

APPENDIX D

NATURAL AREAS DESIGNATION CRITERIA

Criteria	Description	Measure(s)
1. Designated Environmental Areas	Habitat blocks containing areas designated as Regional Environmentally Sensitive Areas (ESAs), Provincially Significant Wetlands (PSWs), Locally Significant Wetlands (LSWs), Provincially, Regionally and Locally Significant Areas of Natural or Scientific Interest (ANSIs) or other protective environmental designations (i.e., regulatory floodlines, shoreline protection areas and hazard lands).	<ul style="list-style-type: none"> • presence or absence of recognized designated environmental protection areas
2. Hydrological Importance	Habitat blocks containing areas having important hydrological functions including flood control, maintenance of water quality and natural hydrologic balance, groundwater discharge/recharge, and sediment and erosion control	<ul style="list-style-type: none"> • blocks with greater than 50% coverage by poorly drained soils fulfilled this criteria • blocks with greater than 50% coverage by well-drained soils fulfilled this criteria • blocks supporting floodplains, ponds or discharge zones also fulfilled this criteria
3. Site Condition	Habitat blocks containing relatively undisturbed natural communities.	<ul style="list-style-type: none"> • level of observed disturbance • relative proportion of native species
4. Habitat Diversity	Habitat blocks supporting a relatively high proportion of natural communities.	<ul style="list-style-type: none"> • the top 25% of all the habitat blocks with respect to numbers of natural ELC communities per block
5. Special Features	Habitat blocks containing significant landforms, species, communities or wildlife habitats.	<ul style="list-style-type: none"> • significant landforms • significant species • significant communities • significant wildlife habitat
6. Representation	Habitat blocks that contain good examples of the typical as well as less common array of fauna, flora, communities, soils and landforms present in the Town.	<ul style="list-style-type: none"> • gap analysis
7. Socio-Economic Value	Habitat blocks utilized by individuals or organizations for recreational, commercial, or spiritual activities.	<ul style="list-style-type: none"> • reports or evidence of activities

Criterion #1: Designated Environmental Areas

This criterion was selected to recognize the ecological importance of natural areas previously identified as significant at the Provincial, Regional and Local levels. The protection of these features is mandated by Provincial Policy, and therefore protection of them should form the basis of any Natural Heritage System developed for the Town.

Designated Environmental Areas (as listed in Section 4.2) include Regional Environmentally Sensitive Areas (ESAs), as identified in Brady (1980); Provincially and Locally Significant Wetlands (PSWs and LSWs), as determined in the OMNR; Provincially, Regionally and Locally Significant Areas of Natural or Scientific Interest (ANSIs) (NHIC 2002), and other protective environmental designations (regulatory floodlines, shoreline protection areas and hazard lands).

Habitat blocks containing ELC polygons that fall entirely or partially within these designated areas fulfil Criterion #1.

Criterion #2: Hydrological Importance

Natural areas play a critical role in limiting soil erosion, attenuating runoff, controlling groundwater discharge and recharge, and maintaining water quality and quantity. This role is all the more important in an urbanizing area where the hydrologic balance is being altered by the replacement of natural cover with impervious surfaces. For example, the ability of forested areas to reduce stormwater runoff has been examined extensively in the United States where studies have shown that leaving forested areas intact as a “non-structural stormwater management strategy” reduces the need for stormwater retention ponds and saves regions millions of dollars in infrastructure costs (American Forests 1999). The recommendations of these studies include recognizing the potential economic value of natural landscapes and incorporating natural resource information into the planning process. The application of this criterion recognizes their ecological importance and potential economic benefits in protecting natural areas with high water retention capacity.

Habitat blocks (a) with greater than 50% coverage by poorly drained soils, (b) with greater than 50% coverage by well-drained soils, or (c) supporting floodplains, ponds or discharge zones fulfilled Criterion #2. The biophysical characteristics of these areas serve to maintain hydrological balance, natural water storage, function in local or regional groundwater recharge, discharge and contribute to maintaining groundwater and surface water quality. These areas may also function in sediment, erosion and flood control. Specifically, areas with well-drained soils are considered to function as potential recharge areas, while areas with poorly drained soils are considered to function as potential discharge areas.

