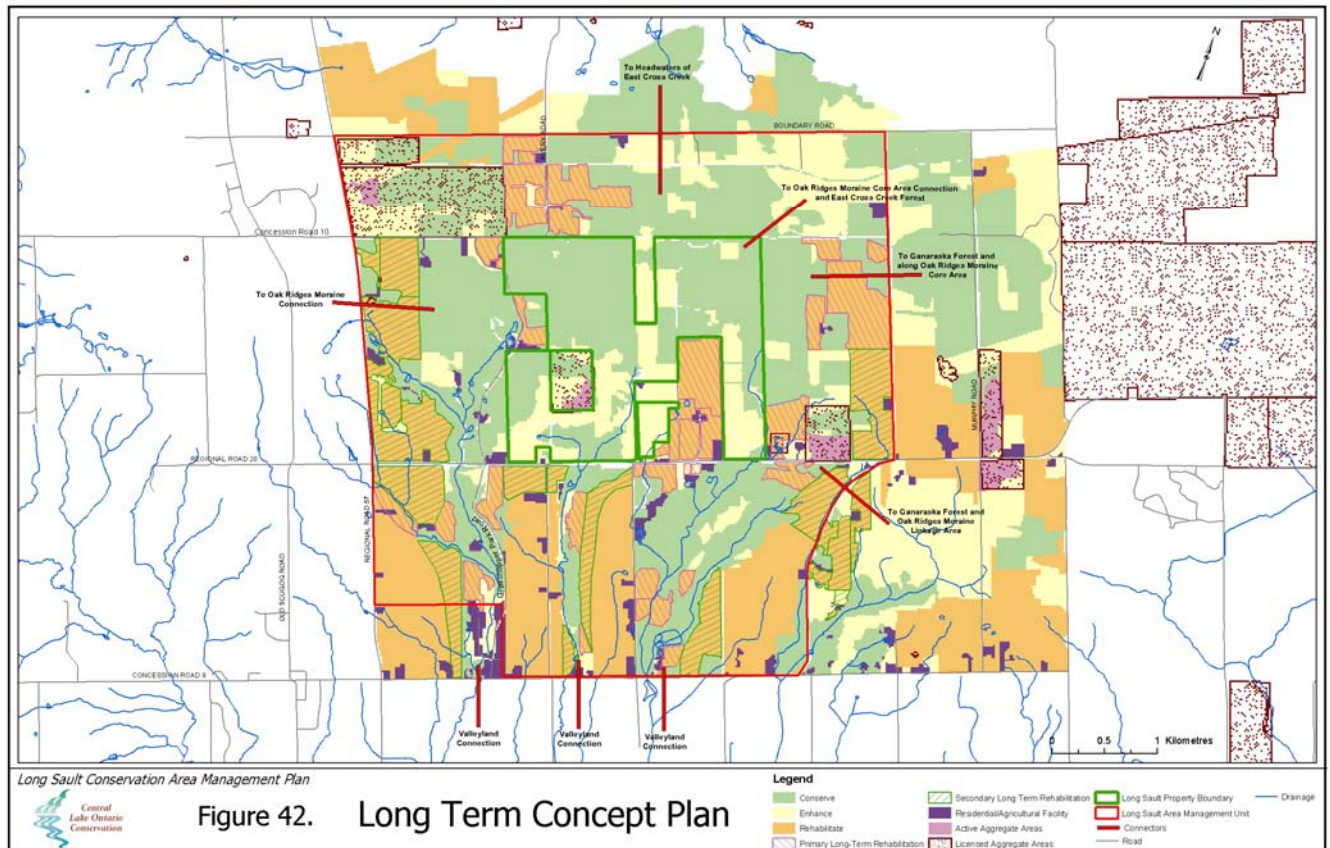


Figure 42. Long Term Concept Plan

*(Please refer to page 2-21 for full size look at Figure 42)

Public Use Approach

Public use and recreation will continue to be an important component of Long Sault Conservation Area in the future. The existing trail network currently provides the public with multiple options in terms of scenery, terrain, degree of difficulty and access to most parts of the Area. The network is quite extensive and easily handles the demand placed on it by current users. It is expected that the trail network, with some exceptions, will continue to provide adequate recreational opportunities well into the future and should be able to handle a reasonable increase in use without any real adverse effects to the surrounding natural heritage system.

