

Draft
Holiday Beach
and
Big Creek Marsh
Important Bird Area
Conservation Action Plan

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For the Holiday Beach and Big Creek IBA Steering Committee and Stakeholders**

December, 2000

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1.0 Introduction

A broad wall of purple black clouds was bearing down on us from the north west. This line of thunderstorms was the leading edge of a strong cold front; the weather forecaster announced. Mid September seemed late for powerful thunderstorms. The summers heat and humidity was only slightly subdued. We looked forward to the fireworks as the clouds closed in, as well as the mid teen highs for Saturday and the single digit temperatures predicted for Saturday evening after the hot humid air was swept away by this arctic cold front. Granted, it would be cool for the hawk festival, but we knew what the temperatures meant. Hawks would be moving. My children could barely sleep that night. This was their third trip to see hawks migrating along Lake Erie, but the first to Holiday Beach, and the first with promising weather. We left our motel in Amherstberg at 7:30 am arriving in the Holiday Beach parking lot by 8:00. The parking lot was already nearly full for Hawk Festival. There was a buzz in the air . . . and more. Stepping out the car, two Sharp-shinned Hawks screamed past, in pursuit of a tiny blur. We were awe-struck. As the morning drew on, hawk after hawk glided or blasted past. Kettles of hundreds of Broad-winged Hawks spiralled upward, then shot off singly to the south west or vanished into the ether.

At 11:30, Sitelle and Camille had their chance to release a hawk from the extremely knowledgeable and gentle leader. The parade of hawks continued throughout the afternoon with only the occasional lull. We could only imagine how they saw the world from aloft. The irrepressible migratory urge steering them south, across the western tip of Lake Erie into the United States and in many cases beyond.

Finally, at 4:30, we left the party of hawk watchers on the tower to return to Guelph. The 20 000 hawks that day was far below their “best” days, but surpassed our wildest dreams; a day that my children will never forget.

The Holiday Beach IBA is located at the extreme southwestern tip of Ontario, just east of where the Detroit River empties into Lake Erie. (see Figure. 1). Specifically, the site includes Holiday Beach Conservation Area, and adjacent lands and waters, including Big Creek Marsh and sections of Big Creek. While much of the IBA is in public ownership, some is owned privately. This IBA is recognized for its globally significant numbers of migrating hawks, large concentrations of both land and waterbirds, and the fact that it has a breeding population of the endangered Prothonotary Warbler.

Over the year 2000, the IBA steering committee met several times to discuss conservation planning and action for the site. The core members of the steering committee are from Essex Region Conservation Authority, the Holiday Beach Migration Observatory and the Essex Field Naturalists. The Committee was success in obtaining a grant in the spring of 2000 to hire a researcher to monitor and describe breeding activity of the Prothonotary Warbler.

The vision statement for the Holiday Beach and Big Creek Marsh IBA is as follows:
Holiday Beach Important Bird Area will be conserved and managed to protect its significance for migratory and resident birds, and as a place where birds can be monitored, studied and enjoyed for the educational, ecological

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and economic benefits to the people of the Essex Region and beyond.

2.0 The Important Bird Area Program

The IBA program is an international initiative co-ordinated by BirdLife International, a partnership of member-based organizations in over 100 countries seeking to identify and conserve sites important to all bird species world-wide. Through the protection of birds and habitats, they also promote the conservation of the world's biodiversity. There are currently IBA programs in Europe, Africa, the Middle East, Asia, and the Americas.

The Canadian BirdLife co-partners are the Canadian Nature Federation (CNF) and Bird Studies Canada (BSC). The Canadian IBA program is part of the Americas IBA program which includes the United States, Mexico, and 17 countries in Central and South America. The Federation of Ontario Naturalists is responsible for implementing conservation planning for IBAs in Ontario.

The goals of the Canadian IBA program are to:

- identify a network of sites that conserve the natural diversity of Canadian bird species and are critical to the long-term viability of naturally occurring bird populations;
- determine the type of protection or stewardship required for each site, and ensure the conservation of sites through partnerships of local stakeholders who develop and implement appropriate on-the-ground conservation plans; and
- establish ongoing local involvement in site protection and monitoring.

IBAs are identified by the presence of birds falling under one or more of the following internationally agreed-upon categories:

1. Sites regularly holding significant numbers of an endangered, threatened, or vulnerable species.
2. Sites regularly holding an endemic species, or species with restricted ranges.
3. Sites regularly holding an assemblage of species largely restricted to a biome.
4. Sites where birds concentrate in significant numbers when breeding, in winter, or during migration.

While the program at all stages is a voluntary one, the advantages of an IBA recognition extend beyond those of conservation alone. There can be increased awareness of the true worth of the site among the local community, and community involvement can result in diverse groups working for a common cause.

In Ontario, the Federation of Ontario Naturalists is conducting community conservation planning in approximately 20 sites as of 2000. Community conservation planning means engaging the local community in the development and implementation of the conservation plan. This process

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was initiated at the Holiday Beach and Big Creek Marsh IBA in December 1999, and continued with several meetings throughout 2000. Essex Conservation Authority, owners of Holiday Beach Conservation Area, have been strong supporters of IBA conservation planning. The Holiday Beach Migration Observatory and the Essex Field Naturalists have also been instrumental in the development of this plan, as well as undertaking valuable field work. Individuals who have contributed generously to this process include: Chris Allsop, Dan Lebedyk and Bev Wannick of Essex Region Conservation Authority, Betty Learmouth, Dorothy McLeer, Alain Chartier, Phil Roberts and Bob Hall-Brooks of the Holiday Beach Migration Observatory, Tom Hurst of the Essex Field Naturalists, Graham Rose of the Lake Erie Hunt Club and Dean Ware, who was conducted Prothonotary Warbler Surveys.

3.0 IBA Site Information

3.1 Location and description

Site: Holiday Beach and Big Creek Marsh IBA, CAON034G

Location: 42°02' N, 82°03' W

Holiday Beach and Big Creek Marsh IBA encompasses 13.5 km² of freshwater marsh, scrub and deciduous woods at the extreme southwestern tip of Ontario, just east of where the Detroit River empties into Lake Erie. Specifically, this IBA is located along the shoreline of Lake Erie at the mouth of Big Creek in the southwestern portion of Essex County, south of Regional Roads 20 and 50, about two kilometres southwest of Malden Centre and seven kilometres south-southwest of Amherstburg (population 10 245). Forty kilometres north of the IBA is the city of Windsor (population 197 694) and Metro Detroit (population 4 318 000). Approximately five million people live within a ninety-minute drive of the IBA.

Included within the IBA is Holiday Beach Conservation Area (210 ha), a regionally significant recreational park that provides outdoor recreation opportunities for residents of the region. By far, the largest area of the IBA consists of Big Creek Marsh (1176 ha), a wetland complex that is one of the most ecologically important areas in the county. A strip of cottage properties, Lake Erie County Club and Lakewood Beach lie along the lakeshore separating Holiday Beach Conservation Area and Big Creek Marsh from the Lake Erie shoreline.

The predominant feature that makes this IBA globally significant is perhaps best viewed in a satellite image of Southern Ontario. The land mass that is southwestern Ontario appears as a triangular peninsula with its narrowest apex stretching southwest between Lakes Ontario and Erie on its southern edge and Lakes St. Clair and Huron on its northwestern edge. These vast expanses of open waters, virtually inland seas, present formidable barriers to many fall migrants. During fall migration, southwestern Ontario functions as a huge funnel that confines southbound migrants, notably hawks, to specific flight corridors. Holiday Beach and Big Creek Marsh IBA lies at the narrow end of this funnel, concentrating birds in numbers of 600 000 to 750 000 (Chartier 1993). Each fall on their way south, migrants avoid the lower Great Lakes by crossing

