
NATURAL WONDERS CONSULTING FIRM

AVIAN AND SPECIES AT RISK SURVEYS

of the proposed
Sandy Lake-
Sackville River
Regional Park

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Image taken by David Patriquin

EXECUTIVE SUMMARY

In 2017 avian surveys were commissioned by the Sandy Lake Conservation Association for the purpose of augmenting their baseline data and to acquire additional information on the current status of bird species within the proposed Sandy Lake Park.

Initial surveys were conducted during the 2017 breeding season with additional breeding surveys and year-round data gathered in 2018 and 2019. The followup surveys also placed special emphasis on gathering data on any avian or non-avian Species At Risk that might be living within the proposed park boundaries.

The proposed park boundaries, also referred to in this report as simply the proposed park, can be found on the map labeled **Map 1: Boundary Map**.

Survey preparation work began by traveling all roads bordering the proposed park for the purpose of identifying public access points into the project area. Access Points used included those trail heads associated with Jack Lake and Sandy Lake off of Smiths Road, as well as trails entering the proposed park area from Gatehouse Run, Viscount Run and Savoy in Kingswood North. Surveys were not just limited to well established trails but involved travelling the shorelines of each of the water bodies present, which included all but some of the small privately owned shore line properties of Sandy Lake, all of Jack Lake and all of Marsh Lake and its surrounding wetlands.

For the purpose of the surveys we also gained permission to use private access points available through the Agropur Cooperative Dairy property. Game trails were also traveled whenever they were encountered. Details on the Avian Species found within the proposed park are located in Table 1.

Surveys conducted on the proposed park lands during the 2017 to 2019 breeding seasons detected 21 species of interest to Federal and Provincial conservation bodies.

Species at Risk living within the proposed park boundaries include: Barn Swallow, Canada Warbler, Common Nighthawk, Common Snapping Turtle, Eastern Painted Turtle, Eastern Wood-Pewee, Evening Grosbeak, Little Brown Myotis, Monarch, Moose (Mainland Population), Olive-sided Flycatcher, Rusty Blackbird and Wood Turtle. The information on these species is found in this report under Species of Concern and in Table 2. Several important wildlife corridors were identified during the surveys, including two major wildlife corridors. The locations of these two major corridors along with a dozen smaller but important wildlife corridors are marked on **Map 2: Wildlife Corridors**.

INTRODUCTION AND BRIEF PHYSICAL DESCRIPTION OF THE STUDY AREA

The eastern portion of the proposed park is covered primarily by mature forest, made up of coniferous, hardwoods and mixed woodlands. This area is populated with a network of trails known locally as the Jack Lake Trails and form a web of walkways that allow people and wildlife to easily travel between the Jack Lake area and the eastern half of Sandy Lake. It includes small areas of evergreen dominated and hard wood dominated mixed woodlands and wooded wetlands. Natural springs are common and trails are often flooded and contain many wet sections. This forest canopy is dominated by Red Spruce, with large Hemlocks and White Pines scattered throughout. In the wetter areas the forest floor is covered by various species of mosses. In the dryer more open sites Sheep Laurel, Mayflower, and Teaberry are common.

The topography includes quartzite ridges where animal dens are common. The woodlands that include the western half of Sandy Lake have been more heavily impacted by man and contain a number of human features, including homes, businesses, and clearcuts.

Surprisingly this area continues to have a fairly good diversity of wildlife due in part to the shoreline remaining largely wooded, private lots maintaining most of their tree cover and the fact that the remainder of the lake is bordered by undeveloped wildlife rich woodlands.

The northern and northwestern portions of the proposed park are centred on Marsh Lake which is surrounded by an extensive wetlands network. This northern portion is delineated to the south and east by power line corridors and to the west by Kingswood North subdivision. To the north the proposed park boundaries fall just short of the developed areas of Lower Sackville. This area contains undeveloped riparian habitat along both banks of the Sackville River which skirts just south of its northern border.

The southwestern portion of the proposed park has been heavily impacted by a series of clearcuts and the Kingswood North residential development. However, these clearcuts are regenerating nicely and are further enhanced by a riparian habitat containing many large trees. These trees are representative of the forest that existed there before the cutting and are aiding in the recovery and recolonization of the area by wildlife.

Squeezed between Sandy Lake and the regen sites there is a green belt that is part of an area that plays a very important role as part of the Sandy Lake Wildlife Corridor. (See Map 2: Wildlife Corridors.) This major wildlife corridor has an average width of 1000 meters and is well travelled by a wide variety of wildlife including the Endangered Mainland Moose. This corridor is also used regularly by Black Bears and other large mammals and has a large healthy population of midsized and small mammals such as Bobcats, Red Fox, Woodchucks, and Snowshoe Hares. This wildlife corridor is a major influence on what species survive within the park and how the

park enhances and influence areas well outside the proposed park's boundaries. This corridor is one of two highly important Major Wildlife Corridors that were identified are being crucial to wildlife health and diversity within the proposed park. The second major wildlife corridor is the Sackville River Valley Corridor. A number of minor wildlife corridors were also encountered.

