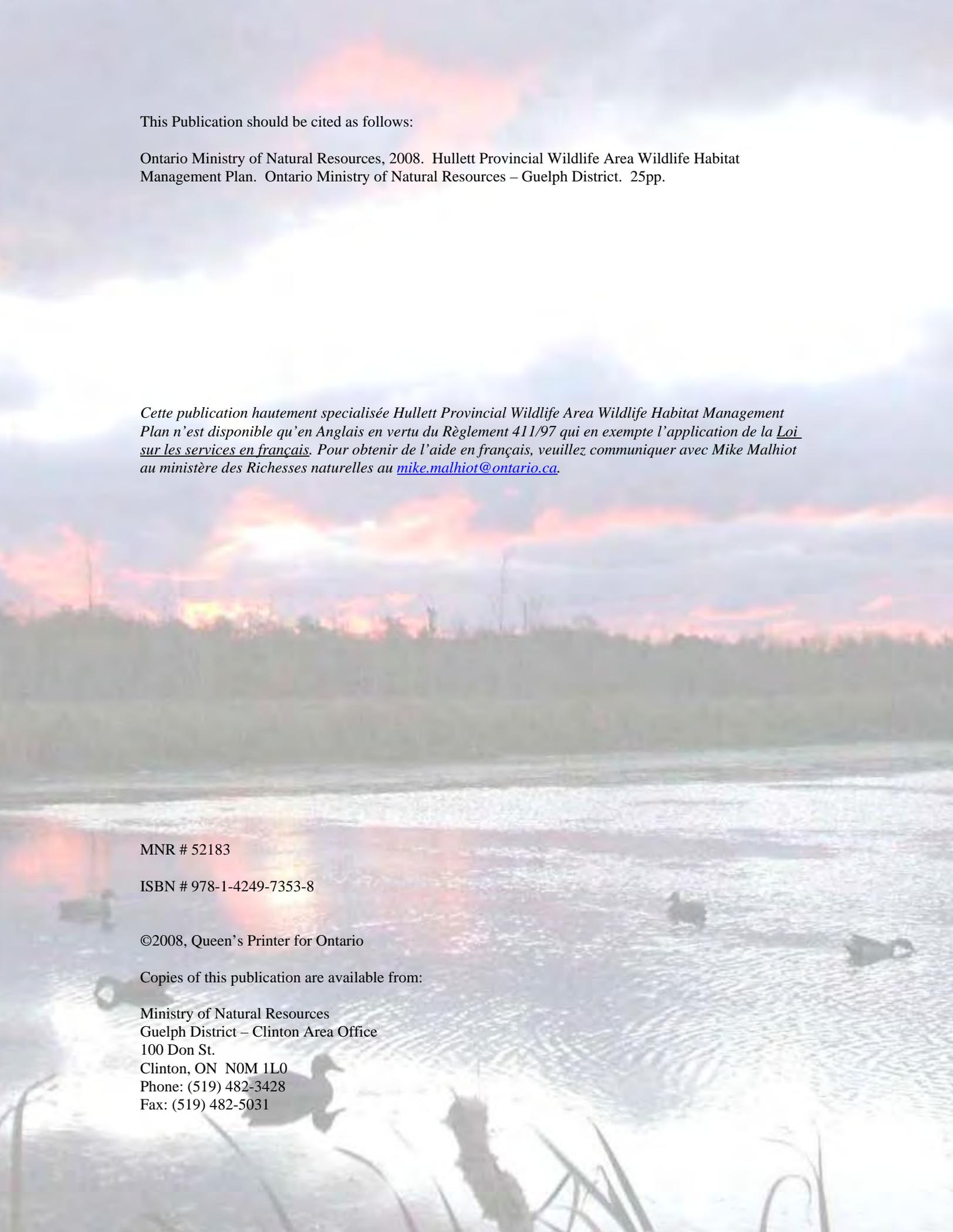




*Hullett Provincial Wildlife Area
Wildlife Habitat Management Plan*



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Copies of this publication are available from:

Ministry of Natural Resources
Guelph District – Clinton Area Office
100 Don St.
Clinton, ON N0M 1L0
Phone: (519) 482-3428
Fax: (519) 482-5031

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Summary

The Hullett Provincial Wildlife Area (HPWA) is a 2200 ha (5420 ac) property located in Hullett Township, about 5 km NW of Clinton, Ontario. The site has been developed as a major wetland habitat in partnership with Ducks Unlimited (Canada). A management plan was approved for the Area in 1985. It identified the goal of the HPWA: **to manage its resources to provide opportunities for high quality, wildlife-based, day-use recreational experiences for the people of Ontario.** The plan identifies 6 objectives, 4 of which deal with user activities on the property. The 2 objectives dealing with management of the resource include: **managing the area for waterfowl and a range of benefits to wildlife; and managing forests within the area for production of wood products, when consistent with the goal.** The first objective (waterfowl/wildlife benefits) was specifically identified as the highest priority of the 6 objectives listed in the plan.

The management plan does not provide details on how specific habitats will be managed. Consequently, the purpose of this Wildlife Habitat Management Plan is to identify how the Area's habitat features are to be managed to achieve the Area's goal and objectives. This plan is intended to establish long-term direction for land management decision-making, to identify what actions are needed, and to assist with determining priorities for operational implementation.

Résumé

La réserve faunique Hullett est un terrain de 2 200 ha (5 420 acres) situé dans le canton de Hullett, à environ 5 km au nord-ouest de Clinton, en Ontario. Cet important site a été aménagé en habitat humide en partenariat avec Canards Illimités (Canada). En 1985, un plan de gestion a été approuvé pour la réserve. Il déterminait l'objectif de la réserve : **gérer ses ressources de façon à offrir aux Ontariens et aux Ontariennes des occasions de vivre des expériences récréatives diurnes de grande qualité et liées à la faune.** Le plan précise six objectifs, dont quatre portent sur les activités des usagers dans la réserve. Les deux objectifs qui concernent la gestion des ressources sont : **gérer la réserve de façon à offrir une gamme d'avantages à la sauvagine et à la faune et gérer les forêts de la réserve pour la production de produits du bois, lorsque cela est conforme à l'objectif.** Le premier objectif (avantages pour la sauvagine et la faune) a été spécifiquement identifié comme la plus grande priorité des six objectifs du plan.

Le plan de gestion ne donne aucun détail sur la gestion des habitats particuliers. Par conséquent, le but de ce plan de gestion de l'habitat faunique est de déceler comment doivent être gérées les caractéristiques de l'habitat de cette zone pour atteindre les buts et les objectifs fixés pour la réserve. Ce plan vise à établir l'orientation à long terme du processus décisionnel en matière de gestion des terres, à voir quelles mesures sont nécessaires et à aider à déterminer les priorités qui doivent être mises en œuvre.

1.0 Introduction and Background

The Hullett Provincial Wildlife Area (HPWA) is a 2200 ha. (5420 ac) property located in Hullett Township, about 5 km NW of Clinton, Ontario. The site was identified in the 1960's for its potential to be developed as a marsh, thereby creating a major waterfowl habitat in southwestern Ontario. Hullett was developed during the late 1970's and early 1980's under a partnership agreement between the Ministry of Natural Resources and Ducks Unlimited (Canada). A master plan was approved for the Area in 1979, and was revised by a management plan in 1985. That plan identifies the goal, objectives and management principles of the Area, which continue to provide appropriate direction today.