Criterion #3: Site Condition

Natural areas of “good condition” typically refer to sites in a relatively natural condition exhibiting a low level of disturbance (due to logging, agriculture, mineral extraction, utility corridors, residential development, industrial uses, recreational facilities, or other forms of development) and containing a relatively high proportion of native flora and fauna (Heagy 1995). These areas tend to be limited in urbanizing settings, particularly in southern Ontario where the overall landscape has been dramatically altered by agricultural and urban expansion over the past two centuries (Larson et al. 1999; Holland-Hibbert 1996). Protection of these areas is central to the creation of a sustainable Natural Heritage

System because these are the unique habitats that define Fort Erie's natural heritage. These habitats also serve as sources for desirable vegetation and wildlife that could move into nearby natural areas that are not of such good condition. Finally, these areas could serve as living "references" or "models" for any planned habitat creation and/or restoration.

Habitat blocks containing one or more ELC polygons of "high" site condition were considered to fulfil Criterion #3. Site condition was considered "high" if the relative proportion of non-native species was very low and the degree of human disturbance (e.g., number of trails, vehicle tracks, refuse dumping, and evidence of logging) was also very low.

Criterion #4: Habitat Diversity

Preservation of habitat diversity is recognized as another cornerstone in building a sustainable Natural Heritage System. The same rationale extends to this criterion as to the use of habitat blocks (rather than ELC polygons of distinct ecological communities) in a Natural Areas Inventory. Basically, protecting a mosaic of natural habitat types in contiguous blocks in a given landscape ensures protection of the range of natural ecological communities in the Town and thereby ensures habitat for a broader range of plant and wildlife species.

Habitat blocks containing a relatively high proportion (i.e., 3 or more) natural ELC communities were determined to have a high degree of natural habitat diversity and to fulfil Criterion #4. Notably, ELC polygons classified as semi-natural were excluded from this analysis. Although 3 may not seem like a high number of communities, given the relative homogeneity of ELC communities in the Study Area this number was determined to be appropriate.

Criterion #5: Special Features

Habitat blocks containing one or more significant landforms, species, communities or wildlife habitats fulfil Criterion #5.

Significant Landforms

Significant landforms are defined as unique or poorly represented on a national, provincial or regional basis, and include landforms that have a high potential for supporting important biotic features (provide ref). They include locally uncommon or rare features, such as dunes, beach ridges, springs, seeps, cliffs, and caves.

Significant Species

Significant species are all listed in the Plant Species List (Appendix B1) and the Significant Wildlife Species List (Appendix C) compiled for this Study. Both lists are based on the following selection criteria:

- designated as Vulnerable, Threatened or Endangered in Ontario (OMNR 2002)
- designated as Special Concern, Threatened and Endangered in Canada (COSEWIC 2002)
- have a global rank between G1 and G3 (NHIC 2002; NatureServe.org 2003)
- have an Subnational rank (S-rank) of S3 or lower (NHIC 2002)

The Plant Species List also includes those species:

- identified as Nationally, Provincially, or Regionally rare in OMNR Central Region (Riley 1989)

- restricted geographically within Central Region (Riley 1989)

The Plant Species List lists all vascular plant species identified in the Study Area. Sources of information included field data collected by Dougan & Associates during the summer and fall of 2002, as well as species occurrence data gathered from ESA studies and wetland evaluations. All plant species that meet one or more of the criteria are considered significant in the Town of Fort Erie and are depicted in bold type.

In addition to the global, national and provincial-scale criteria listed above, all wildlife species that the Ontario Ministry of Natural Resources tracks (ONHIC, 2002) were also included. Species actively tracked generally have fewer than 100 recent occurrences in Ontario, or are highly ranked globally. Some of them are only known historically and may be extirpated from the province.