For more information on the important of natural corridors in the area, see the [Halifax Green Network Plan](#).

WETLANDS AND WOODLANDS

For the purposes of our surveys, the definitions of the wetland and woodland habitats were kept simple and were defined on the basis of what they provided for bird species in the form of food, shelter, and nesting sites.

Much more detailed descriptions of the various wetland and woodland habitats that exist within the proposed park boundaries can be found on David Patriquin's excellent website www.sandylakebedford.ca.



Image taken by David Patriquin

All Woodland Habitats

Some species in the park are common due to the simple fact that they are able to make use of most of the park's habitats. Species like the American Crow, can be encountered in all of the habitats within the park's boundaries. Other species such as the Magnolia Warbler can be sighted in any of the park's woodland habitats.

The following species are readily encountered in any of the proposed park's forests: American Crow, American Robin, Black-capped Chickadee, Blue Jay, Common Raven, Downy Woodpecker, European Starling, Hairy Woodpecker, Magnolia Warbler, Mourning Dove, Northern Flicker, and Purple Finch.

Hardwoods

For the hardwood loving species in the proposed park, the exact species of hardwoods growing in the area are often less important than the age of the trees present.

Within the park, the main distinguishing feature is whether the hardwood habitat is made up of younger or older trees. A small exception is that a couple of species found in the park such as Veery are also attracted to wet hardwood dominated areas.

Young Deciduous Forests

Young deciduous forests in the park are composed of Red Maple, Red Oak, White Birch, Choke Cherry and other colonizing species of trees and bushes. They are rich in berry producing bushes and wildflower species and are attractive to various sun loving species such as butterflies.

The following bird species were commonly encountered in this habitat within the proposed park: American Goldfinch, American Redstart, American Robin, American Tree Sparrow, Black-and-White Warbler, Brown-headed Cowbird, Cedar Waxwing, Chestnut-sided Warbler, Common Yellowthroat, Gray Catbird, Nashville Warbler, Purple Finch, Ring-necked Pheasant, Song Sparrow, Veery, White-throated Sparrow, and Yellow Warbler.

Mature Hardwood Stands

The mature hardwood stands in the park are small in size and frequently intergrade with hardwood dominated mixed woodlands. Larger tree species present included Red Maple, Red Oak, Sugar Maple, American Beech and Yellow Birch. This habitat attracts a mixture of common and uncommon woodland bird species.

The follow bird species are typical of the Sandy Lake proposed park mature hardwood stands: Black-and-White Warbler, Black-throated Blue Warbler, Broad-winged Hawk, Evening Grosbeak, Least Flycatcher, Northern Goshawk, Northern Saw-whet Owl, Ovenbird, Pileated Woodpecker, Tennessee Warbler, White-breasted Nuthatch, and Yellow-bellied Sapsucker

Coniferous

For the coniferous loving species of the park, three main distinctions were noted. Some species such as the Merlin and Blue-headed Vireo were readily encountered in any of the coniferous habitats. Others like the Hermit Thrush and Gray Jay showed a strong preference for wet coniferous woodlands. For species such as Pine Siskin and Brown Creeper, the larger size coniferous trees were the strongest draw.

Wet Coniferous Forests

These wet coniferous forests are most often associated with the proposed park's wetlands. Tree species include Tamarack, Black Spruce, Red Spruce and Balsam Fir.

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This forest type within the park contains both common and uncommon bird species including: Boreal Chickadee, Canada Warbler, Common Yellowthroat, Gray Jay, Hermit Thrush, Olive-sided Flycatcher, Ruby-crowned Kinglet, Spruce Grouse, Swainson's Thrush, Winter Wren, and Yellow-bellied Flycatcher.



Ruby-crowned Kinglet by Andy Reago & Chrissy McClarren

Mature Coniferous Stands

The mature coniferous stands in the park make up some of the best birding spots in the park as they contain a rich variety of woodland bird species including: Black-throated Green Warbler, Bay-breasted Warbler, Black-backed Woodpecker, Blackburnian Warbler, Blue-headed Vireo, Boreal Chickadee, Brown Creeper, Dark-eyed Junco, Evening Grosbeak, Golden-crowned Kinglet, Pileated Woodpecker, Pine Grosbeak, Pine Siskin, Red-breasted Nuthatch, Red Crossbill, White-winged Crossbill, and Yellow-rumped Warbler

Middle Age Coniferous Forests

The following species are birds that can be found in all coniferous dominated areas of the park: Blue-headed Vireo, Black-throated Green Warbler, Blue-headed Vireo, Cape May Warbler, Dark-eyed Junco, Merlin, Northern Parula, Pine Siskin, and Yellow-rumped Warbler

Mixed Woodlands

For the purpose of this study, Mixed Woodlands were classified in three ways: Hardwood Dominated Mixed Woodlands, Coniferous Dominated Mixed Woodlands and Mature Mixed Woodlands.