It is generally agreed that trail construction of any kind can affect aspects of the natural heritage system; for example, humans disturbing wildlife in areas where access did not previously exist. Because the main goal of this management plan is to protect and enhance the natural heritage system within the Conservation Area and because the existing network will adequately handle a reasonable increase in use, CLOCA currently has no plans for any major expansions to the trail system. However, there are a number of circumstances under which CLOCA would consider expanding the trail network within Long Sault Conservation Area if it was deemed necessary in the future. In the event that a larger trail network is a) deemed necessary and b) achievable given the size and layout of the property, general trail development guidelines have been provided in order to achieve the best long-term results from trail development.

The Oak Ridges Trail currently aligns with the unopened road allowance that forms the northern boundary of Long Sault Conservation Area. CLOCA will continue to support and promote this trail system as it passes through the Long Sault Area Management Unit. One access point exists in the northwest corner of Long Sault from the Oak Ridges Trail. A second access point in the northeast end may be considered in the future if demands are sufficient in order to create a parallel alternative side trail through the Conservation Area that enters and exits at points along the Oak Ridges Trail. If the property boundaries of Long Sault Conservation Area are further extended in the future, additional Oak Ridges Trail access points will be considered where feasible and will be subject to the same natural heritage evaluation requirements identified above.

Long-Term Concept Plan Expectations

The Long Sault Area Management Unit provides a reasonable area within which CLOCA can optimistically work towards the long-term natural heritage goals for this corner of the jurisdiction. The Management Unit contains many natural heritage features that are worthy of protection and enhancement. Even partial protection will help to ensure that this area remains an important component of the larger natural heritage system along this section of the Oak Ridges Moraine.

Although the life span of this plan is 20 years, this is a very short period of time from a biological standpoint when considering the speed of natural succession, the development of robust old growth habitats and the recovery of certain wildlife populations among other things. As a result, it is expected that not every goal within the Long-Term Concept Plan will be entirely fulfilled within its lifetime; however, it is expected that every stewardship activity, property acquisition/donation and conservation effort carried out within the Long Sault Area Management Unit over the next 20 years will greatly enhance the area and ensure that the long-term natural heritage goals for this area and across the Oak Ridges Moraine are achievable in the not too distant future.

Stage 3: Management Strategy

The Management Strategy establishes the framework from which Long Sault Conservation Area will be managed over the life of this management plan. Strategies have been developed to ensure ecologically important areas remain as such by maintaining or improving their health and protecting their sensitivities. The strategies incorporate the results of the Natural Heritage Evaluation, accepted biological principles, user survey information and general public comments.

Concerns and issues identified were considered individually. The management strategy proposed for each issue was that which could best achieve the three goals of the management plan, while acknowledging public demands.

NATURAL COMMUNITIES: ECOLOGICALLY IMPORTANT AREAS

Areas of high ecological importance, as determined by the Natural Heritage Evaluation System, are priority areas for management because of the large role they play in supporting the natural heritage system within Long Sault and across the watershed. As a result, priority will be given to areas of high ecological importance for improvement and enhancement so that the health of these communities remains or becomes high. These same areas will also be priority areas for protection in order to ensure that the sensitive components of these communities are not affected, which will in turn protect their long-term health and level of biodiversity. Activities within these areas in the future will have to meet these requirements.

NATURAL COMMUNITIES: SENSITIVE AREAS

Areas of high sensitivity, as determined by the Natural Heritage Evaluation System, are priority areas for protection through recreational activity management. Areas of high sensitivity can be more affected (resulting in later reductions in health) by certain activities because of sensitivities relating to soil type, community age, sensitive species, etc. These sensitive areas often coincide with areas that have a higher level of biodiversity. Because of this, activities that now occur, and that may occur in the future, will be evaluated for the level of disturbance (degree of compaction, trampling, noise and the regularity of these disturbances, etc.) that may be placed on the community in question. This process will help to protect the sensitive features that exist and work to encourage the development of others in the future.