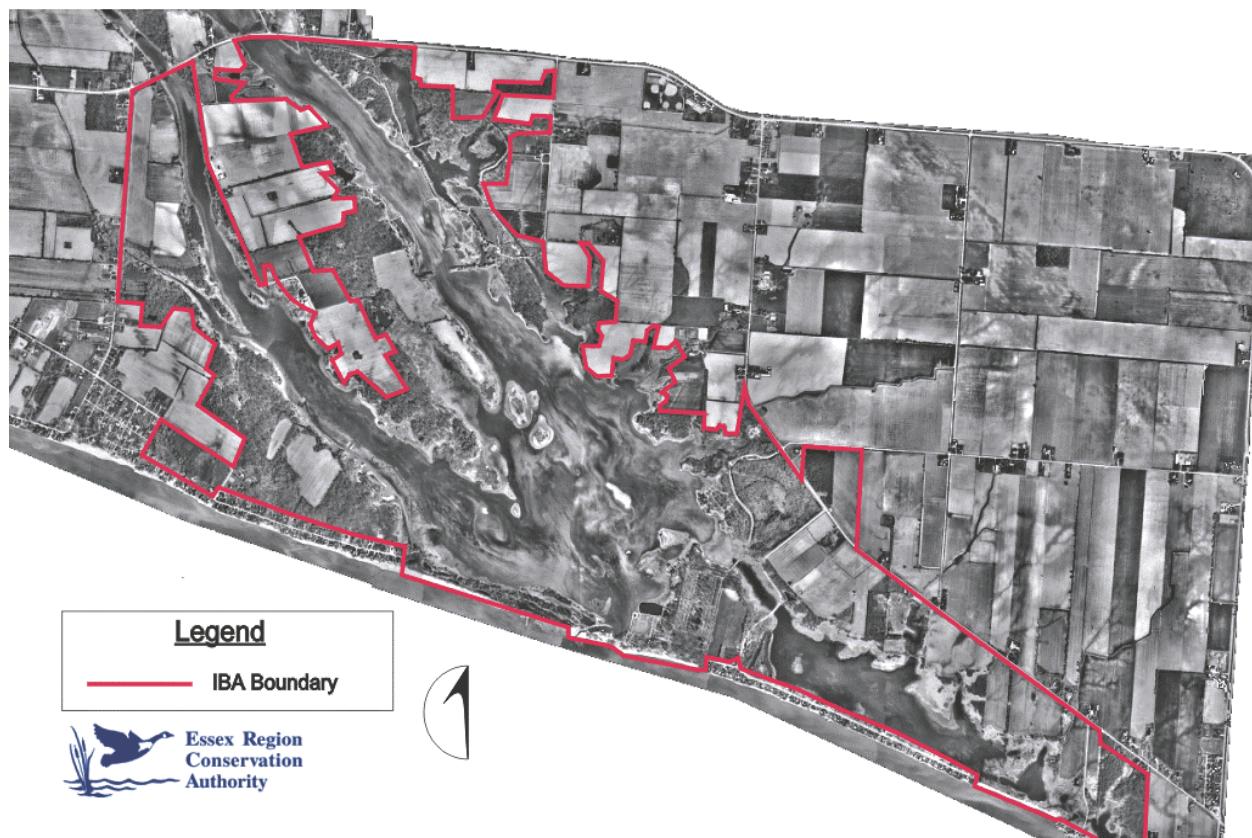
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the relatively narrow, five to six-kilometre channel of the Detroit River made even less formidable by the presence of mid-channel islands.

Much of the narrow end of the funnel – Essex County – is flat, featureless farmland. The IBA, as well as serving as a concentration site for migratory birds, encompasses the largest and most significant wetlands in Essex County. Draining this area of approximately 60 km², Big Creek flows south to Lake Erie. Near the mouth of Big Creek is a wide, large, shallow marsh with mostly open water that resembles a freshwater estuary. The marsh is more or less cut off from Lake Erie by a weir that permits limited control of water levels, a narrow barrier beach and a low, fore dune complex stabilized by Wild Grape and Virginia Creeper. The shoreline marsh and creek system consists of a mosaic of wetland communities including stands of cattails interspersed with very turbid open water, swamp forest, thicket, sedge and reed communities. American Lotus is prominent in some locations. Submerged plant communities grow in the shallow bays of the marsh. Along the shoreline and on the islands within the marsh grow moisture-tolerant shrubs and trees including Buttonbush, willows, Cottonwood, Silver Maple, Green and Red Ash. Adjacent to the marsh are both agricultural fields and abandoned fields, lowland woods of Hackberry and Bur Oak while in drier pockets, Chokecherry, Red Oak and Shagbark Hickory predominate. There are also two small plantations of White Pine and Scotch Pine.

Figure 1. Holiday Beach and Big Creek Marsh Important Bird Area.

Holiday Beach and Big Creek Marsh IBA



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The water levels within the marsh vary seasonally and are dependent upon the water levels of Lake Erie. Much of the land with the IBA varies in elevation as little as one to two metres above the level of Lake Erie and is within the 1:100 year floodline (Master Plan 1989). During periods of high lake levels, significant portions of the conservation area, including parking lots and camping areas, can be flooded at depths up to one-third of a metre. During periods of low lake levels, some of the marsh can be above water and the Lake Erie shoreline can extend a further 75 m (*ibid.*). The interval between periods of high and low lake levels varies widely and there is no regular predictable cycle of levels (Herndendorf 1987).

Natural surface drainage within the IBA is poor to fair through the predominantly clay soil. In the marsh areas, the clay subsoil is overlain with muck and silt. Also, the flat topography and high water table contribute to the poor drainage. Several municipal drains provide artificial drainage of Holiday Beach Conservation Area.

Holiday Beach and Big Creek Marsh IBA lies within the Lake Erie lowlands ecoregion. The climate of this region is temperate and humid-continental, characterized by rapidly changing weather patterns. Summers are hot and often humid with thunderstorms averaging 35 days per year; winters are mild. The average annual precipitation is 780 mm. Most precipitation is derived from the flow of warm, moisture-laden air from the Gulf of Mexico. The region boasts the mildest climate in the province due to its southerly latitude and to the moderating influence of Lake Erie. The mean January temperature is -3.3° and the mean July temperature is 22.8°C .

4.0 IBA Species Information

Holiday Beach and Big Creek Marsh has been designated an IBA of global significance for congregatory species and national significance for threatened species (Canadian IBA Database 1999). During fall migration, the raptor concentration is globally significant. In 1996, for example, 149 534 raptors were counted at this IBA. Broad-winged Hawk numbers are also globally significant, while several species, predominantly raptors, have nationally significant fall migration numbers; these include Turkey Vulture, Red-shouldered Hawk, Northern Harrier, Peregrine Falcon, Cooper's Hawk and Blue Jay (Table 1). Peregrine Falcon is designated as Threatened in Canada and Endangered in Ontario. Red-shouldered Hawk is a Species of Concern in Canada and Vulnerable in Ontario. Other raptors of note include Sharp-shinned Hawk and American Kestrel whose maximum annual totals are 18 604 and 5747 respectively.

Of the estimated 600 000 to 750 000 fall migrants that pass through Holiday Beach and Big Creek Marsh IBA, 50% or more may be Blue Jays and about 25% may be raptors (*ibid.*).

Holiday Beach and Big Creek Marsh is also designated an IBA because it provides breeding habitat for Prothonotary Warbler, an Endangered species in Canada. In Ontario, the only province in which it breeds in this country, it is regulated under the provincial Endangered Species Act. Three nesting pairs and one territorial male were recorded in this IBA in 2000,

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representing seven percent of the national population (Canadian IBA Database 2000). Potentially, more may breed in the Lake Erie Hunt Club property of the IBA since suitable habitat exists there. Monitoring of this property is incomplete.

Table 1: Congregatory Species Recorded at Holiday Beach and Big Creek Marsh IBA and their Percentage Occurrence at the National Level (Canadian IBA Database 1999)

Common Name Scientific Name	Highest Annual Count (year)	Significance	% of National Population
Turkey Vulture <i>Cathartes aura</i>	19 645 (1996)	National	52.4%
Red-shouldered Hawk <i>Buteo lineatus</i>	1667 (1993)	National	13.8%
Broad-winged Hawk <i>Buteo platypterus</i>	110 331 (1984)	National	4.9%
Northern Harrier <i>Circus cyaneus</i>	1636 (1989)	National	1.6%
Peregrine Falcon <i>Falco peregrinus</i>	55 (1993)	National	at least 1.3%
Cooper's Hawk <i>Accipiter cooperi</i>	1083 (1991)	National	1.2%
Blue Jay <i>Cyanocitta cristata</i>	450 823 (1997)	National	unknown

4.1 Natural History of IBA Species

4.1.1 Raptors

What is a raptor?

Among birders and naturalists, raptors are birds of prey. These terms “raptors” and “birds of prey” are reserved for those birds which capture and feed on relatively large vertebrate prey: mammals, birds, reptiles, fish and amphibians. A raptor’s bill is hooked and adept at tearing up food while its talons – or claws – are adapted to kill its prey. Traditionally the Turkey Vulture has been grouped with birds of prey at hawk watches even though anatomically it is significantly different. In fact, a vulture is more closely related to storks.

Broad-winged Hawk

More Broad-winged Hawks are counted at hawk watches during migration than any other raptor in the Western Hemisphere. Breeding in forested habitats, this small, chunky buteo is found from Alberta, east to the Maritimes and throughout the eastern United States, south to Florida. Broad-winged Hawk is a long distance migrant returning each fall to Central America and as far south as Brazil and Peru. A generalist in terms of feeding, it preys on mammals, birds,

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amphibians, reptiles and insects. Observations suggest that it may fast for extended periods of time during migration (Kerlinger 1989). Goodrich et al. (1996) summarize the natural history of this species. Anecdotal evidence suggests that large numbers of Broad-winged Hawks roost overnight in forests along the Lake Erie shoreline, including forests at Holiday Beach and along Big Creek (Holiday Beach and Big Creek IBA Steering Committee, pers. comm.).