The goal of the HPWA is **to manage its resources to provide opportunities for high quality, wildlife-based, day-use recreational experiences for the people of Ontario.**

The plan identifies 6 objectives, 4 of which deal with user activities on the property. The 2 objectives dealing with management of the resource include:

- **To manage the area for waterfowl and a range of benefits to wildlife; and**
- **To manage forests within the area for production of wood products, when consistent with the goal.**

The first objective (waterfowl/wildlife benefits) was specifically identified as the highest priority of the 6 objectives listed in the plan.

A variety of habitat management activities have been undertaken on the property over the past two decades and a number of new initiatives are either underway or being contemplated. The Hullett management plan does not provide details on how specific habitats will be managed. Consequently, the purpose of this Wildlife Habitat Management Plan is to identify how the Area's habitat features are to be managed to achieve the goal and objectives identified above. This plan is intended to establish long-term direction for land management decision-making, to identify what actions are needed, and to assist with determining priorities for operational implementation.

2.0 Resource Review

The HPWA consists of a diverse array of wildlife habitat highlighted by a man-made system of shallow marshes, and naturally occurring hardwood swamps along the floodplain of a 7.5 km. section of the South Maitland River. The impoundments are 636 ha. (1570 ac) in size and were created by the construction of 20 km of dykes. The floodplain is bordered by rolling uplands comprised of forest, open meadows, shrublands, and agricultural fields. Some fields that existed at the time of land purchase in the 1960-70's, were planted in hedgerows to create the open meadows and shrublands, and to connect existing woodlots. Better quality fields have been retained for agricultural land use. In addition to the South Maitland River, the site also contains several watercourses, which are primarily agricultural drains.

There are 10 habitat types at Hullett (Appendix 1 and Figure 1). The percentage composition of the main habitats are presented in the following chart, and the remainder of this section describes the ecological functions and current management of all 10 habitat types.

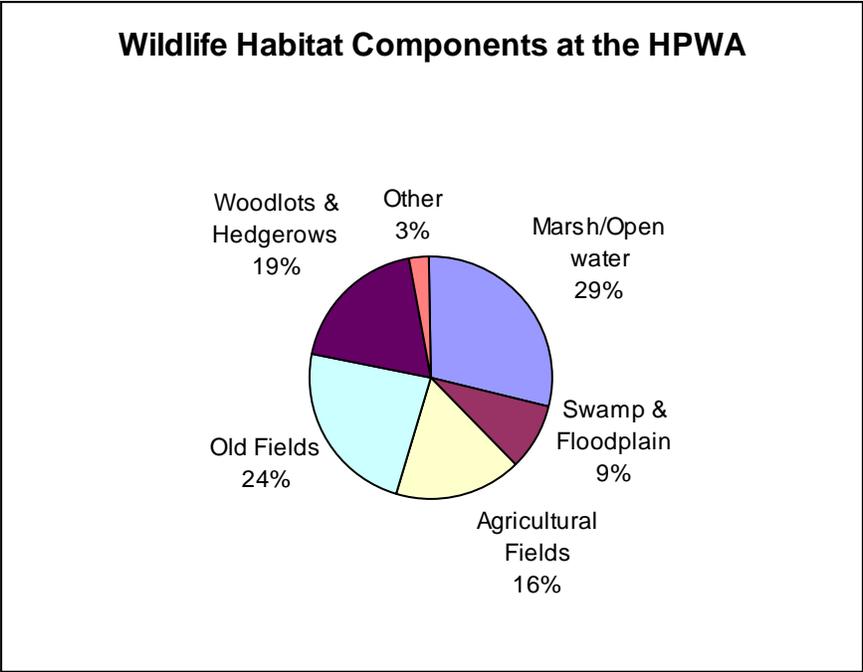


Figure 1.

2.1 Wetland Marshes

Agriculture and urbanization are the two main influences on the southern Ontario landscape that have promoted the loss of approximately 80% of the region’s wetlands. In some portions of Huron County, wetland losses have been higher. This outright loss, combined with the impairment of the ecological function of the remnant wetland base, prompts wetland restoration and enhancement projects such as the HPWA. These negative impacts paired with the opportunity to enhance the area for waterfowl habitat provided the motivation for the development of the HPWA in the 1960’s. In 1979, OMNR signed a 99-year agreement with DU Canada to design, construct and maintain the wetland habitat at Hullett. Work was implemented in several phases between 1979 and 1991 with the majority of the wetland habitats completed by 1983. The total wetland area in the HPWA is 832 ha (2055 ac) of which the dominant habitat type is marsh and open water which comprise 636 ha (1570 ac) (Appendix 1). These marsh habitats were established utilizing the on-site aquatic plant seed bank that was present prior to the development of the project. Water level management is an important component of maintaining wetland habitat quality and emulating natural wetland dynamics.

The HPWA and its associated marsh habitats provide a unique complex and diversity of emergent and submergent aquatic plant communities. These habitats range from seasonal depressional wetlands, to larger semi-permanent and permanent wetlands. Water levels within these wetlands are dynamic. Marshes provide one of the most productive habitat types for wildlife in southern Ontario. Hullett’s proximity to the Lake Huron shoreline enhances the PWA’s value to staging waterfowl and other migratory birds.



2.2 Wetland Swamps

Swamps, similar to wetlands in general, have undergone degradation and loss. Seasonally flooded woodlots and forested areas existed along the Maitland River flood plain prior to the establishment of the HPWA. These varied from areas inundated for only a few weeks during storm and runoff events, to areas impacted by beaver and associated dams. Similar in justification for the establishment of the marsh wetland type, forested and shrub swamps form an important component of HPWA. These managed swamp wetland habitat types represent 71ha (176 ac) of added wetland diversity to the overall complex. Several of the remnant and newly beaver-impacted swamps augment the managed swamps. Both managed and unmanaged swamps range from seasonally to permanently flooded basins. They vary in their species of vegetation, and the health of this vegetation ranges from live, stressed and to dead plant conditions. Seasonally flooded swamps provide habitats for a variety of species including amphibians that are dependent upon this habitat type for the breeding component of their life cycle. Management of these temporarily flooded habitats, along with shrub and permanently flooded swamps will maximize habitat diversity.

Swamps are an important habitat component within the HPWA and complement the overall wildlife value of the area. These wetland habitats can provide areas for unique species of wildlife including those considered rare, threatened or endangered.

2.3 Wetland Shrublands/Floodplain

A large area of wet shrubland and floodplain is located along the S. Maitland river, and the drainage ditches, although there are pockets of wet shrubland scattered throughout the property. This habitat type covers 123 ha (305 ac) of the property. Much of this land was pastured historically. It was abandoned prior to or at the time of government purchase, and since that time has been invaded by a variety of shrub and tree species.



These areas provide valuable wildlife habitat such as deer hiding cover, waterfowl loafing areas, and food sources for songbirds.

Ephemeral ponds created by melting snow or warm spring rains create breeding habitat for amphibians, and feeding areas for waterfowl. Also, these sites provide suitable conditions for the local population of Green Dragon, a plant species that has been listed as vulnerable by COSEWIC. The floodplain areas serve a valuable role in conveying floodwaters.