NATURAL COMMUNITIES

FORESTED COMMUNITIES	
Deciduous (FOD), Coniferous (FOC) and Mixed Forest (FOM)	CLOCA will continue to conserve and manage the existing forested areas for their biodiversity. Management may include both passive and active rehabilitation efforts and will include: <ul style="list-style-type: none"> • invasive species management • planting • removal of the low ropes course • allowing natural succession • improvement cuts
WETLAND COMMUNITIES	
Mixed (SWM) and Coniferous Swamp (SWC)	Forested swamp communities will be managed for size and quality in an effort to improve biodiversity. General management strategies that will be required to improve the health of affected treed swamp communities include: <ul style="list-style-type: none"> • beaver activity will be monitored • mitigation techniques are currently being discussed with Hydro One's Forestry Services (within hydro corridors).

WETLAND COMMUNITIES (continued)	
Thicket Swamp (SWT)	Hydro One, in partnership with CLOCA, manages the thicket swamp communities because they fall within the hydro corridor easement. CLOCA is currently working with Hydro One to establish a “co-operative right of way agreement”. This agreement will outline an appropriate list of species that can be planted and managed under the power lines, cutting procedures and herbicide use guidelines for these areas.
Submerged Shallow Aquatic (SAS)	Over time, this pond has developed into a reasonably diverse area from both a vegetation and wildlife standpoint. This area will be managed in a way that promotes diversity. This will include monitoring the beaver activity in the area and monitoring the culvert on the east end (outlet) to ensure that it does not fail over time.
CUTURAL COMMUNITIES	
Cultural Plantation (CUP)	CLOCA intends to manage the cultural plantations in a way that improves and enhances the biodiversity within these communities. In many cases, improving the health and diversity within these monocultures means gradually opening up the canopy so that other deciduous and coniferous tree species have an opportunity to establish themselves. The following is a list of the general management strategies that will be required to improve the health and diversity of the cultural plantations: <ul style="list-style-type: none"> • invasive species management • timber management for the purpose of increasing biodiversity • allowing natural succession • promote the development of a diverse understorey
Cultural Woodland (CUW)	Cultural woodlands will be managed in a way that promotes succession into a forested community. The following is a list of the general management strategies that will be required to improve the health of cultural woodlands communities: <ul style="list-style-type: none"> • invasive species management • disturbance levels will be monitored and managed on a case-by-case basis • enhancement through plantings
Cultural Thicket (CUT)	CLOCA is currently working with Hydro One to establish “co-operative right of ways”. This agreement will outline an appropriate list of species that can be planted, cutting procedures and herbicide use guidelines for these areas. Thickets that lie outside of the Hydro One power line corridor will gradually be converted into forested communities. Management will be similar to that suggested for cultural woodlands; however, cultural thickets may require more extensive tree planting efforts as they currently contain less than 35% tree cover.
Cultural Meadow (CUM)	Management of the cultural meadow areas will involve one or a combination of management alternatives. CLOCA intends to manage and maintain a small amount (less than 10%) of the existing grassland habitat in order to better duplicate the diversity that was possibly present in the area before European settlement. Those cultural meadow communities that are small and largely encircled by forested communities will gradually be converted into treed areas. Because of their location within the landscape, these meadows would better contribute to the natural heritage system by adding to a continuous forest as opposed to fragmenting the adjacent forested area. Within a portion of the area that will remain as managed meadow, prairie/savanna reconstruction may be feasible. Prairie/savanna reconstruction would contribute to the recovery effort of these vegetation communities as well as provide an additional area for research and education. To maintain these areas a disturbance cycle will be required, involving periodic cutting or burning of the grassland. Without a disturbance regime, the grasslands would slowly be lost over time as shrubs and trees colonize the meadow.