Turkey Vulture

Over half of the estimated population of Turkey Vultures in Canada migrates in the fall around the western end of Lake Erie, leaving their breeding grounds in southern and central Ontario as well as the southwestern region of Quebec. The central and western Canada distribution of this species is within a few hundred kilometres of the Canada-United States border. In the continental United States, it breeds in every state. In the southern United States, Turkey Vulture is a permanent resident; northern populations, including Canadian birds, migrate into the southern states. Large numbers migrate south into Mexico. Once in flight, a Turkey Vulture rarely needs to flap its wings but rather courses along at speeds to 60 kilometres per hour with no obvious effort rising, skimming low, or tilting from side to side. Curiously, a Turkey Vulture will infrequently droop its wing tips quite low then quickly straighten them as in a flapping motion. No other raptor exhibits this behaviour termed “mock-flapping”(Dunne et al. 1988). Turkey Vultures feed on carrion that they locate by sight or by their highly developed sense of smell.

Red-shouldered Hawk

The Red-shouldered Hawk inhabits large mature woodland of bottomlands, river valleys and deciduous swamps. Such habitat provides an array of prey species for this patient hunter. Red-shouldered Hawk hunts from a perch, swooping down on a variety of small mammals, frogs, snakes, crayfish and insects (Croc coll 1994). Only northern populations move south in the fall. Populations in southern and central Ontario, southern Quebec, New Brunswick and from Minnesota to Maine make up the northern migrants. The eastern population in the United States ranges from the Canadian border south to Texas and Florida. A western population is found along the California coast. Eastern migrants are partial migrants travelling 300-1500 km (Croc coll 1994) extending south into central Mexico. A striking and attractive hawk in adult plumage, the migratory movements of the Red-shouldered Hawk have been well documented at hawk watches throughout its range (*ibid.*). The natural history of the Red-shouldered Hawk is described by Crocoll (1994).

Northern Harrier

The Northern Harrier is the only raptor in North America that habitually hunts its prey by low-level, cruising flight, covering about 150 kilometres a day (Brown and Amadon 1968) over wetlands and fields. Rodents and birds such as Meadow Voles and Red-winged Blackbirds make up a significant portion of its diet (Hamerstrom 1986). The Northern Harrier breeds across the continent from northwest Alaska to Newfoundland, south of the tundra and throughout at least the northern half of the United States. A partial migrant, it winters through central and southern United States, Mexico to northern South America. During migration, Northern Harriers

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are often the first, and last, raptors to be recorded during a day of hawk watching. They will migrate in weather conditions that ground other raptors: fog, freezing rain, gales or snow (Dunne et al. 1988).

Cooper's Hawk

Cooper's Hawk is one of three accipiters recorded at North American hawk watches. Accipiters are agile predators that can weave their way through a maze of branches in woods, thickets or about backyards to ambush small birds. The prey of Cooper's Hawk is mainly medium-sized birds but may also include mammals. This hawk breeds across the southern forested regions of Canada, from British Columbia to New Brunswick and throughout much of the United States. Although some birds remain in southern Ontario for the winter, most migrate into the United States, wintering in all but the northeastern and north-central portions. Rosenfield and Bielefeldt (1993) describe the natural history of Cooper's Hawk.

Peregrine Falcon

The Peregrine Falcon occurs on all continents except Antarctica and all major islands except Iceland and New Zealand (Burton 1989). Of all the raptors migrating through the Great Lakes Region, this falcon is least likely to go around the lakes although it may do so. Even southerly winds cause little concern apparently. In fact, hawk watchers along the lower lakes look to southerly winds as favourable for spotting Peregrines near the end of September. Peregrines from arctic Canada "leapfrog" more southerly ones and migrate as far south as South America. Recently Peregrine Falcons have become re-established in southern Canada and northern United States. In Ontario, for example, Peregrine Falcons have nested on cliff faces in uninhabited areas and on skyscraper ledges of urban centres. To feed, Peregrine Falcons will orient to and strike only moving targets, in an unobstructed air space from open tundra to the cavernous spaces between office towers in a city centre. Once oriented to its prey, the peregrine invariably gains altitude above the prey then goes into a power dive or "stoop" delivering a lethal or disabling blow with its talons. Power dives have been timed at speeds up to 300 km/h.

Population Trends of Raptors

Data gathered at hawk watches (see Section 8.0) has contributed significantly to determining population trends of raptors. Broad-winged Hawk has exhibited stable populations for over fifty years beginning in 1936 (Goodrich et al. 1996). Data analysis in the early 1990s, however, raises the question of a possible decline in some populations. A decrease in migration numbers in a given region may represent a population trend or change in migration patterns (*ibid.*).

Peregrine Falcon is without question one of the poster-raptors of 20th-century North America. Its population declined drastically due to eggshell thinning and reproductive failure caused by DDT and other pesticides used after World War II to control insect pests. Peregrine Falcon has rebounded in number throughout its range. In Ontario, for example, 50 nesting territories were confirmed by July 2000 and new nests have been located in every part of the province (Armstrong 2000). A significant recovery is underway throughout North America. Although

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DDT was banned in 1972, it is still a significant contaminant on the wintering grounds in northern South America and the Gulf of Mexico (Austen et al. 1994).

Populations of Turkey Vulture have increased in Canada (Latta 1999) while populations of Northern Harrier appear stable. Cooper's Hawk appears to be increasing in number over much of its range and Red-shouldered Hawk populations are stable or increasing (*ibid.*). Latta demonstrates that Sharp-Shinned Hawk is the only species whose numbers are declining at Holiday Beach Migration Observatory during migration and notes that it is declining in other parts of its range, particularly in eastern North America. Goodrich (1995) suggests that, in part, the decrease could be the result of Sharp-shinned Hawks wintering further north. Christmas Bird Count data from areas north of hawk watches where this decrease was observed support this idea (*ibid.*, Latta 1999).

Stable and increasing populations of birds of prey throughout North America are a result of a dramatic change in public attitude towards these birds throughout this continent. During the 1920s and 1930s, birds of prey were considered vermin; in fact, in many jurisdictions, bounties were offered to promote their extermination. Unlike migratory game and non-game birds and insectivorous birds, birds of prey are not protected by The Migratory Birds Convention Act of 1917. Golden Eagle, and the "bird-killing hawks" such as Northern Goshawk, Cooper's Hawk and Peregrine Falcon were considered poachers of the hunters' game birds and farmers' domestic stock (Beebe 1974). At Hawk Mountain, Pennsylvania and Cape May, New Jersey – today, well-known hawk migration observatories – thousands of migrating hawks were shot and killed. Beginning in the 1960s, concerns about the effects of pesticides on the environment and the widely publicized reproductive failure of birds of prey led to a change of attitude towards these birds. Within a decade or so, some of the species once on provincial or state vermin lists were on threatened or endangered species lists, accorded legislative protection and provided public and private financial funding for their recovery. Because of the elimination of persecution, the banning or reduction of the use of certain pesticides and the recognition of the need to preserve habitat, many populations of birds of prey have rebounded.

Raptor Migration

Birds cannot fly very far in a migratory sense without encountering water. Most birds of prey are reluctant to cross oceans, large lakes and sometimes wide rivers. The mortality of raptors attempting to cross wide bodies of water is well documented. It is likely, for example, that hundreds of hawks perish every year on the Great Lakes (Kerlinger 1989). For a hawk lost in fog, there is nowhere to rest; in a weakened condition, predation by large gulls is likely.

Not all raptors avoid water barriers, however. Peregrine Falcon and Northern Harrier may undertake crossings more often and complete longer crossings than most (*ibid.*). Both of these species are known to complete flights over water of more than 125 kilometres (*ibid.*). As a general observation, raptors with long, narrow wings (falcons and harriers) have success crossing water; those with short, rounded wings (Broad-winged Hawk and Sharp-shinned Hawk) tend to avoid open expanses of water when migrating.