There has been no active management of these sites since the HPWA was established.

2.4 Watercourses

The watercourses in the HPWA consist of the South Maitland River and a number of drainage ditches. The flooded impoundments receive water from natural drainage on the site as well as several of the drainage ditches. The S. Maitland flows through the property and does not contribute water to the impoundments.

The S. Maitland is a warm water tributary of the Maitland R., and contains a fish population dominated by smallmouth bass. Forage species include members of the minnow, catfish, and sucker families. There have been reports of migratory salmonids moving through the site. The river provides wildlife habitat for ducks, turtles, muskrats and a variety of other aquatic species, by providing cover and travel routes.

No active management is conducted on any of the watercourses at Hullett.

2.5 Agricultural Fields

The agricultural lands consist of 361 ha (891 ac) of fields ranging from 2 to over 60 acres in size. These fields are well distributed throughout the property and play an important role in providing cover, nesting habitat and food to wildlife. The main crops cultivated are corn, beans, small grains and hay.



The use of the land is contracted to a farming operator every 5 years through a competitive bidding process. The contract specifies the percentage of the field areas that are to be cultivated by crop type. In the past there have been controls on the percentage of the crop harvested and left standing, the use of flushing bars on equipment, field crop rotations, and on the timing of harvesting operations. Some of these controls have been altered in recent years to generate greater income from the contract that help finance operational management of the Area.

Agricultural crops provide abundant food sources for deer, waterfowl, and other wildlife. A diverse mixture of crops provides an important feed source through most of the year. Spring feed is available from the winter wheat and hay fields. Summer feed is available from wheat, hay and bean fields. Fall feed is available from corn, hay and winter wheat fields. Hay crops, with their restrictive cutting dates, are managed specifically to provide high quality nesting cover for waterfowl. Corn also provides cover to wildlife such as deer during the summer and fall months.

2.6 Fallow Fields

At the time Hullett was purchased, the agricultural land base consisted of woodlots, as well as fields used for pasture, hay and field crops. Most of the pasture and hay fields, and some of the lower quality crop fields, were abandoned, either at the time, or a short period before the Area was established, and they have advanced into various stages of old field succession. Those fields now consist of open grasslands, shrublands, and early successional forest. They occupy 521 ha (1288 ac) or about 25% of the property. Many of the fallow fields have been strip mowed over the years in an attempt to revert succession to the grassland stage.

2.6.A Old Field Grasslands

The old field grasslands at Hullett provide nesting, feeding and protective cover for waterfowl, game birds, small mammals and songbirds. They are used by predators who feed on these species, as well as insects, reptiles and amphibians. The grasslands also prevent soil erosion and aid in filtering of substances from runoff.

2.6.B Upland Shrublands

The shrublands are dominated by non-tree species and are distinguished from early successional forest by the absence of species that will exceed 5 metres upon maturity. They consist of hawthorn, wild apple, red-osier dogwood, ninebark, and the non-native, common buckthorn. This habitat is especially important as a source of food and low ground cover for a great variety of wildlife. No active management of this habitat type has been undertaken at Hullett.

2.6.C Early Successional Forest

The idle fields were initially invaded by weeds and grasses. Where they abutted existing woodlands, tree species spread into them creating young stands of dominant hardwoods such as white ash and sugar maple. In other locations, sun-loving tree and shrub species initially invaded the grassland. The tree species include sumac, trembling aspen, Carolina poplar, and willow. If left without management, these areas will eventually be replaced with shade tolerant hardwoods.

2.7 Native Prairie Grasslands

Patches of native prairie grassland were once prevalent across southern Ontario within the once fire- dependent landscape. With the conversion of this historic interspersed forested and grassland landscape to one dominated by agriculture, few native prairie grassland habitats remain. In an effort to maintain the habitat diversity within the HPWA and provide robust grassland habitat for upland nesting waterfowl and other grassland dependent wildlife, DU planted 11 ha (28 ac) of native prairie grassland in 1999. These plantings were strategically located adjacent to wetland habitats and in areas appropriate in topography, soil type and moisture regime. The sites are being monitored for stand and future management will include occasional prescribed burns or mowing to maintain grassland quality.



Native prairie grasses provide a cost effective, sustainable, open meadow habitat type to complement the existing habitat diversity of the HPWA. These native grasses provide robust residual cover that is resistant to snow compaction and thus provides important cover during the early spring period. The habitat provided during the summer and fall periods is of critical importance to many species of wildlife for breeding, foraging and cover. These species are representative of the fire dependent grassland habitats that historically evolved within the forested southern Ontario landscape. Remnant grasslands elsewhere in the area surrounding HPWA are of limited extent.

2.8 Dyketops

The creation of the Hullett PWA and the multitude of productive marsh and swamp wetland habitats currently found throughout the property were developed in part through the construction of a series of 8 independent wetland basins. This type of design was quite different from the conventional “reservoir” mentality of the day. The infrastructure required to implement the project consisted of a series of earthen dykes constructed at elevations designed to impound desirable water levels and restrict excessive flooding associated with the Maitland River and flooding events. Subsequent to the installation of water control structures and construction the dyke tops were seeded with a tame grass/legume mixture to stabilize the bare soils.

The dyketops provide valuable wildlife habitat for species associated with grassy upland areas and are generally quite productive due to their close proximity to wetland habitat. The edges of the dykes provide foraging habitat for wetland dependent amphibian species and nesting habitat for waterfowl and other ground nesting birds. Mammalian species and waterfowl (especially Canada geese) utilize the dyketops as foraging habitat and as travel corridors between habitat types.

Management of the dyketops includes maintenance to ensure structural integrity and is typically comprised of repair work on eroded portions (caused by wave erosion, muskrat burrowing etc.) with either earthen material or rock when and where required. The annual mowing of a walking trail through the grass cover on the dyketops is conducted to increase the public’s recreational use and enjoyment of the PWA. Future maintenance may include the removal of shrub and tree growth along the side slopes of the dyke that may threaten their integrity.

2.9 Hedgerows

Hedgerows function in several different capacities. They connect woodlots and allow travel corridors for wildlife. They provide interspersion of habitat types, reduce field size and provide more “edge” habitat where wildlife like to feed. As well, the coniferous hedgerows provide excellent winter cover for some wildlife and the deciduous hedgerows provide buds and berries for food.

The planting of hedgerows at Hullett began in the late 1970's and continued through the early 1980's. The tops of larger conifers have been cut in order to keep them from growing too tall and some cutting has occurred to prevent the rows from spreading out too wide. Unfortunately, one of the species planted was autumn olive which has proven to be highly invasive. Future management will have to address the concerns of the spread of the autumn olive.



2.10 Upland Woodlots

The upland forest cover on the site consists primarily of mixed woodlots of sugar maple, beech, white ash, black cherry, and basswood. There are also several stands of hemlock, birch and white cedar, which occur on sites varying in wetness. The total coverage of mature woodlot is 380 ha (938 ac).

The total area of forest cover at Hullett is 694 ha (1714 ac) which includes woodlots, swamp, shrublands, early successional forest and hedgerows. This represents about 32% of the property.