NATURAL COMMUNITIES: VEGETATION HEALTH

Invasive Species	Management of invasive species will be prioritized and addressed. Emphasis will be placed on minimizing the spread of invasive species into unaffected areas, and reducing the likelihood of further introductions of non-native species.
Poor Shape	Communities that exhibit poor shape will be managed in a way that allows them to become incorporated into adjacent forested communities. Those communities that are surrounded by similar vegetation cover (forest cover in particular) will be left as is because their shape does not affect, but rather contributes to the amount of interior habitat at a landscape level.
High Disturbance	High disturbance scores are indicative of disturbances from a number of different sources. Because the main source of disturbance varies considerably, disturbances will be managed within each community on a case-by-case basis. This includes: <ul style="list-style-type: none"> • beaver activity will be monitored • cultural plantation management • invasive species management • trail side plantings • removal of low ropes course • disturbances associated with the landfill will continue to be monitored
Reproductive Viability	CLOCA will continue to increase the size of forested communities when and where opportunities arise. All areas will be managed in a way that keeps disturbances to a minimum so that community diversity increases with age.

RESOURCE MANAGEMENT: Specific management

Firebreaks	CLOCA is currently working with the Municipality of Clarington Emergency Services Department to develop an emergency strategy for Long Sault Conservation Area. Those firebreaks that are deemed important to the emergency strategy will be maintained at appropriate standards. It should be noted that protection of the natural heritage features will continue to be of the highest priority throughout the development of this emergency strategy; however, public safety (and property) in emergency situations will also be of utmost importance.
Forest Interior	Forest interior is a specialized type of wildlife habitat located at least 100 m from the forest edge. CLOCA will make every effort to maintain and increase forest interior areas. Rehabilitation efforts will eventually contribute to forest interior creation as the communities develop. Trails will be maintained to a maximum width of 2-3 m. Trailside plantings will be undertaken in areas where this width is being exceeded. Continual monitoring of invasive species, forest interior bird species (through the Forest Bird Monitoring Program) and trail use will be required to ensure that the health of interior habitats are not declining.
Beaver Management	Beavers will not be actively managed because their presence and activities are part of the natural system. In situations where public safety is jeopardized or infrastructure is threatened, beaver management strategies will only be considered when all other measures have been exhausted.
Bluebird Box Program	CLOCA will consider increasing the current bluebird nesting box program. Eastern Bluebirds have recently been removed from the provincial list of vulnerable species. CLOCA will continue to contribute to this recovery effort by maintaining the existing nest boxes that are currently used by Eastern Bluebirds and will also increase the number of boxes available in the future. Expansion of the program will be limited to the availability of meadow and thicket habitats. CLOCA also intends to initiate discussions with local community groups to see if there is any interest in establishing a monitoring and maintenance partnership. Community involvement in this program would contribute to CLOCA's educational mandate and would provide community groups with an interesting and informative activity.