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On migration, most raptors tend to use thermal soaring and gliding flight, resorting to powered, or flapping flight infrequently (*ibid.*). During the day as the sun heats the landscape, air begins to rise, resulting in columns of warm and rising air called thermals. These thermals begin early in the day with weak updrafts, building to 1100 to 1200 m, seldom exceeding 1500 m, by noon or early afternoon (Kerlinger 1995). When a large number of hawks share the same thermal and are lifting and swirling, it is termed a “kettle” – like bubbles of water vapour rising in a kettle of boiling water. Thermals provide a source of lift for raptors, performing like invisible elevators (Dunne 1995). Once near the top of a thermal, raptors switch from thermal soaring to gliding flight. As if on an invisible escalator with wings fully extended, the gliding raptor descends but also travels a considerable distance across the landscape. Dunne (1995) speculates that a Broad-winged Hawk using appropriately spaced thermals, might travel 380 km in a day, expending its own energy on only a few series of flapping strokes – to leave its morning perch and to gain a new one for the night ahead. Seasonally, thermals are strongest and most abundant during spring and fall – the seasons of migration.

Patterns of Migration

Beginning hawk watchers soon realize that certain species of raptors migrate alone while others migrate together in large numbers. Peregrine Falcons migrate singly not as a group. Red-shouldered Hawk may be alone or in small loose groups of three or more. Broad-winged Hawk and Turkey Vulture have a tendency to migrate in large numbers. Not all raptors migrate at the same time. Fall migration begins as early as August or as late as December or January. Broad-winged Hawk is the earliest fall migrant and the latest spring one. Immature Red-shouldered Hawks may begin migration in September whereas adults leave in October (Kerlinger 1989). Immature Cooper’s Hawks tend to begin migration one week earlier than adults and females precede males by several days (Rosenfield and Bielefeldt 1993). Individuals from northern populations of Peregrine Falcon and Turkey Vulture migrate earlier and tend to fly a greater distance than individuals of southern populations.

4.1.2. *Blue Jay*

Perhaps the most identifiable bird in Ontario is the Blue Jay with its unmistakable appearance and its gregarious and raucous behavior. During the breeding season, however, the Blue Jay can be secretive and often solitary. In late summer, Blue Jays roam about in family groups or join other family groups to form small flocks, noisily searching for food. The natural history of the Blue Jay is well described by Tarvin and Woolfenden (1999).

Distribution and abundance

A resident throughout its range, the Blue Jay is found in all Canadian provinces and every American state east of the Great Plains. As far back as records have been kept, the Blue Jay has been common throughout most of Ontario and absent from only the northern third of the province (Bennett 1987). In Canada it has been expanding its range westward since the late 1940s. Urbanization, with its accompanying changes in vegetation and abundance of bird feeders, likely made this expansion possible (Tarfent and Woolfenden 1999). Blue Jays have been implicated in the decline of certain songbirds whose nests they predate, especially along

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forest edges. Little direct evidence however supports this claim (*ibid.*). Given how often this Jay is observed throughout Ontario, its density of 1000 to 10 000 per 10 km² would not be a surprise to many (Bennett 1987).

Migration

Each fall, part of the Blue Jay population migrates to more southerly portions of its breeding range, returning in the spring. This is somewhat unique in that the Blue Jay is the only New World jay that exhibits latitudinal migration. Flying by day, the Blue Jay migrates in flocks of 2 to 100. Under good migratory conditions flocks have been observed moving past a particular observer at the rate of several hundred per hour and as many as tens of thousands per day. The all-time one day record at Holiday Beach and Big Creek Marsh IBA was set in September 1999 – 121 000 Blue Jays (The Northwind Winter 2000). Many aspects of Blue Jay migration are incompletely understood. What can be said about Blue Jay migration is that some individuals are present all year throughout the range and that some individuals throughout the range will migrate (Tarvin and Woolfenden 1999). A long-standing hypothesis suggests that migration is possibly influenced by fluctuation in seed crop abundance on a broad geographic scale. This notion has been refuted on a regional or local scale (*ibid.*).

In autumn migration, Blue Jays move along the shorelines of large bodies of water such as Lake Erie and appear in concentrations at Point Pelee and Holiday Beach. The migration spans mid-September to mid-October with large numbers usually observed during late September and early October. During this season, weather conditions do not appear to affect migratory behavior (*ibid.*).

In spring, northward migration extends from late April to late May and migration is much less conspicuous in many parts of its range. In Ohio, however, where the western end of Lake Erie constricts their northerly passage, 5000-10 000 per day are observed along the lakeshore. When confronted by large bodies of water during both spring and fall migrations, Blue Jays tend to follow shorelines and go around or island hop where possible. When crossing is necessary, jays rise from trees at a sharp angle and circle up to 250 metres prior to their crossing attempt. They may exhibit this behavior more than once before finally striking out for the far shore (*ibid.*). Counters at watches describe Blue Jays as "very nervous migrants", often flying at tree top-level (The Northwind Winter 2000). Predators of Blue Jays on migration are those of their breeding grounds: hawks and owls including Cooper's Hawk, Northern Goshawk, Broad-winged Hawk, Red-tailed Hawk, Peregrine Falcon, Great Horned Owl and Eastern Saw-whet Owl.

4.1.3. Prothonotary Warbler

The Prothonotary Warbler is recognized by its brilliant, golden-yellow head and underparts, blue-grey wings without wingbars and a blue-grey tail with obvious white patches. The lack of wingbars and black eyeline distinguishes it from Blue-winged Warbler that is similar in colour. The more common Yellow Warbler, though similar in colour, has reddish streaks in breast and belly, which prevents confusion with Prothonotary Warbler.

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Distribution and abundance

The Prothonotary Warbler breeds throughout the eastern United States to the Mississippi Valley and into southwestern Ontario where its range is primarily restricted along the Lake Erie shoreline from Holiday Beach and Big Creek Marsh IBA to Point Abino (McCracken et al 1997). This warbler is also found in appropriate habitat in Cootes Paradise, Hamilton, and historically in Pinery Provincial Park on Lake Huron. Traditionally, the main breeding areas in Ontario have been Long Point and Rondeau Provincial Park.

The number of breeding pairs of Prothonotary Warbler in Ontario has declined dramatically from 80 in the early 1980s to only 17 breeding pairs in 1998 plus an additional 10 unmated birds (ibid., McCracken 2000). It is not unusual for there to be a significant number of unmated birds because it's the northern limit of its range. At present Prothonotary Warbler is considered critically Endangered in Canada.

The Prothonotary Warbler is most abundant in the southeastern United States and, although stable in many parts of the east, populations are declining elsewhere (ibid.). With most of the deciduous swamp forest in its Canadian breeding range is already drained, maintaining the remaining remnants is vital to the survival of this species in Canada. McCracken (2000) reviews the factors that may be contributing to its decline. Begun in 1996, the Prothonotary Warbler Recovery Team is undertaking field studies to respond to four of these factors: 1) shortage of cavity nest sites in key breeding areas; 2) competition for nest cavity sites by House Wren and Tree Swallow; 3) a relatively high rate of cowbird parasitism and 4) significant nest predation by Raccoons.

Natural History

Male Prothonotary Warblers return to the breeding grounds in spring about two weeks before females and establish territories. Prothonotary Warbler is strongly territorial (Morse 1989). Territories are established in deciduous swamps of various types: Silver Maple-Red Maple-Buttonbush or Black Willow-maple-ash. Selected habitat invariably has open pools of standing or flowing water. The water component is usually at least one hectare in area (McCracken 1987, 2000).

Prothonotary Warbler is the only warbler in eastern North America to build a nest in a tree cavity. Natural cavities in tree stumps or fallen branches are suitable although cavities made and previously used by Black-capped Chickadee or Downy Woodpecker are also appropriate (Peck and James 1983). A large variety of man-made materials serves as nest cavities as well (McCracken 2000). For example, nest box programs in Michigan were quite successful using waxed cardboard milk containers. Whereas the cavity site is highly variable, nesting material is not – moss is a critical habitat requirement for constructing the nest (ibid.).

The male Prothonotary Warbler often builds more than one nest in its territory. These alternate nests are referred to as “dummy nests” and they may play a significant role in attracting a mate, reducing competition or negating predation (ibid.). Once the female selects a nest, she lays and

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incubates 6-8 eggs. This incubation period lasts about 12 days; the young fledge the nest in another 10 to 12 days. In Ontario, only one brood is raised.

By mid-August, Prothonotary Warblers migrate south to southern Central America and the northern mangrove coasts of Columbia and Venezuela. Since 1966, an estimated 30% of this habitat has been lost (McCracken 2000). Recently, the destruction of mangrove forests for resort development and shrimp aquaculture along Latin American coastlines is a further threat to this warbler. Such coastal forests provide winter habitat for approximately 80% of the Prothonotary Warbler population (*ibid.*).

5.0 Other Elements of High Conservation Value

Bald Eagle, an endangered species protected under the Endangered Species Act in Ontario has bred at Big Creek since at least 1960. In 2000, a nest remains active and two young were fledged (Chris Allsop, pers. comm. 2000).