Upland woodlots are important environments for most terrestrial wildlife. In Huron County, land-clearing since settlement times, has reduced upland forest cover to less than 10% of the land base (Huron County's total forest cover including swamps is about 18%). Forest birds are commonly used as indicators of the quality of a forest because their habitat requirements have been well researched, and they are easily surveyed. Forest bird species will increase in number to at least 35% forest cover (at a scale of at least 10,000 ha.) A 200 ha. forest patch has been shown to support over 80% of expected bird species on the landscape.

Some bird species avoid forest edges and require up to 200 m. of forest interior to successfully reproduce. Consequently, to accommodate these specific habitat requirements, a woodlot of 500 metres width would be required to provide a 100 metre band of interior habitat. No woodlots currently exist on the site that are 500 M in width, and only 3 offer any habitat located >200 M from a woodlot edge.

Game species that utilize upland forests at Hullett include white-tailed deer, raccoons, squirrels, cottontail rabbits, ruffed grouse, wild turkey, coyotes and red fox. Specialized habitats for these species would include den trees, and deer wintering areas.

At present, management of the upland forests has consisted primarily of allowing occasional timber harvesting, and the construction of squirrel tire nest boxes and brush piles.

3.0 Goal

The goal of wildlife habitat management at Hullett is:

To manage the land resources of the Hullett Provincial Wildlife Area to provide a diversity of high quality wildlife habitat.

4.0 Guiding Principles

There are a great number of possible approaches that could be taken in managing Hullett's large land base for the benefit of wildlife. To assist in establishing some direction for this plan, the following principles have been identified:

1. This plan recognizes and places priority on the resource management principles identified in the HPWA Management Plan (identified as items 1, 2, 3, 4 and 8 in that plan):
 - Emphasis will be on the management for spring and fall migrant waterfowl, and for waterfowl production. This priority impacts the management of water levels in the impoundments, and the management of grasslands to provide waterfowl nesting habitat.
 - Upland areas will be managed to provide suitable conditions for self-sustaining wildlife populations.
 - Habitat management will protect and enhance habitat for species at risk in accordance with the *Endangered Species Act, 2007*.
 - Agricultural land use will continue on selected fields, and management will emphasize benefits to wildlife and Area operations.
 - Upland woodlots will be managed to provide wildlife habitat, timber harvests and aesthetic values to users.
2. Healthy ecosystems require a minimum of 30% forest cover, and at a landscape level, at least one forest patch of 200 ha., with a minimum width of 500 metres.
3. Wildlife benefit from a diversity of ecological communities, with a good interspersed of habitat types.
4. Agricultural land use is beneficial to some wildlife. At present, about 16% of the upland area at Hullett is in agriculture. This proportion of land use, and its interspersed across the site, is considered to be ideal.
5. Native species will be favored in management programs.
6. Economic returns from agricultural land rental, and forest products are acceptable as long as they don't have significant negative impacts on other management objectives.

5.0 Objectives and Strategies

Objectives and strategies are identified for each of the 10 habitat types. Appendix 5 provides additional details on the implementation of each strategy.

5.1 Wetlands-Marsh

OBJECTIVE:

- Maintain the existing quantity of high quality marsh habitat and provide the following benefits:
 - a migration corridor stopover for staging waterfowl and other waterbirds;
 - breeding habitat for wildlife species including several designated as species at risk;
 - high marsh productivity through a diverse and well interspersed assemblage of vegetative communities; and
 - the conservation of water within the watershed by contributing to flood attenuation and water quality improvement.

STRATEGIES

- Monitor aquatic vegetation and water levels annually to assess habitat quality;
- Manipulate water levels, including full drawdowns, to enhance wetland habitat quality;
- Prevent and control problem wildlife, using non-lethal methods where possible, that significantly impact on habitat, especially beaver and muskrats (due to dyke and vegetation damage); and
- Provide and maintain a suitable number of nest structures.

5.2 Wetlands-Swamp

OBJECTIVE:

- Maintain the existing swamp habitats and provide the following benefits:
 - a migration corridor stopover for staging waterfowl and other waterbirds;
 - breeding habitat for wildlife species including several designated as species at risk;
 - the conservation of water within the watershed by contributing to flood attenuation and water quality improvement;
 - add to the aquatic diversity of the abundant marsh habitat at Hullett and increase the habitat value to wildlife communities;
 - provide habitat for a unique array of species that are not associated with other wetland habitat types; and
 - Provide revenue from the sale of forest products, as long as harvesting is consistent with the goal of the Hullett management plan



STRATEGIES:

- Manage water levels within the larger marsh habitats to seasonally inundate forested and shrub fringes;
- Regulate water levels within seasonally flooded areas to extend the duration of flood using water control structures;
- Use preventive measures to manage impacts of beaver and, when necessary, manage beaver populations to accommodate swamp habitat quality and quantity;
- Investigate the need and potential for swamp restoration (e.g. in whitetail swamp) such as plantings, water level manipulations, cuttings and site preparation.
- Allow timber harvesting on a suitable schedule. Harvesting will occur in a manner that maintains or enhances forest species composition, and minimizes site disturbance in accordance with “A Silvicultural Guide to Managing Southern Ontario Forests”

5.3 Wetland Shrublands/Floodplains

OBJECTIVE:

- Allow these areas to continue to undergo ecological succession, and provide benefits for wildlife and floodwater conveyance.

STRATEGY:

- Allow natural processes to continue without active management

5.4 Watercourses

OBJECTIVE:

- Improve upon and maintain waterways in a manner that promotes a healthy diversity of fauna and flora

STRATEGY:

- Maintain or establish vegetated buffer strips between agricultural fields and watercourses.

OBJECTIVE:

- Ensure that waterways do not adversely affect the conveyance of water

STRATEGIES:

- Provide for the maintenance of conveyance capabilities.
- Stabilize eroding banks and control any sources of sediment.



5.5 Agricultural Fields

OBJECTIVE:

- Maintain the existing amount of agricultural land on the property (about 16% of the land base), and manage it to provide habitat for wildlife by supplying hiding and nesting cover, a source of food and as lure crops to reduce crop depredation on neighbouring properties.

STRATEGIES:

- Ensure cropping practices provide benefits to wildlife by:
 - providing a minimum of 33% of the agricultural land in hay to provide nesting habitat
 - delaying the cutting of hay until July 15
 - ensuring a flushing bar is utilized to protect nesting wildlife
 - practicing conservation tillage and incorporating no tillage wherever possible
 - leaving corn stalks in fields (i.e. no silage harvesting)

OBJECTIVE:

- Utilize the land base productively for agricultural crops and provide revenue from land rental, which is used to finance the operational costs of land management and public services for the Area

STRATEGY:

- Continue to manage the lands through an agricultural contract

OBJECTIVE:

- Undertake good agricultural stewardship practices to achieve a healthy environment and demonstrate the compatibility of agriculture and wildlife

STRATEGIES:

- Monitor to ensure the agricultural contractor complies with applicable regulations for nutrient management and pesticide application
- Ensure cropping practices promote a healthy environment by following Best Management Practices (BMP's) that deal with:

- rotating crops to maintain a healthy soil structure
- proper management of manure, nutrients and pest control
- conservation tillage
- maintaining or establishing vegetated buffer strips along watercourses and wetlands

5.6 Fallow Fields

OBJECTIVE:

- Manage the abandoned fields to achieve a mixture of about:
 - 40% grassland: (about 515 acres)
 - 40% shrubland (about 515 acres)
 - 20% early successional forest: (about 260 acres)



STRATEGIES:

- Individual fields will be managed as discrete units, and management actions will be implemented to achieve the ratios identified above
- Grassland areas are to be located near wetland areas to maximize their benefits to nesting waterfowl
- Early successional woodlots will be located near existing woodlots or hedgerows to maximize their connectivity with other habitat types

5.6.A Old Field Grasslands

OBJECTIVE:

- Maintain 40 % of the area of an individual fallow field (about 10% of the property) in grassland, to achieve upland habitat diversity and provide nesting, feeding and cover areas for wildlife.