TRAIL USE: Access And Resources

Dog Access	Authority regulations stipulate that dogs are to remain on a maximum 2 m leash at all times within conservation areas. Dog owners are also responsible for the clean up and disposal of dog droppings (which can include moving dog droppings off the trail as a minimum requirement). These rules will continue to be enforced. Appropriate signage may be considered at trailheads. If these regulations are not abided by, alternatives may include a complete ban of dogs as a last resort.
Horse Access	Horses are currently banned from all Conservation Areas within CLOCA's jurisdiction. This ban will continue to be enforced. Signage may be considered at trailheads, especially at access points adjacent to the Oak Ridges Trail.
Motorized Vehicle Access	Motorized vehicles (except for emergency or maintenance vehicles) are currently banned from all Conservation Areas within CLOCA's jurisdiction. This ban will continue to be enforced. Appropriate signage may be considered at trailheads especially at access points along the northern boundary of the property.
Reduce/Monitor User Conflicts	CLOCA has responded to a number of user conflicts that have arisen over the last few years and has tried to resolve these through a number of means including improved signage, visitor education, trail reconfigurations, public meetings, open forum discussions and enforcement. CLOCA will make every effort to anticipate potential user conflicts. In cases where conflicts arise, CLOCA will actively work to resolve the issue by evaluating the recreational activities in question and by bringing the various groups together to discuss possible options. Conflict resolution will be dealt with on a case-by-case basis.
Directional Signage	Signs are used to alert and inform the public about restricted/permitted uses, trail information (e.g. trail routes, direction of use, closed trails, caution information, educational material, general CLOCA policy and time-specific information). CLOCA will continue to update, improve, and install appropriate signage where a need has been identified or opportunities arise. Signage will be used primarily for three main purposes: natural heritage protection, public safety and public education. While signs may be important in publicly accessible natural areas, CLOCA will continue to be judicious with their installation so that the area does not become "cluttered".
Garbage Cans and Picnicking Facilities	CLOCA does not regularly provide garbage cans or disposal areas because these sites are often used as public dumping grounds for household garbage. As a result, garbage cans will not be installed at this time. Signs that remind visitors to "leave with what they came with" could be installed in areas where litter is, or becomes, a problem. Picnic tables will continue to be made available at the trailhead near the main parking area only. CLOCA does not intend to expand the picnicking area, as demand does not seem to warrant it.
Unofficial Trails	In addition to the extensive official trail system, unofficial trails exist. Visitors are using many of these unofficial trails regularly. The unofficial trails include closed trails (closed because of disturbance issues or because sections passed through private property) and those trails that have been created as shortcuts or to gain access to interesting lookouts or features. CLOCA will rehabilitate unofficial trails and actively discourage their use in locations where they pass through sensitive and ecologically important areas, and incorporate some existing unofficial trails into the official trail system where possible.
Trail Connections	New trail connections will be considered when there are opportunities to connect previously separated trail loops, especially in an east-west direction. Trail placement, design and construction will consider natural heritage protection first, and then ensure that public safety is not jeopardized. There is currently a good opportunity to provide a connecting trail across the property recently purchased with the support of the Oak Ridges Moraine Foundation (Wiseman Tract). This trail connection will connect the east and west trail systems currently in place. This trail will be routed in a way that minimizes the disturbance to forest interior habitats, reduces the occurrence of invasive species, avoids highly ecologically important and sensitive areas and ensures that public enjoyment of the trail system is improved.

TRAIL USE: Access And Resources (continued)

Bluebird Trail (wetland portion)	<p>The goals of this management plan suggest that the natural heritage features within the area be protected and that public use be allowed only if it is complimentary to the first goal. The wetland portion of the Bluebird Trail provides an example of where public use is negatively affecting portions of the areas sensitive natural heritage features and is therefore not considered to be complimentary at this time.</p> <p>CLOCA has acknowledged the fact that disturbances could be reduced with the construction of a proper boardwalk through the sensitive wetland area. At this time, CLOCA does not have the available financial resources to put towards the construction and maintenance of a boardwalk.</p> <p>CLOCA has proposed that the wetland portion of the Bluebird Trail be closed to the public and that a temporary trail connection be constructed to the north through less sensitive cultural pine plantation areas. If funding becomes available for construction and long-term maintenance, a boardwalk could be constructed along the current wetland trail segment.</p> <p>Access restrictions will continue on the Bluebird Trail (pedestrians only) until such time that the trail is rerouted, or a boardwalk can be constructed. Mountain bike access to this trail loop will be reevaluated at that time to determine whether or not access restrictions are still warranted.</p>
ORT Access Points	<p>The Oak Ridges Trail (ORT) runs along the northern boundary of the Conservation Area. A signed access point to the trail system from the ORT will be provided. CLOCA will also work with the ORT Association to promote “side-trail” opportunities and to inform the public as to why certain activities permitted along the ORT are not allowed in the Conservation Area (e.g. no horseback riding). Informational signage will be provided at this access point to inform visitors to the area about the trail system, rules and regulations and any additional interpretive information.</p> <p>An additional access point would be considered in the future on the eastern side of the property if demand from ORT users were sufficient enough to warrant it. Parking facilities will also be considered in the future at the northwestern access point if it is warranted due to sufficient demand.</p>
Poison Ivy Control	<p>The trail network is currently on a maintenance regime to control the growth of poison ivy within the trails and along their edges so that public safety is not jeopardized. Maintenance involves a dual approach, including mowing and if necessary herbicide spraying. This maintenance program will continue along official trails only. The public should be aware that CLOCA has no intentions of controlling poison ivy outside of the official trail system as it is a native plant that is common along this portion of the Moraine.</p>
Separate Trails for Different User Groups	<p>CLOCA does not intend to change the trail access policies that currently exist in the Conservation Area. Mountain bikes will continue to be restricted from the Bluebird Trail. As discussed above, access restrictions for the Bluebird Trail will be reevaluated after such time that the trail is rerouted or the boardwalk is constructed. CLOCA will make every effort in the future to anticipate potential user conflicts that may arise between the various user groups. Conflict resolution will be dealt with on a case-by-case basis.</p>
Viewing Platforms	<p>The area does not have any viewing platforms at this time. Unofficial trails exist in a number of areas where it appears that visitors have been trying to access high points of land with good views to Lake Ontario. CLOCA will seek partners to design, build and maintain lookouts as opportunities arise.</p>
Trail Erosion	<p>Trail erosion will be addressed largely through the construction of erosion control structures on the trail. The extent and number of these structures will depend entirely on the extent of trail erosion, the impacts to the surrounding natural heritage system and the safety of the public. In areas where erosion poses a serious problem, trail realignment may be considered. Trail realignment will be subject to the same trail placement procedures outlined in the Long-term Concept Plan.</p>
Access to Potable Water	<p>Potable water will not be provided in the near future. Provincial drinking water standards are extremely stringent when water is provided to the public for consumption. Well construction and monitoring costs, coupled with low demand, means that providing potable water to the public is not a reasonable option at this time. CLOCA will investigate the possibility of partnering with other groups and/or agencies if demand for access to potable water increases substantially.</p>
Interpretive Signage	<p>Interpretive signage is currently limited to the information kiosk at the main parking area within Long Sault Conservation Area. CLOCA will work to provide additional interpretive signage as funding opportunities arise.</p>