Big Creek Marsh has been a well-established staging area for waterfowl (Eagles and Beechey 1985). The marsh and the adjacent waters of Lake Erie occasionally support large numbers of staging waterfowl (Canadian IBA Database 1999). Peak numbers of waterfowl include 850 Canvasbacks, October 1996, 1275 Redheads, October 1996 and 195 000 Red-breasted Mergansers, November 1992.

The large expanse of shallow, open water and wetlands attract several species of wading birds: Great Blue Heron, Great Egret, Green Heron, Black-crowned Night-Heron, Snowy Egret and Little Blue Heron. The first mainland nesting of Great Egret in Ontario occurred in Big Creek Marsh in 1959 (Peck and James 1983). Significant daily peak numbers of wading birds include 614 Great Blue Herons, 16 August 1999 and 195 Great Egrets, 1 September 1996. The conditions of drought during 1998 and 1999 provided a fall migration stopover site for shorebirds. In 1999, many hundreds of at least 10 species of shorebirds were recorded (The Northwind Winter 2000).

Other daily peak numbers of interest include 604 Ruby-throated Hummingbirds, 13 September 1997 and 825 Eastern Bluebirds, 27 October 1991. As many as 2500 American Goldfinches have been recorded annually.

Insect migration as well as bird migration is monitored at this site. Significant numbers include 5884+ Monarch Butterflies, 15 September 1997; 20 species of dragonflies and damselflies were recorded including 2000+ Common Green Darners during a three-hour count on 21 September 1999 (The Northwind, Winter 1998).

Of 79 rare plants, 49 are considered rare in Canada including Shellbark Hickory, Pignut Hickory, Swamp White Oak, Flowering Dogwood, Wild Yam, Prairie Dock and Ironweed. Four plant species within the IBA are nationally designated as Species of Concern: Green Dragon, Prairie Rose, Hop-tree and Swamp Rose-Mallow (Eagles and Beechey 1985). **Note to Reviewers: Red Mulberry is listed in Eagles '85 but was not verified – What is its status?** The marsh is also

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home to the provincially and nationally Threatened Eastern Fox Snake. The Spotted Turtle is found here and is a Species of Concern in Canada and designated Vulnerable in Ontario (*ibid.*).

The coastal marshes of western Lake Erie occur along about 190 km, about 30%, of the shorelines of Ontario, Michigan and Ohio and encompass an area of 268 km² (Herndendorf 1987). Big Creek is one of three streams along the Ontario shoreline where wetlands have developed like estuaries at the mouths of the creeks. The other two are Cedar Creek in south-central Essex county and Hillman Creek, east of Point Pelee National Park. Big Creek is one of 70 major marshes within the western basin of Lake Erie of which seven (10%) are located along the shores of the Ontario mainland (*ibid.*) Herndendorf (1987) profiles the ecological function and value of these coastal wetlands within the Great Lakes ecosystem.

6.0 Land Ownership and Use

6.1 Land Ownership

The Holiday Beach Conservation Area (210 ha), is owned by the Ontario Ministry of Natural Resources. About 225 ha of the marsh, Big Creek Conservation Area, is owned by the Essex Region Conservation Authority. About 625 ha of the Big Creek Marsh is privately owned by the Lake Erie Hunt Club. The Lake Erie Country Club, a private cottage development, is located along the shoreline along the eastern part of the IBA.

6.2 Land Use

Historic

Following the American War of Independence (1776-83), the British Government encouraged settlement of the lands in the vicinity of Big Creek. Land grants were issued to civilian farmers and to Loyalist soldiers who had fought for the British side. Land suitable for agriculture has been farmed in the since 1798 and continues to this day. A dam was built in the 1920s to control marsh water levels. In 1973, a severe storm washed away a section of the barrier beach to which the dam was connected. Today, the dam, managed by the Lake Erie Hunt Club, provides limited control of water levels in the marsh (Chris Allsop pers. comm. 2000).

In 1958, some tracts of lands east of Big Creek Marsh were purchased by the Ontario government for the purpose of establishing a provincial park and a Waterfowl Unit for duck hunting east of the proposed park. In 1986, the park and Waterfowl Unit were deregulated under the Ontario Provincial Parks Act. In 1989, the Essex Region Conservation Authority entered into a management agreement with the Ontario Ministry of Natural Resources concerning Holiday Beach Conservation Area (Master Plan 1989).

South and adjacent to the Conservation Area is a high-density cottage development (about 160 cottages), the Lake Erie Country Club occupying about two kilometres of shoreline. A similar cottage development, Lakewood Beach, is located along the shoreline of Lake Erie, south of the marsh and west of Holiday Beach Conservation Area.

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Current

Holiday Beach Conservation Area

Holiday Beach Conservation Area contains two campgrounds with a total of 106 campsites, 42 of which are serviced. There is a 550-m strip of sand beach. The Day Use Area has 375 picnic tables, a picnic shelter, barbecue grills and a playground. Recreational activities include picnicking, swimming, bicycling and birdwatching. Facilities include an Interpretive Centre/Classroom with a nature trail and marsh boardwalk to provide school programs and visitors with information about park features and conservation practices.

Agricultural fields adjacent to the marsh, about 66 ha, are leased for the growing of corn and soybeans.

Holiday Beach Migration Observatory

In his recently acclaimed *Living on the Wind: across the hemisphere with migratory birds* (1999), Scott Weidensaul writes: “In just the past few years, birders have discovered a hitherto-unknown raptor migration corridor around the western end of Lake Erie, where nearly a quarter million broad-wing hawks have been seen during one day – a dramatic reminder that we know less than we think we do about the natural world.” Credit for this discovery belongs to two hawk watches along this migration corridor: Holiday Beach Migration Observatory (HBMO) and Southeastern Michigan Migration Observatory. Founded in 1986, HBMO is a volunteer, non-profit, membership organization whose primary activity is the scientific study of the fall raptor migration through the counting and banding of hawks at Holiday Beach Conservation Authority. In addition, the Observatory promotes public education, conservation, and site improvement and has undertaken a broader scientific study of the migration phenomenon by counting fall migrant non-raptors and banding songbirds.

Casual observers had reported fall movements of hawks through the extreme tip of southwestern Ontario since the 1950s; however, a systematic approach to reporting sightings began in 1974 with the eventual goal of fall coverage during daylight hours through the fall migration period. The counting season extends from the first of September each autumn until the 30 November. In 1988, through the efforts of a Michigan naturalists’ group, Detroit Edison generously donated a 12-metre, three-storey observation tower valued at \$100 000 as a goodwill gift to the Essex Region Conservation Authority (The Northwind Spring 1998). Essex Region Conservation Authority paid half the cost of dismantling and moving the tower to Holiday Beach. For more than a decade Hawk Tower has been the centre-piece of the HBMO and has helped hawk watchers earn this migration observatory the reputation of being one of the best hawk watching sites in North America (The Northwind Fall 1998).

Data recorded during the fall hawk watch is analysed and published annually by HBMO in their newsletter, The Northwind (three times a year). HBMO shares their data and exchanges information at several levels to further the understanding of hawk migration. During the count season, HBMO is in radio contact with hawk watchers of the Southeastern Michigan Raptor

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Research at Lake Erie Metro Park near Gibraltar, Michigan to exchange information about daily hawk movements. Together with other Ontario hawk watch sites, HBMO regularly reports to ONTBIRDS and BIRDHAWK listservers. As a member of the Hawk Migration Association of North America, HBMO shares and exchanges data to further the knowledge about hawk migrations and populations. Members have also contributed to conferences held to further hawk research. For example, in 1995, HBMO, Essex Region Conservation Authority and Windsor Department of Parks and Recreation hosted international participants from Canada, Mexico and United States to the Hawk Migration Association of North America annual conference. Data gathered at hawk watches across the continent are shared with federal, provincial and state agencies to assist in environmental planning and decision-making.

Soon after the establishment of HBMO, bird banding began at Holiday Beach Conservation Area under a station permit issued to Essex Region Conservation Authority. In time, the Holiday Beach Banders Association was formed and soon the banding operations had progressed to full observatory status under the umbrella organization, the Holiday Beach Migration Observatory (The Northwind Fall 2000). In 1993, for example, 2365 hawks, predominantly Sharp-shinned Hawk, and 115 owls were banded. Banding operations expanded from fall migration to include spring migration. In 1997, passerine banding began. The hedgerows southeast of the Hawk Tower where the banding station is located is consistently productive for migrating warblers, thrushes, sparrows and flycatchers (The Northwind Winter 1999).