STRATEGIES:

- When tree or shrub growth exceeds the targets identified, remove them by mowing, burning, cutting or spraying and revert the site to grassland
- Evaluate the wildlife benefits of native grasslands (section 5.7), and if appropriate consider the planting of native species
- When grassland maintenance techniques are employed the application and timing will be sensitive to the needs of wildlife

5.6.B Upland Shrublands

OBJECTIVE:

- Maintain 40% of the area of an individual fallow field (about 10% of the property) in a variety of native upland shrubs, to achieve upland habitat diversity and provide nesting, and year-round feeding and cover areas for wildlife.

STRATEGIES:

- When shrublands become invaded by tree species, or mature to the point they lose their value for ground cover and food production, undertake corrective actions or remove them by mowing, burning, cutting or spraying and revert to grassland
- If species composition or diversity does not achieve the objective, plant more desirable species such as hawthorn, wild apple, elderberry, American high bush cranberry, dogwood, or nannyberry.

5.6.C Early Successional Forest

OBJECTIVE:

- Maintain 20% of the area of an individual fallow field (about 5% of the property) in early successional forest, to achieve upland habitat diversity and provide nesting, feeding and cover areas for wildlife.

STRATEGIES:

- Retain stands that provide unique benefits to wildlife (e.g. trembling aspen)
- If species composition or diversity does not achieve the objective, plant more desirable species such as sumac, trembling aspen, cedar and wild apple.
- When early successional forests advance to the point they lose their wildlife value, remove them and revert to an earlier successional stage. Indicators will include reduced species composition (especially dominance by maple/ash saplings), and the dominance by larger sized specimens.
- Maintain a diversity of stages of early succession by cutting aspen stands.

5.7 Native Prairie Grasslands

OBJECTIVE :

- Maintain the existing quantity of high quality native grassland and provide the following benefits:
 - Assist in maintaining and enhancing upland habitat diversity within HPWA.
 - Provide undisturbed quality grassland habitat in close proximity to wetlands during the waterfowl nesting period of May – July.
 - Provide positive benefits to water conservation and thus watercourse/wetland habitats.
 - Provide grassland habitat for a wide array of mammals, birds, herpetiles and insects.
 - Act as a demonstration / extension tool for private landowners interested in native prairie grasslands.

STRATEGIES :

- Monitor the quality of native grassland stands to assess species composition, weed content and density of stalks. When the quality of stands decline, periodic maintenance will be required.
- Maintenance of stands will be undertaken when required (about every 4-7 years) through the use of prescribed burning. A burn plan will be prepared in accordance with standard MNR procedures. In some cases, mowing or other techniques (eg grazing) may be considered. If replanting is required, weeds will be controlled subsequent to planting by utilizing herbicide and/or mowing.
- Monitor wildlife use of native grasses to determine if there is continued value in managing the existing plots, and assess whether other grassland habitats should be planted with native species.
- Once established, restrictions on activities within the grassland may be required to minimize disturbance to nesting waterfowl. Agricultural use of the grassland may be permitted, if it is of benefit for maintenance purposes as mentioned above.

5.8 Dyketops

Dykes are an integral physical feature at Hullett to enable water retention for the creation of wetlands. It's required that they be maintained in a grassland vegetative state to minimize soil erosion and provide vehicular access to the water control structures. Nonetheless, some options exist that allow these features to be managed to provide wildlife benefits.



OBJECTIVE:

- Manage grassland cover to be as productive as possible for wildlife.

STRATEGIES:

- Due to heavy use of the dykes by trail users, and the negative impact this has on nesting activities, efforts will be undertaken to discourage nesting activities on the tops of dykes. Mowing will be conducted annually on the tops of the dykes utilizing one pass with a 6 foot mower, in June and Sept (in June for the current year, and in Sept for the following year)
- Mowing or possibly burning on the sides of dykes will be undertaken only when necessary to control the invasion of woody shrubs, and will be conducted outside of the May 15-Aug 1 nesting season;
- All vehicular traffic will be restricted from the dykes, except as required for Area management, or as specifically authorized.

5.9 Hedgerows

OBJECTIVE:

- Continue to provide 20 km of hedgerows on the Area to provide cover and food, and ensure that those existing hedgerows that function as travel corridors are not removed

STRATEGIES:

- When hedgerows mature to the point they lose their value for ground cover and food production, remove and replace them. A mix of native conifers and food-producing shrubs will be planted (eg. hawthorn, wild apple, poplar, elderberry, American high bush cranberry, dogwood, nannyberry)

5.10 Upland Woodlots

OBJECTIVE:

- Contribute to a healthy landscape by maintaining a minimum of 30% of the Area in forest cover (includes upland woodlots, swamp, shrublands, early successional forest and hedgerows), and provide habitat for a diversity of wildlife, including mature forest birds, and game wildlife species



STRATEGIES:

- Develop management plans for specific wooded areas using 'A Guide to Stewardship Planning for Natural Areas' as a template.
- Identify and protect significant wildlife habitat as part of the above planning process (e.g. den trees at a density of 4/acre, deer wintering areas, mammal dens, heronries and stick nests)

OBJECTIVE:

- Manage one large contiguous woodlot of a minimum size of 60 ha. to provide forest interior habitat and old growth forest

STRATEGIES:

- Eliminate the cutting of trees and other forest disturbances in the area identified in Appendix 4.
- Reforest three fallow fields located in the designated area by planting or by allowing natural succession where it is well advanced

OBJECTIVE:

- Provide revenue from the sale of forest products, as long as harvesting is consistent with the goal of the Hullett management plan

STRATEGY:

- Allow timber harvesting on a suitable schedule. Harvesting will occur in a manner that maintains or enhances forest species composition, and minimizes site disturbance in accordance with “A Silvicultural Guide to Managing Southern Ontario Forests”

5.11 General

OBJECTIVE:

- Improve habitat for native wildlife species in all habitat types at Hullett

STRATEGIES:

- Provide habitat features which are limiting to some species (e.g. bird boxes, turtle nesting sites, osprey nesting platforms)
- Control invasive species (e.g. autumn olive, purple loosestrife, buckthorn, giant reed grass)
- Encourage participation in ecological inventory programs and apply the knowledge gained from those inventories to integrate where appropriate, and manage habitat for those species (eg. Breeding Bird Atlas of Ontario, Marsh Monitoring Program, Ontario Heronry Inventory, Ontario Herpetofaunal Survey, waterfowl banding program)
- Inventory vegetation communities and classify under the Ecological Land Classification for Southern Ont, (ELC) as the need or opportunity arises

OBJECTIVE:

- Utilize the unique diversity of ecological features and habitat types at Hullett to educate others and to demonstrate good land and resource management techniques

STRATEGIES:

- Produce educational literature and offer field tours of agricultural best management practices and wildlife habitat improvement techniques
- Establish demonstration sites with signage, especially near the perimeter of the property to influence the public on the benefits of good land management techniques (such as maintaining ephemeral wetlands, buffer strips etc)

OBJECTIVE:

- Protect, and where possible, improve habitat for species at risk in accordance with the *Endangered Species Act, 2007*.