Regional-scale criteria were only utilized for the selection of amphibians, reptiles and birds. An absence of documented information did not allow other wildlife groups to be assessed at this scale. For amphibians and reptiles, those species listed as "uncommon", "rare" or "very rare" in the former MNR 'Central Region' were included as significant species (Plourde et al., 1989). Both regional-scale and local-scale information was utilized in the selection of significant bird species. Local scale information was derived primarily from the 2002 wildlife inventories. For a complete discussion on which bird species were included and why, please refer to Appendix D. All wildlife species that meet one or more of the criteria, occur or potentially occur within the study area, are considered significant in the Town of Fort Erie and depicted in bold type.

Significant Communities

Significant communities include species assemblages or associations that are classified as Globally, Nationally, Provincially or Regionally Rare by COSEWIC/COSSARO/ NHIC/OMNR/ NatureServe.org. Communities which ranked S3 or lower (NHIC 2002) were considered to fulfill this criterion.

Forested units comprised of some proportion of 'old-growth' or mature forested areas were also considered to be significant communities. Although definitions of old-growth forest may vary depending upon tree species, generally these sites are characterized by having a large proportion of trees in older age classes, many of them over 120 years old. Other features of 'old-growth' communities include: a broad spectrum of tree sizes, an uneven canopy with scattered gaps, and abundant fallen logs in various stages of decomposition. These older, relatively undisturbed forests have the potential to support a high diversity of wildlife species (OMNR 2000). The following definitions were provided by Bruce Kershner (pers. comm., Nov 2002):

- Primary Old Growth forest is a site that has been continually forested since pre-settlement times, where trees greater than 150 years represent a significant percentage of the canopy.
- Secondary Old Growth forest is a site that has been settled or cleared and the regenerating forest now supports trees 100–200 years in age.

Significant Wildlife Habitat

Significant wildlife habitat is defined by the OMNR Significant Wildlife Habitat Technical Guide (OMNR 2000) as habitat that is “ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or Natural Heritage System” and is protected under the Provincial Policy Statement. Section 2.3 of the Provincial Policy Statement requires that “natural heritage features and areas will be protected from incompatible development” and that development and site alteration will be permitted on or adjacent to these areas “if it can be demonstrated that there will be no negative impact on the natural features or ecological functions for which the area is identified”. Since significant wildlife habitat has been identified as a “natural heritage area” it is protected under the Provincial Policy Statement.

For the purposes of this Study, significant wildlife habitats were those falling into any one of the following four categories:

1. seasonal concentration areas
2. rare vegetation communities and specialized habitats for wildlife
3. habitats for species of conservation concern, excluding the habitats of endangered and threatened species
4. animal movement corridors

Appendix E provides a more detailed list of features that may be present in the Town of Fort Erie that are considered Significant Wildlife Features.

Sources of information used in the identification of significant wildlife habitats included field data collected in 2002 by Dougan and Associates as well as information gathered from OMNR wetland evaluations, the OMNR NRVIS database, ANSI reports, ESA reports, Ontario Herpetofaunal Summary database, and 2002 Hooded Warbler and Acadian Flycatcher Survey data.

Criterion #6: Representation

From a conservation perspective it is sound practice to protect examples of some of the most common as well as the least common communities to ensure protection of the full range of habitat and species diversity.

Habitat blocks considered to fulfill Criterion #6 were representative of at least one, and sometimes an array of biotic community and/or landform types considered typical or characteristic of the natural heritage in the Town of Fort Erie. These blocks contain good examples of the typical as well as less common array of fauna, flora, communities, soils and landforms present in the Town. This criterion refers to the existing range of habitats, natural features, landforms and species within the Town, with the primary goal of protecting as complete a representation of them as possible. As such, it applies to both rare and common species and habitats.

Criterion #7: Socio-Economic Value

In addition to recognizing the inherent ecological value of natural heritage features in the Study Area, it is important to recognize the recreational, educational, spiritual and commercial values natural areas may hold for people. Ultimately it is people who are the stewards of these natural areas, and it is only by

engaging in low-impact activities in these natural areas that people will come to appreciate and understand them.

Evidence or reports that the habitat block is utilized by individuals or organizations for the purposes of education (e.g., nature walks), recreation (e.g., hiking, biking, boating, fishing, horseback riding), spiritual (e.g., prayer, religious ceremonies) or commercial (e.g., firewood collection, seed collection) activities was required for fulfillment of Criterion #7.