Although hawk counting and banding have been the primary activity at HBMO, members are also undertaking long-term studies of other species. For example, since 1976, counts of Ruby-throated Hummingbirds have contributed to the understanding of this species' migration (Chartier 1999). In 2000, Allen Chartier was endorsed to band Ruby-throated Hummingbirds, the first bander operating in Canada to do so. By counting and banding "hummers", research into their migration at HBMO moves to a new level. Such level of interest and commitment by HBMO members gives Betty Learmouth, editor of The Northwind, HBMO president, Bob Petitt and principal bander, Phil Roberts, reason to be optimistic that one day soon, HBMO will achieve the status of Long Point (Ontario) and the Point Reyes (California) Bird Observatories (The Northwind Spring 2000).

Vignette:

Scott Weidensaul (1999) describes bird banding as "the oldest, and by far the most important, means of studying bird migration". Citing an anecdote about Henry IV of France, Weidensaul attributes the king with initiating the practice in 1595 when one of his "marked" Peregrine Falcons flew off and was observed a day later in the Mediterranean Island of Malta. On this continent John James Audubon is credited with being the first bander during his study of Eastern Phoebe in 1803 or 1804 on his family's estate in Pennsylvania. In 1899, a Danish schoolteacher, Hans Mortensen made tiny metal bands to study waterfowl, waders and raptors. In Canada, Jack Miner pioneered the banding of waterfowl in 1909 near Kingsville, about 20 km west of this IBA and received his first

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“return” the following year when a banded duck was recovered in South Carolina. The early data from Miner’s banding recoveries were instrumental in forging the Migratory Bird Treaty between the United States and Canada in 1917 (Jack Miner 2000).

Banders provide data and information for initiatives that monitor bird populations, regulate waterfowl hunting, restore endangered species, study effects of environmental contaminants, study behavioural ecology and educate people about bird conservation.

Today, licensed bird banders numbering in the thousands throughout Canada and the United States (800 active permittees and sub-permittees) band over one million birds annually. As of 1997, the North American Banding Program had on file 56 million banding records and over 3 million recovery records of over 900 bird species and subspecies. Canadian banders co-operate with the Canadian Wildlife Service who in turn has been a partner with the Bird Banding Laboratory of the United States federal government in Laurel, Maryland, since 1923. A light aluminum-alloy band stamped with a unique sequence of numbers and an abbreviated address makes recovery and analysis possible. Information from recovered bands is stored in a central computer operated by Bird Banding Laboratory and data are available to researchers and banders throughout the world.

Waterfowl Unit:

Between 1968 and 1986, the 13 ha Waterfowl Unit was managed for Canada Geese by the Ontario Ministry of Natural Resources (OMNR). In 1972, ponds were dredged to 3 metres and a dyke built to improve Canada Geese habitat. The Essex Region Conservation Authority took over management of the unit in 1987 and continued the nesting, feeding and baiting programs initiated by OMNR. Nest boxes and platforms, as well as twenty-seven blinds, are placed in designated sites throughout the area. Vegetation planted by OMNR enhances the site by providing habitat for many species of birds (Master Plan 1989).

Big Creek Marsh and vicinity has a long history of waterfowl hunting (Eagles and Beechey 1985). The portion of the marsh owned and managed by the Lake Erie Hunt Club is one of approximately 5000 private waterfowl hunting clubs that control approximately 10 000 km² of waterfowl habitat along the Mississippi flyway. This IBA lies at the intersection of migration corridors for both the Mississippi and Atlantic flyways. The Big Creek Marsh area is reputed to be one of the best Canada Goose hunting areas in Southern Ontario (Herndendorf 1987). Canada Land Inventory Capability for Wildlife-Waterfowl ranks the waterfowl habitat within the IBA as Class 1 habitat for waterfowl (Master Plan 1989). This designation acknowledges the importance of this site for both migrating and wintering waterfowl.

7.0 Conservation Management Achieved at the IBA Site

The Essex Region Conservation Authority continues to manage and develop the Holiday Beach Conservation Area in accordance with the renewable management agreements it has with the Ontario Ministry of Natural Resources. Management initiatives undertaken within the IBA serve

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to enhance habitat for the area's wildlife including birds, and serve to generate public awareness of the efforts required to maintain and rehabilitate wildlife habitat. Managing the IBA to provide foraging habitat for migrating raptors is a long-term goal.

The Prothonotary Warbler, acknowledged as a critically Endangered species in Canada, not only receives protection under the Migratory Birds Convention Act but also the provincial Endangered Species Act. Recently the National Recovery Plan for the Prothonotary Warbler was prepared by the Prothonotary Warbler Recovery Team for the Recovery of Nationally Endangered Wildlife (RENEW) Committee and Ontario Ministry of Natural Resources (McCracken 1997). In response to the growing number of endangered species in Canada, the Wildlife Ministers' Council of Canada in 1988 developed the RENEW strategy. Briefly, the goal of RENEW is to prepare and initiate recovery plans to increase populations of endangered species to self-sustaining levels and in so doing prevent any endangered species in Canada from becoming extirpated or extinct (Species at Risk in Canada 2000; Recovery 2000). Each Recovery Plan describes a 5-year implementation plan.

Raptors within this IBA, as in the rest of the province, are protected under the Fish and Wildlife Conservation Act of Ontario. Bald Eagle and Peregrine Falcon are also protected under the Endangered Species Act of Ontario.

The portion of the marsh owned by the Essex Region Conservation Authority is protected as a Conservation Area. Ontario Conservation Authorities have water and management regulatory functions (Mitchell and Shrubsole 1992). Development within Holiday Beach Conservation Area is subject to the Environmental Assessment Act, subject to exemptions provided for Conservation Authorities (Master Plan 1989). In Essex County, Big Creek Marsh Complex is the largest Environmentally Significant Area (ESA) and has been designated a Carolinian Canada site (Eagles and Beechey 1985). Within this IBA, portions of the marsh are designated as Provincially Significant wetland and a Life Science Area of National and Scientific Interest (ANSI). The portion of Big Creek Marsh owned by the Lake Erie Hunt Club is posted against trespass and experiences very little disturbance except during the fall hunting season (*ibid.*). The Holiday Beach Waterfowl Unit provides feed and cover for waterfowl during the migration season. The Unit is managed to provide a quality hunt during fall migration and an opportunity for public viewing and appreciation of waterfowl during all seasons (Master Plan 1989). Woodland cover in Essex County is approximately 3% (Larsen et al. 1999). In 1958, after establishing Holiday Beach as a park, Ontario Ministry of Natural Resources planted 30 000 trees of 30 different species (Master Plan 1989). Essex Region Conservation Authority has continued to increase woodland cover by planting trees and shrubs important for wildlife.

In 1996-97, Essex Region Conservation Authority in partnership with Sherway Contracting (Windsor) Limited undertook the restoration of a 1.6-ha parking lot adjacent to the hawk tower. Known as the Hawk Tower Habitat Restoration Project this enhancement creates a wetland of mudflats and an island sanctuary.

The Big Creek Marsh Wildlife Enhancement Project co-ordinated by the Essex County Stewardship Network involves community residents and landowners within the Big Creek Wetlands complex to establish 7 ha of tallgrass prairie for brood habitat for Wild Turkey and

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nesting cover for waterfowl. This project group will also construct 15 nesting boxes suitable for Wood Duck/Hooded Merganser/Common Goldeneye. In co-operation with Ducks Unlimited, Ontario Land Care, a local conservation club will be established as well as a Ducks Unlimited-Green Wing Club at a local school (Great Lakes 2000 Cleanup Fund 1998).

Friends of Big Creek bring together interested residents, landowners, Essex Region Conservation Authority staff and Holiday Beach Migration Observatory members to initiate and carry out projects to improve the natural environment within the Big Creek watershed.

8.0. Stakeholder Activity

Essex Region Conservation Authority

Operates Holiday Beach Conservation Area and owns Big Creek Marsh Conservation Area. “One stop shop” for commenting on resource-related development issues in Essex County.

Lake Erie Hunt Club

Private hunt club that owns lands to the west of Holiday Beach Conservation Area. Hunting confined to few members in the fall.

Lake Erie Country Club

Cottage development along the beach dune strip to the east of Holiday Beach C.A.

Lakewood Beach

Cottage development along the beach dune system and to the west of Holiday Beach C.A.

Holiday Beach Migration Observatory

Non-profit organisation dedicated to monitoring migration of biota, principally birds, through Holiday Beach. Keeps data base and record, has newsletter, executive and reports on migration.

Essex Field Naturalists

Non-profit organisation involved in nature study and conservation in Essex County.

Stewardship Essex

Council of landowners involved in promoting and advancing rural stewardship.

Canadian Wildlife Service

Department of Environment Canada (federal government) responsible for migratory birds in Canada, and enforcement of the Migratory Bird Convention Act in Canada.

Ontario Ministry of Natural Resources

Ministry of the Provincial government responsible for management of resources that are provincial jurisdiction.