STRATEGIES:

- Undertake habitat improvements projects to benefit species at risk (Appendix 2).
- Take into consideration the specific habitat requirements of species at risk when habitat manipulations are being planned, and incorporate these requirements into any manipulations, whenever possible.

6.0 Public Use Disturbance Factors

Public use activities at Hullett have an impact on wildlife habitat in a variety of ways. In keeping with the objectives of the Area and the strategies identified above, it is necessary to also identify methods of managing these activities, to minimize their potential impact on wildlife habitat.

The following activities have been and will continue to be restricted by the means identified:

Camping	-prohibited unless special permission obtained
Motorized vehicles	-permitted only on serviced roads and in parking lots -motor boats not allowed
Sanctuaries	-public access not permitted at any time
Vegetation Manipulation	-the cutting or removal of any plants is prohibited
Dog training/trialing	-no training or trialing permitted in: Zone A from May 15-Aug 1, and Zone B from May 15-Jul 15 -organized events require a permit from MNR. At present levels of activity, these controls seem reasonable. Should activity increase in the future, more controls may be necessary.
Horse riding	-horses are not permitted in Zone A from Oct 1-May 1
Snowmobiling	-permitted only on marked trails
Water Access	-water access is not permitted on the impoundments from May 15-Aug 1

7.0 Implementation Schedule

Appendix 5 provides details of when and how the strategies will be implemented, subject to annual funding approvals. Many of the activities are ongoing projects, however, other strategies will require further discussion, technical input and a cost assessment before implementation can occur. It is anticipated that decisions on these matters will occur at the annual operational meeting to develop the habitat management work plan for the Area.

Appendix 1. Current and Target Land Areas of Wildlife Habitat Components at the Hullett Marsh.

Wildlife Habitat Component	Existing			Target	
	Acreage	(Ha)	%	Acreage	Comment
Wetland					
Marsh	535	217	9.9		No change
-Open Water	1035	419	19.1		No change
Swamp	176	71	3.2		No change
Floodplain/shrublands	305	123	5.6		No change
Watercourses	4	2 (20 km)	0.1		No change
TOTAL	2055	832	37.9		
Upland					
Agricultural Fields	891	361	16.4		No change
Native Grassland	28	11	0.5		No change
Dyketops	37	15 (20 km)	0.7		No change
Old fields					
-grassland	720	291	13.3	515	About 10% of area
-shrubland	340	138	6.3	515	About 10% of area
-early successional forest	228	92	4.2	260	About 5% of area
Hedgerows	102	41 (19.2 km)	1.9		No change
Mature Woodlots	938	380	17.3	788	No change in total
-old growth forest	0	0	0	150	
TOTAL	3284	1330	60.6		
Facilities					
Roads	1	0	0		No change
Parking Lots	5	2	0.1		No change
Office	7	3	0.1		No change
TOTAL	13	5	0.2		
Incidental*	64	26	1.2		
GRAND TOTAL	5420	2194	99.9		

* Minor discrepancies in the digitizing of map layers resulted in an incidental area that is not categorized. This may be due to variations in the map layers, inaccurate mapping of road allowances or discrepancies between GIS lot lines and actual fence lines.

Columns may not total due to rounding.

Appendix 2. Species at Risk and Habitats of Concern at the HPWA

As of July 2008 (Subject to ongoing revision)

Species at Risk

Common Name	Scientific Name	COSEWIC Status (Canada)	ESA Status (Ontario)	Element Occurrence
American Chestnut	<i>Castanea dentate</i>	Endangered	Endangered	Resident (Introduced)
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Not at Risk	Endangered	Winter Migrant
Black Tern	<i>Chlidonias niger</i>	Not at Risk	Special concern	Resident
Butternut	<i>Juglans cinerea</i>	Endangered	Endangered	Resident
Golden Eagle	<i>Aquila chrysaetos</i>	Not at Risk	Endangered	Occasional Migrant
Green Dragon	<i>Arisaema dracontium</i>	Special concern	Special concern	Resident
Least Bittern	<i>Ixobrychus exilis</i>	Threatened	Threatened	Resident
Milksnake	<i>Lampropeltis triangulum</i>	Special Concern	Special Concern	Resident
Monarch Butterfly	<i>Danaus plexippus</i>	Special Concern	Special Concern	Resident
Peregrine Falcon	<i>Falco peregrinus</i>	Special Concern	Threatened	Irregular Visitor
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Threatened	Special Concern	Resident
Short-eared Owl	<i>Asio flammeus</i>	Special Concern	Special Concern	Resident