TRAIL USE: Access And Resources (continued)

Educational Programming	CLOCA will continue to provide educational programming that does not include the Low Ropes Course. The level of demand and type of educational programming required across the CLOCA jurisdiction will be re-evaluated through a market analysis in the future. This market analysis will determine whether there is sufficient demand to reconstruct a Low Ropes Course in a less sensitive area using less invasive techniques.
Unused Wells	CLOCA intends to properly abandon the unused farm wells within Long Sault Conservation Area. Funding support for these activities will continue to be investigated.

Research and Monitoring

In order to better understand the ecological processes involved in the maintenance of the flora and fauna species and communities in Long Sault Conservation Area, it is essential that research and ongoing monitoring be conducted. The data is essential for informed decision-making by CLOCA and in some cases until studies have been completed, definitive prescriptions cannot be made for particular plant and animal species. Research and monitoring will depend on available resources. CLOCA will support students or groups who are interested in conducting research or monitoring within the Conservation Area, or who are interested in contributing to efforts being carried out by the Authority.

Priorities for Research and Monitoring related to natural heritage features and functions and public use are included.

Development of Facilities and Services

CLOCA will ensure that development of facilities and services do not intrude on the landscape values of the Conservation Area and are consistent with the prescriptions of this Management Plan and other applicable plans.

Performance Indicators

Performance indicators provide a guide for evaluating if the management plan has been implemented, and if the objectives of the plan have been achieved. During the life of this plan, more detailed research and monitoring programs, policies or procedures approved by the CLOCA Board of Directors may be applied to the evaluation of this plan and its implementation. A number of performance indicators will be used when evaluating the plan's implementation and outcomes. Management of the Conservation Area will be monitored and evaluated with reference to these indicators.

Management Plan Review and Update

The life span of this management plan is intended to be 20 years from the date of approval by the CLOCA Board of Directors. In order to ensure that the plan continues to provide an adequate source of information on which to base management decisions and activities it will be subject to a five year review and will be updated to reflect new information, issues or concerns.

The recommendations found within this Management Plan are subject to change over the 20-year life span as a result of updated information or improved science, changes in public demand and pressure, and changes in the size of the property. Many of the recommendations will be subject to available funding resources and partnerships.