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9.0 Opportunities

Designating Holiday Beach and Big Creek Conservation Area an IBA acknowledges that the Migration Observatory is “the premier North American site for observing large numbers of hawks, vultures and other families of birds in migration on a predictable basis” (Essex Region Conservation Authority 2000). In most years, more than 75 000 raptors of potentially 15 species are counted. In 1996, a total of 149 534 raptors were recorded at this observatory. Table 2 lists the yearly averages and peak dates for all raptors including the six IBA species. Interest in hawk watching during migration has increased with over 160 hawk watches operating in North America. Along the lower Great Lakes in Ontario, the fall migration is monitored on Lake Ontario at Cranberry Marsh, Iroquois Shoreline, and High Park; on Lake Erie at Hawk Cliff and Holiday Beach. Niagara Peninsula Hawkwatch operates in spring. Raptors are top carnivores in their food webs. The health of their populations can be a useful indicator of the health of the environment. Monitoring at hawk watches provides information to determine trends and status of hawk populations – the first step in their conservation.

Members of Holiday Beach Migratory Observatory (HBMO) are from many provinces and states though predominantly from Michigan and Ontario. The reputation of HBMO has attracted visitors, mostly hawk watchers, from all over the world. The Ontario Field Ornithologists and other birding groups visit annually during the fall migration. Each September, HBMO invites members and the general public to participate in Festival of Hawks weekends to enjoy, celebrate and learn about migration and hawks. As many as 10 000 people participate in three weekend festivals: Sharp-shinned Weekend (Monarchs and Hummingbirds); Broad-winged Weekend (Dragonflies); and Peregrine Weekend (Fall songbirds). Each weekend festival offers instructional viewing from the tower, hawk identification workshop, hands-on hawk displays, displays about the environment, bird banding demonstrations and refreshments at the Blue Kestrel Café. The success of the September weekend festivals is a result of the co-operative volunteer efforts from members of HBMO, including Holiday Beach Banding Association, and Essex County Field Naturalists’ Club.

On the Broad-winged Weekend in 2000, an official dedication ceremony was held for the IBA that included speeches from the local Member of Parliament Susan Whelan, the Member of Provincial Parliament Bruce Crozier, Mayor of Amherstberg Wayne Hurst, the Chair of the Essex Conservation Authority Tom Wilson and the President of the Bird Observatory Bob Pettit.

Prior to each counting season, HBMO hosts a potluck meal and an all-day workshop to introduce interested persons to hawk watching and to encourage them to become hawk watchers-in-training.

To inform both members and the general public about HBMO, the Observatory created the HBMO web site at URL: <http://www.hbmo.org/>. The HBMO newsletter, The Northwind, provides members with banding and migration reports, raptor news, both local and continental, and upcoming social events. For several years, Bob Pettit has offered a hawk identification course at the Monroe County Community College in Monroe, Michigan, to interested persons and to those wishing to become hawk watchers-in-training.

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Many members are active fundraisers for HBMO. Successful fundraising activities include the Adopt-a-hawk program, the annual raffle and sales of HBMO T-shirts, hats and badges. To increase membership, participation in festival weekends and awareness of HBMO, the Observatory advertizes their programs and events through the local media, e.g. *Windsor Star*, *River Town Times* (Amherstburg community newspaper) and *This Week* (newspaper of Harrow and Colchester South). Public service advertisements and “nature news” are heard on CBC radio. In 1998, a Discovery Canada film crew filmed the hawk migration at HBMO, highlighting the work of the observatory. HBMO has been featured as one of North America’s “birding hot spots” in *Birders’ World* (October 1996).

The hawk festivals are advertised by Essex Region Conservation Authority within the watershed and invitations are extended to tourists from outside of the county through advertisements in birding and nature magazines and Visitors’ Bureaus in Michigan and Ontario.

10.0. Threats

10.1 Hawk migration

There are no immediate significant threats affecting raptors. The magnitude of the fall migration and significance of this migratory corridor at the western end of Lake Erie needs to be recognized so that transmission or telecommunications towers or airplane flight corridors do not interfere with the migration or vice versa.

10.2 Prothonotary Warbler

Nest site competition

Prothonotary Warblers, Tree Swallows and House Wrens, species that are similar in size, are hole nesters that compete with one another for nest sites where breeding habitat overlaps. These species readily accept artificial nest boxes. As part of the Prothonotary Warbler Recovery Program, researchers and volunteers have made 200 nest boxes available for Prothonotary Warblers, mostly in historic nesting locations along the north shore of Lake Erie, including Holiday Beach and Big Creek Marsh IBA (McCracken et al. 2000).

Tree Swallows are the species most likely to compete with Prothonotary Warbler for nest sites along the edges of sloughs especially where the canopy is open. Because Tree Swallows arrive about two weeks earlier than Prothonotary Warblers, nest holes in the artificial boxes are plugged. This technique has had limited success because first year males and floaters in the Tree Swallow population continue to seek out nest sites well into June (*ibid.*).

A forest edge and semi-open forest species, House Wrens also come into contact with Prothonotary Warblers along edges of their preferred habitat. Male and female House Wrens are very aggressive within their breeding territory and will destroy eggs of other birds, including those of Prothonotary Warbler, in order to obtain a nest site (Ehrlich et al. 1988). House Wrens not only destroy eggs, take over the nest boxes and build their own nests, but the males will build

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“dummy nests” thus rendering more boxes unusable by Prothonotary Warblers. Also, these warblers arrive in the breeding areas after House Wrens have claimed many of the sites. Furthermore, House Wrens routinely have two broods making a next box unavailable throughout the summer (McCracken 2000).

Raccoon Predation

Raccoons, one of six major predators of forest birds in Carolinian forests, are omnivores, well suited to live in both rural and urban habitats (Terborgh 1989). Studies by Wilcove (*ibid.*) in rural and suburban woodlots, identifies Raccoon as the most ubiquitous predator in these habitats. Sanderson (1988) estimated that Raccoon numbers had increased 15-20 times since the 1930s, across North America. Raccoons in parks and cottage areas of Ontario are often artificially supported by human activity, e.g. food scraps in the garbage and feed put out for birds. These opportunistic feeders will predate ground-nesting, tree nesting and cavity-nesting species including Prothonotary Warbler. Predator guards on nest boxes have effectively kept Raccoons from predating Prothonotary Warbler nests (McCracken et al. 1999).

Low water levels

Breeding densities and reproductive success are both higher for Prothonotary Warbler in habitat that contains pools of open water (McCracken et al. 2000). In the late 1990s, southern Ontario experienced the most severe drought in decades, which significantly reduced breeding habitat for Prothonotary Warbler throughout its range in the province. Furthermore, the drier habitat results in conditions more favourable for House Wrens.

Wetland Habitat

The dam between Lake Erie and Big Creek Marsh provides limited control of water levels. During periods of high water levels, dykes can be breached during storms.

Runoff from adjacent agricultural fields enriches the Big Creek Marsh with nutrients that have led to increased phytoplankton growth. Runoff may be contaminated with both pesticides and herbicides. Large numbers of Carp feeding in the marsh contribute to turbid water conditions, which in turn limit light penetration and the growth of macrophytes that are an important food source for staging waterfowl.

In the past, disturbances have included filling in of wetlands for the construction of parking lots within the Conservation Area and logging – for example, logging on Knapps Island (Eagles and Beechey 1985).

11.0 The Action Plan

The following action plan lays out the basics for bird conservation in The Holiday Beach and Big Creek Marsh Important Bird Area. The vision, goals and objectives were developed over several meetings with the IBA Steering Committee. Bulleted strategies or actions follow each goal and

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objective. The suggested group or person responsible for implementation is listed in brackets, followed the Action's priority: H=high, M=moderate, L=low

11.1 Vision:

Holiday Beach Important Bird Area will be conserved and managed to protect its significance for migratory and resident birds, and as a place where birds can be monitored, studied and enjoyed for the educational, ecological and economic benefits to the people of the Essex Region and beyond.

11.2 Goals, objectives and actions:

1. Develop an inventory of significant biological features to the IBA.

a) Establish a baseline of data on biological features: (ERCA's mandate)

- Secure resources to conduct inventory.
- Conduct up to date community mapping. (collaboration with HMBO, EFN)
- Map significant Environmental features (significant vegetation, significant birds locations). (PROW Recovery Team)
- Conduct annual surveys of PROW. (Recovery team, stakeholders).
- Identify habitat conditions to identify priority areas for restoration and management. (e.g. restore landbird habitat along the shoreline). (ERCA, HBMO)
- Create digital map overlays for data. (ERCA)

b) Inventory habitats to assess value to supporting raptors. (HBMO, ERCA)

c) Assess the conditions and habitats in Big Creek for resident and migratory waterbirds. (ERCA, MNR, Lake Erie Hunt Club)

2. Conserve and protect all nationally and provincially species at risk within the IBA, and protect and enhance their habitat. This initially includes Prothonotary Warbler (PROW) and may include any additional provincially or federally listed species.

a) Implement recommendations from Prothonotary Warbler report (Ware and Lebedyk, 2000) (ERCA, Recovery Team, CWS, MNR).