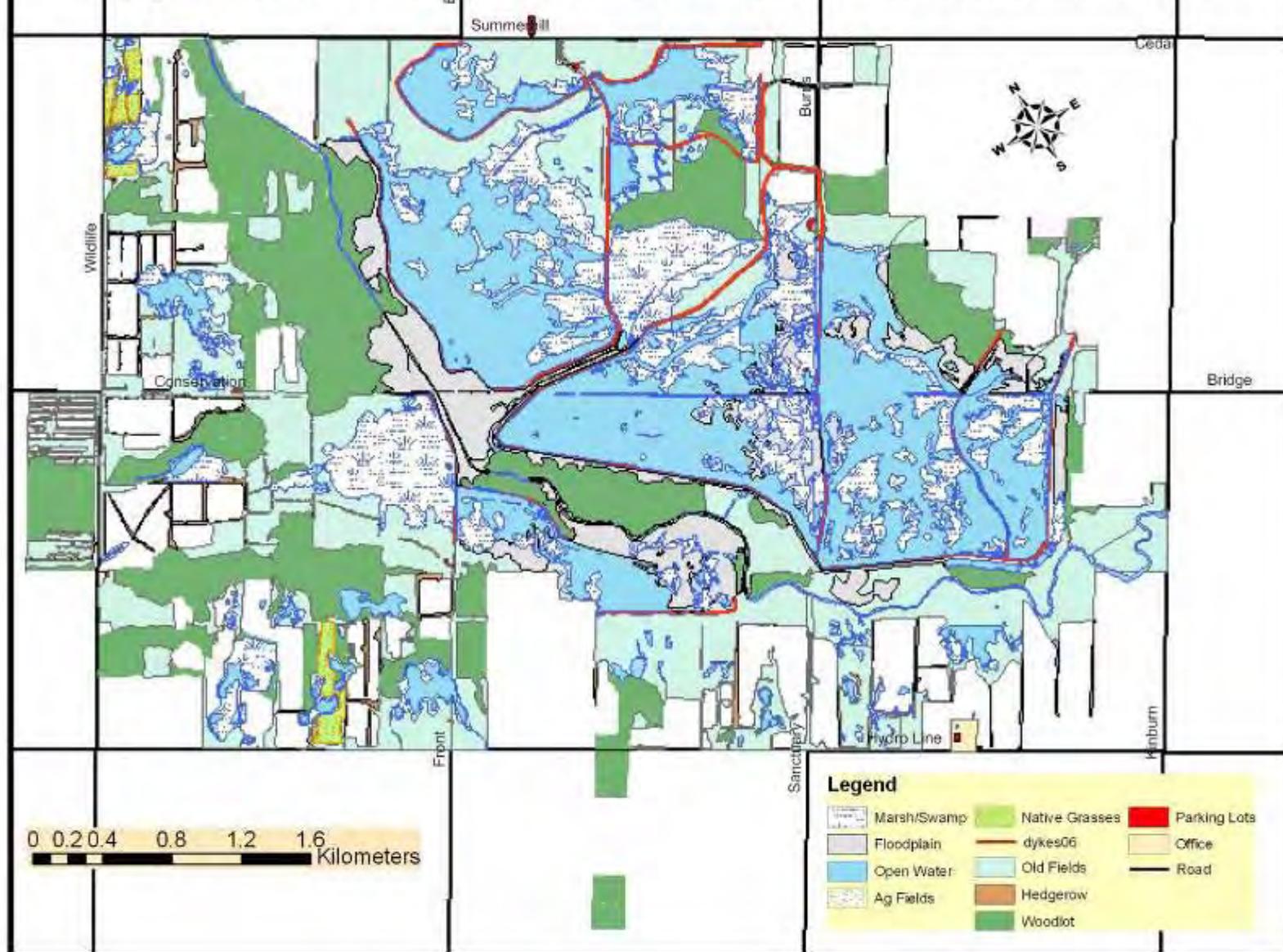
Species of Special Interest

Common Name	Scientific Name	COSEWIC Status (Canada)	ESA Status (Ontario)	Element Occurrence
Biennial Gaura	<i>Gaura biennis</i>	--	May be at risk	Resident
Great Egret	<i>Ardea alba</i>	--	May be at risk	Resident
Ruddy Duck	<i>Oxyura jamaicensis</i>	--	May be at risk	Spring / Fall Migrant
Canvasback Duck	<i>Aythya valisineria</i>	--	May be at risk	Fall Migrant

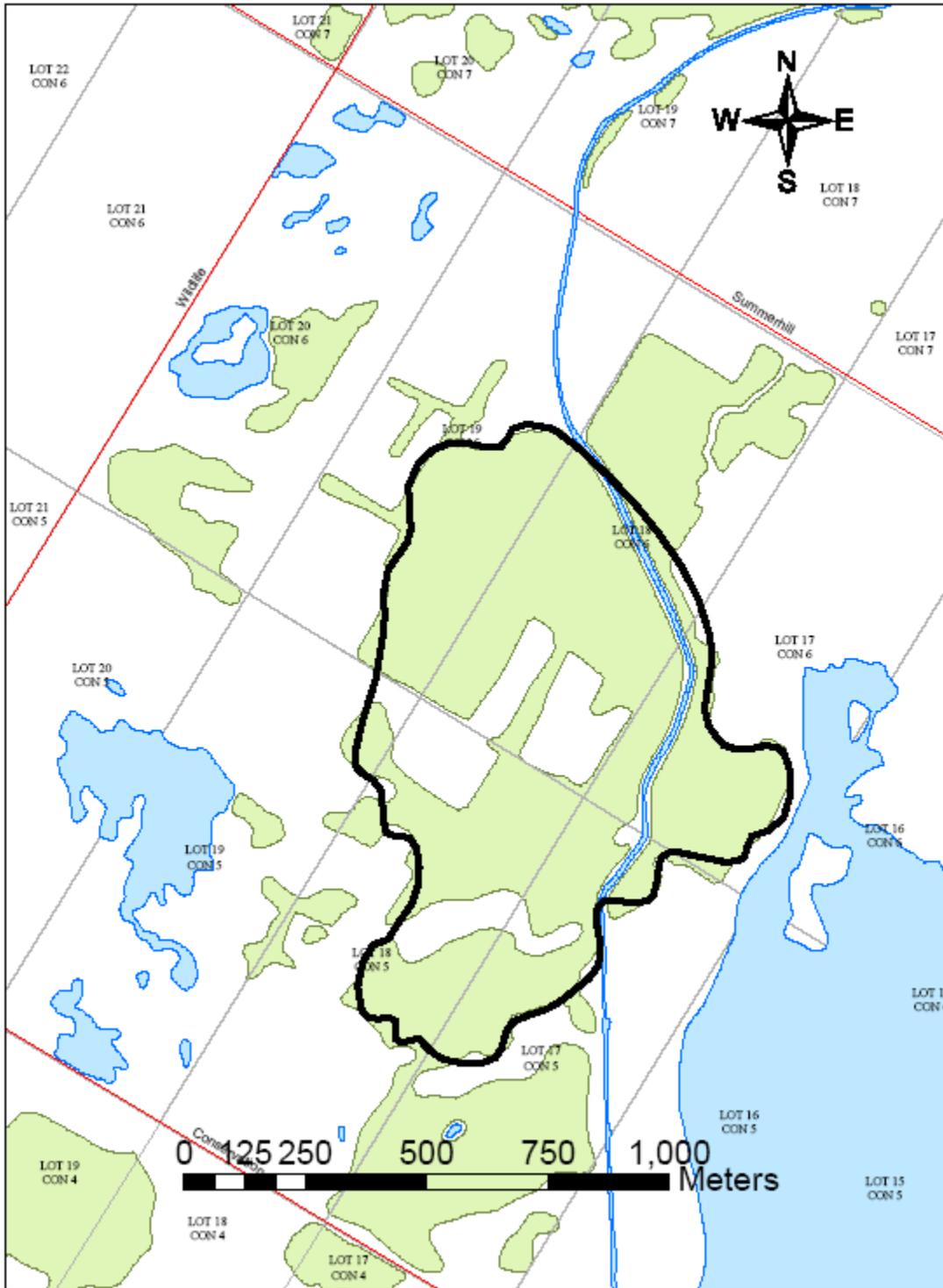
Habitats:

Tamarac Swamp - features many regionally rare species: Small Purple Fringed Orchid, Lady's-slippers, Bunchberry, Clintonia, Black Snakeroot, Indian Cucumber-root, Goldthread, and Cottongrass

Appendix 3. Habitat Features at the HPWA.



Appendix 4. Planned Old Growth Forest



Appendix 5. Implementation Schedule for the Habitat Management Strategies of the Hullett Provincial Wildlife Area.