- Incorporate recommendations into ERCA 2001 work plan. (ERCA)
- Co-ordinate and vet plans and efforts with the Prothonotary Warbler Recovery Team. (ERCA, Recovery Team, CWS, MNR)

b) Request to have member of IBA steering committee sit on Recovery Team. (ERCA)

c) Protect any loss of natural habitat within IBA to encroachment. (ERCA)

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3. Enhance the value of Holiday Beach IBA to migrating and resident avifauna, and restore degraded natural habitat and communities.

a) Enhance habitat wherever possible and manage for native diversity.

- Maintain conifer groves for roosting raptors. (ERCA)
- Develop and enhance native vegetation along shoreline. (ERCA, HBMO, EFN).
- Plant native “wildlife shrubs and perennials” where possible. (ERCA,)
- Create structural diversity in plantations. (ERCA)
- Manage ponds to attract shorebirds (mid-late summer draw-downs) (ERCA, Stakeholders)

b) Identify and protect habitat features which support the raptor migration.

c) Discourage the installation of any structures or devices which could result in a real or potential threat to migrating birds. (e.g. communication towers)

- Communicate concerns to municipal planning officials and politicians.

d) Restore riparian habitat along agricultural lands and other lands owned by ERCA.

- Work with existing agricultural groups and networks on land stewardship. (Essex County Stewardship Network, ERCA, Soil and Crop Association, MNR).
- Explore opportunities to retire some of the agricultural lands of ERCA into forest or alternative cover. (ERCA)
- Support and encourage any habitat restoration and enhancement in Big Creek. (ERCA, Stakeholders)
- Be consistent with recommendations of the biodiversity conservation strategy for Essex Region.

4. Support and promote the activities of Holiday Beach Migration Observatory as a critical element of the IBA’s success and identity.

a) Ensure that research and monitoring programs are maintained and supported.

- Write into ERCA Management Plan for Holiday Beach C.A. (ERCA)
- Create fund to support facilities (ERCA, HBMO, etc)

b) Establish a permanent bird observatory on site, with full facilities to support monitoring and research.

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- Become full member of “monitoring network”. (HBMO)
 - Co-ordinate and train volunteers to assist with observatory operations (HBMO)
 - Promote species specific research through the observatory (HBMO)
 - Develop facilities for staff/volunteers and equipment (ERCA, HBMO, other partners)
 - Consider providing season passes to HBMO counters to recognise their contribution to HB IBA. (ERCA)
5. *Promote and manage Holiday Beach IBA as one of the best locations to observe and learn about migrating birds in the southern Great Lakes basin.*
- a) Continue holding and support the festival of hawk. (HMBO, ERCA, EFN)
 - b) Establish ERCA and HBMO website to promote the hawk migration.
 - c) Research the potential of Holiday Beach as a spring birding destination.
 - d) Encourage members of HBMO and EFN to conduct regular surveys in 2001.
 - Communicate information and findings to province/state birders.
 - e) Develop education and outreach strategies and programs to support the above goals.
 - f) Undertake land-owner stewardship activities and programs compatible with IBA goals.
 - Share the IBA conservation planning goals with neighbours within entire IBA. (ERCA)
 - Encourage open communications with Big Creek Hunt Club (ERCA)
 - Develop fact sheets, pamphlets and other resource materials on IBA and its features and goals for the public and neighbours.
 - g) Develop educational programs on raptor migration for school groups.
 - Train volunteer educators.
6. *Establish a permanent interpretive centre and educational display/facility*
- a) Develop a vision and plan for a facility (HBMO, ERCA)
 - b) Search for private sector funders to finance the facility. (HBMO, ERCA)
 - c) Place IBA plaque beside hawk tower.
 - d) Install Raptor crossing sign or other signs/displays.

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- e) Undertake major fundraising to realize these goals. (ERCA, HBMO)

12.0 Evaluation

Planning in complex circumstances should include a system of evaluating progress, rethinking goals and objectives and revising actions. This iterative approach to planning means not only that the plan is open to revision, but also that evaluation and revision are a fundamental part of the planning process. The FON and its national partners are committed to supporting IBAs in plan implementation. Local stakeholders have already invested in the IBA, and have a stake in its success.

An annual update on the conservation plan implementation would be of great value to the CNF, FON and BSC. As Holiday Beach has joined the global family of IBAs, information on Holiday Beach and Big Creek Marsh IBA will be incorporated into BirdLife's global IBA database. This database will be used to report on conservation progress in IBAs. The information required is listed below.

- summary of general progress by the stakeholders group.
- update on actions, objectives and goals.
- changes in actions, objectives and goals. (explain why changes were needed)
- any changes in threats affecting the IBA species and site.
- copies of any media coverage or materials produced.
- an updated list of groups involved in the stakeholder group.
- successes and failures within the IBA.

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Appendix 1. IBA Partners

BirdLife International

A pioneer in its field, BirdLife International (BL) is the first non-government organisation dedicated to promoting world-wide interest in and concern for the conservation of all birds and the special contribution they make to global biodiversity. BL operates as a partnership of non-governmental conservation organisations, grouped together within geographic regions (e.g. Europe, Africa, Americas) for the purpose of planning and implementing regional programmes. These organisations provide a link to on-the-ground conservation projects that involve local people with local expertise and knowledge. There are currently 20 countries involved in the Americas program throughout North, Central and South America. For further information about BirdLife International, check the following web site: <<http://www.birdlife.net/>>. The Canadian Important Bird Areas Program has been undertaken by a partnership of two lead agencies. The Canadian Nature Federation and Bird Studies Canada are the Canadian BirdLife International partners.

The Canadian Nature Federation (CNF):

The Canadian Nature Federation is a national conservation organization with a mission to be Canada's voice for the protection of nature, its diversity, and the processes that sustain it. The CNF represents the naturalist community and works closely with our provincial, territorial and local affiliated naturalists organizations to directly reach 100,000 Canadians. The strength of our grassroots naturalists network allows us to work effectively and knowledgeably on national conservation issues that affect a diversity of ecosystems and human populations in Canada. The CNF also works in partnership with other environmental organizations, government and industry, wherever possible. Our approach is open and co-operative while remaining firm in our goal of developing ecologically-sound solutions to conservation problems. CNF's web site is <http://www.cnf.ca>.

Bird Studies Canada (BSC)

The mission of Bird Studies Canada is to advance the understanding, appreciation and conservation of wild birds and their habitats, in Canada and elsewhere, through studies that engage the skills, enthusiasm and support of its members, volunteers, staff and the interested public. BSC believes that thousands of volunteers working together, with the guidance of a small group of professionals, can accomplish much more than could the two groups working independently. Current programs collectively involve over 10,000 volunteer participants from across Canada. BSC is recognised nation-wide as a leading and respected not-for-profit conservation organisation dedicated to the study and understanding of wild birds and their habitats. BSC's web site is <http://www.bsc-eoc.org/>.

Federation of Ontario Naturalists

The Federation of Ontario Naturalists (FON) protects Ontario's nature through research, education, and conservation action. FON champions wildlife, wetlands and woodlands, and preserves essential habitat through its own system of nature reserves. FON is a charitable organization representing 15,000 members and over 105 member groups across Ontario. FON' web site is <<http://www.ontarionation.org>>.

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Appendix 2. – Average Raptor numbers at HBMO

Table 2: Peak Dates and Average Numbers of Raptors at Holiday Beach

Type of Raptor	Yearly Average	Peak Dates
Broad-winged Hawk	40 000	Sept. 12 to Sept. 20
Sharp-shinned Hawk	1 400	Sept. 12 to Oct. 9
Red-tailed Hawk	6 000	Oct. 9 to Nov. 22
Turkey Vulture	10 000	Oct. 1 to Oct. 21
Kestrel	3 000	Sept. 2 to Oct. 9
Red-shouldered Hawk	800	Oct. 10 to Nov. 20
Northern Harrier	500	Sept. 2 to Nov. 28
Cooper's Hawk	450	Sept. 15 to Oct. 28
Rough-legged Hawk	150	Oct. 28 to Nov. 28
Osprey	100	Aug. 30 to Oct. 3
Northern Goshawk	25	Oct. 1 to Nov. 20
Golden Eagle	30	Oct. 17 to Nov. 21
Bald Eagle	50	Aug. 30 to Nov. 12
Merlin	25	Sept. 13 to Oct. 17
Peregrine Falcon	15	Sept. 19 to Oct. 6