Strategies	Timing		Priority			Schedule			Who To Do (L=Lead)					Comments
	annually	once	as needed	must do	should do	wish list	1-2 yrs	3-5 yrs	5-20 yrs	MNR	FOH	DU	Ag Cont	
5.1 Wetlands-Marsh														
Monitor aquatic vegetation and water levels annually to assess habitat quality	X			X			X	X	X			L		
Manipulate water levels (including full drawdowns) to enhance wetland habitat quality			X	X								L		
Prevent and control problem wildlife that significantly impact on habitat especially beaver and muskrats (due to dyke and vegetation damage)	X			X			X	X	X		X	L		X
Control invasive marsh plants that have a significant impact on habitat, especially purple loosestrife	X			X			X	X	X	X	X	L		X
Provide and maintain a suitable number of nest structures	X				X		X	X	X		X			
5.2 Wetlands-Swamp														
Manage water levels within the larger marsh habitats to seasonally inundate forested and shrub fringes.	X				X		X	X	X			L		
Regulate water levels within seasonally flooded areas to extend the duration of flood using water control structures.	X			X			X	X	X			L		
Manage beaver populations to accommodate swamp habitat quality and quantity.			X	X						X	L	X		X
Investigate the need and potential for swamp restoration (e.g. in whitetail swamp) such as plantings, water level manipulations, cuttings and site preparation.			X			X				X				

Allow timber harvesting on a suitable schedule. Harvesting will occur in a manner that maintains or enhances forest species composition, and minimizes site disturbance in accordance with "A Silvicultural Guide to Managing Southern Ontario Forests"

X X X L L

MNR lead on planning FOH lead on implementation

5.3 Wetland Shrublands/Floodplains

Allow natural processes to continue without active management

No action req'd

5.4 Watercourses

Maintain or establish vegetated buffer strips between agricultural fields and watercourses.

X X X L X

Provide for the maintenance of conveyance capabilities.

X X L X

Stabilize eroding banks and control any sources of sediment.

X X X L X

5.5 Agricultural Fields

Ensure cropping practices provide benefits to wildlife by:providing 35% of ag land in hay, delaying the cutting of hay until July 15; using a flushing bar, using conservation tillage, and leaving corn stocks in fields

X X X X X X L X

Continue to manage the lands through an agricultural contract

X X X X L

Monitor to ensure the agricultural contractor complies with applicable regulations for nutrient management and pesticide application

X X X X L

Ensure cropping practices promote a healthy environment by following Best Management Practices (BMP's) that deal with:crop rotation; manure, nutrient and pest mgmt; conservation tillage and maintaining buffer strips

X X X X L X

5.6 Fallow Fields

Individual fields will be managed as discrete units, and management actions will be implemented to achieve the optimal ratios identified above

X X L L

MNR planning lead on planning. FOH lead on implementation

Grassland areas are to be located near wetland areas to maximize their benefits to nesting waterfowl

X X L L X

"

Early successional woodlots will be located near existing woodlots or hedgerows to maximize their connectivity with other habitat types

X X L L

"

5.6.A Old Field Grasslands

When tree or shrub growth exceeds the targets identified, remove them and revert the site to grassland

X X X X X L L

MNR lead on planning. FOH lead on implementation

Evaluate the wildlife benefits of native grasslands (section 5.7), and if appropriate consider the planting of native species

X X X L L L

"

When grassland maintenance techniques are employed (e.g. mowing, burning, mulching, spraying), the application and timing will be sensitive to the needs of wildlife

X X L L

"

5.6.B Upland Shrublands

When shrublands become invaded by tree species, or mature to the point they lose their value for ground cover and food production, undertake corrective actions or remove them and revert to grassland

X X X X X L L

"

If species composition or diversity does not achieve the objective, plant more desirable species such as hawthorn, wild apple, elderberry, American high bush cranberry, dogwood, or nannyberry.

X X L L

"

5.6.C Early Successional Forest

Retain stands that provide unique benefits to wildlife (e.g. trembling aspen)

X X L L

MNR lead on planning FOH lead on implementation

If species composition or diversity does not achieve the objective, plant more desirable species such as sumac, trembling aspen, cedar and wild apple.

X X L L

"

When early successional forests advance to the point they lose their wildlife value, remove them and revert to an earlier successional stage. Indicators will include reduced species composition (especially dominance by maple/ash saplings), and the domina

X X X X X L L

Maintain a diversity of stages of early succession by cutting aspen stands.

X X X L L

"

5.7 Native Prairie Grasslands

Monitor the quality of native grassland stands to assess species composition, weed content and density of stalks. When the quality of stands decline, periodic maintenance will be required.

X X X X X L

Maintenance of stands will be undertaken when required (about every 4-7 years) through the use of prescribed burning. A burn plan will be prepared in accordance with standard MNR procedures. In some cases, mowing or other techniques (eg grazing) may b

X X X X X L

Monitor wildlife use of native grasses to determine if additional plots are desired and assess whether other grassland habitats should be planted with native species.

X X X X X L

Once established, restrictions on activities within the grassland may be required to minimize disturbance to nesting waterfowl. Agricultural use of the grassland may be permitted, if it is of benefit for maintenance purposes as mentioned above.

X X X X X L

5.8 Dyketops

Due to heavy use of the dykes by trail users, and the negative impact this has on nesting activities, mowing will be undertaken on the tops of the dykes (one pass with a 6 foot mower) in June and Sept to discourage nesting activities (in June for the curr

X X X X X L

Mowing or possibly burning on the sides of dykes will be undertaken only when necessary to control the invasion of woody shrubs, and it will be conducted outside of the May 15-Aug 1 nesting season;

X X X L

All vehicular traffic will be restricted from the dykes, except as required for Area management, or as specifically authorized.

X X X X X L

5.9 Hedgerows

When hedgerows mature to the point they lose their value for ground cover and food production, remove them and replace

X X X X X L L

MNR lead on planning FOH lead on implementation

5.10 Upland Woodlots

Develop management plans for specific wooded areas using 'A Guide to Stewardship Planning for Natural Areas' as a template.

X X X L

Identify and protect significant wildlife habitat as part of the above planning process (e.g. den trees at a density of 4/acre, deer wintering areas, mammal dens, heronries and stick nests)

X X X L

Eliminate the cutting of trees and other forest disturbances in the area identified in Appendix 4.

X X X X X L L

MNR lead on planning FOH lead on implementation

Reforest three fallow fields located in the designated area by planting or by allowing natural succession where it is well advanced

X X X X X L

Allow timber harvesting on a suitable schedule. Harvesting will occur in a manner that maintains or enhances forest species composition, and minimizes site disturbance in accordance with "A Silvicultural Guide to Managing Southern Ontario Forests"

X X X L L

MNR lead on planning FOH lead on implementation

5.11 General

Provide habitat features which are limiting to some species (e.g. bird boxes, turtle nesting sites, osprey nesting platforms)

X X X

Control invasive species

X X L X X

Encourage participation in ecological inventory programs and apply the knowledge gained from those inventories to manage habitat for those species (eg. Breeding Bird Atlas of Ontario, Marsh Monitoring Program, Ontario Heronry Inventory, Ontario Herpetofau

X X X X X L X X X

Inventory vegetation communities and classify under the Ecological Land Classification for Southern Ont, (ELC) as the need or opportunity arises

X X X X

Produce educational literature and offer field tours of agricultural best management practices and wildlife habitat improvement techniques

X X X L X X

Establish demonstration sites with signage, especially near the perimeter of the property to influence the public on the benefits of good land management techniques (such as maintaining ephemeral wetlands, buffer strips etc)

X X X L X

Undertake habitat improvements projects to benefit species at risk in accordance with the *Endangered Species Act, 2007* (Appendix 2)

X X X X L

Take into consideration the specific habitat requirements of species at risk when habitat manipulations are being planned, and incorporate these requirements into any manipulations whenever possible.

X X X X X L X X