As their names imply, all three habitats contained a mixture of trees and bird species found in the more coniferous and hardwood portions of the park.

Hardwood Dominated Mixed Woodlands

The following is a list of species encountered in the proposed park's Hardwood Dominated Mixed Woodlands: Black-and-White Warbler, Black-throated Blue Warbler, Ovenbird, Red-eyed Vireo, Ruby-crowned Kinglet, Ruby-throated Hummingbird, Tennessee Warbler, White-breasted Nuthatch, White-throated Sparrow, Yellow-bellied Sapsucker, and Yellow-rumped Warbler

Coniferous Dominated Mixed Woodlands

Inside the proposed park the Coniferous Dominated Mixed Woodlands contained less species than expected, perhaps because there were always better coniferous based habitats containing larger coniferous trees nearby.

Commonly encountered species in this habitat included but was not limited to the following species: Blue-headed Vireo, Black-capped Chickadee, Golden-crowned Kinglet, Magnolia Warbler, Red-breasted Nuthatch, Ruby-crowned Kinglet, and Yellow-rumped Warbler.

Mature Mixed Woodlands

The Mature Mixed Woodlands of the proposed park are home to a wide variety of woodland birds.

Some of the bird species most strongly associated with this habitat include: Bay-breasted Warbler, Barred Owl, Bay-breasted Warbler, Black-throated Green Warbler, Blue-headed Vireo, Eastern Wood Pewee, Evening Grosbeak, Great-horned Owl, Northern Saw-whet Owl, Pileated Woodpecker, Ruby-crowned Kinglet, Ruffed Grouse, and Yellow-rumped Warbler

Urban Edges

Urban Edges are the areas lying along the proposed borders of the park where man has either altered the natural habitats or has changed the species that are using the natural habitats. Some human influences such as bird feeders caused additional species to be found in the park. Amongst the feeder related species some would be classified as rare or uncommon visitors and/ or migrants. Examples for the park include White-crowned Sparrow and Fox Sparrow. One of the proposed park's most important Urban Edge species is the provincially endangered Barn Swallow.

Commonly encountered species along the Urban edges include: American Goldfinch, American Tree Sparrow, Barn Swallow, Brown-headed Cowbird, Chipping Sparrow, Downy Woodpecker, European Starling, Evening Grosbeak, Hairy Woodpecker, Mourning Dove, Purple Finch, Ring-necked Pheasant, Rock Pigeon, Ruby-throated Hummingbird, Song Sparrow, and Yellow Warbler.



Barn Swallow by VJ Anderson

Regenerating Forest Areas

In 2013 a 2.4 km stretch of forest was clearcut just west of Sandy Lake. The cutting process left behind five strips of forests containing many large trees. These strips were left uncut as they bordered brooks and streams.

These remaining strips contain important riparian habitat and species. Each are also acting as minor wildlife corridors, feeding into the major wildlife corridor running between the Kingswood North subdivision and Sandy Lake. (See Map 2: Wildlife Corridors.)

These clearcuts are regenerating nicely and are further enhanced by the riparian habitat which is representative of the forest that existed there before the cutting, and are aiding in the recovery and recolonization of the area by wildlife. These regeneration forest areas are also simply referred to in this report as regens.

Within just the regens themselves, commonly encountered nesting species included: American Goldfinch, Brown-headed Cowbird, Cedar Waxwing, Common Yellowthroat, Gray Catbird, Nashville Warbler, Northern Parula, Olive-sided Flycatcher, Palm Warbler, Ring-necked Pheasant, Song Sparrow, White-throated Sparrow, Wilson's Warbler, Yellow-bellied Flycatcher, and Yellow Warbler.

The riparian habitats running through the regens contain many species that often use the regens for feeding purposes. The conjunction of these two habitats currently represent the highest bird densities found in the proposed park area and is the best location in the park for viewing the often-elusive Winter Wren.

Wetlands and Water Bodies

At first look the wetlands of the proposed park seem deceptively quiet due to the lack of larger groups of waterfowl that are often associated with rich aquatic habitats such as freshwater marshes. A closer inspection reveals that the park's wetlands are quite varied and each time we revisited them during our surveys, additional species were turned up.

Within the proposed park, the Sackville River Wildlife Corridor (See Map 2: Wildlife Corridors) provides the richest diversity of wetland bird species. It also provides important breeding habitat for Species at Risk, such as the Common Snapping Turtle and the Wood Turtle. The Sackville River is one of the two major wildlife corridors that is responsible for the health and diversity of the wildlife species living in the park.

Three lakes are found within the park boundaries: Sandy Lake, Marsh Lake and Jack Lake. Each support a unique association of wildlife, as well as important habitat for additional waterfowl and water-related species. Sandy Lake in particular, is important to the breeding success of the Common Loon, and other species requiring deeper bodies of water. Marsh Lake and associated wetlands attract a variety of birds, reptiles and amphibians. Jack

Lake, with its ring of boreal based wetland vegetation attracts bog loving species. The stream that connects Jack Lake to Paper Mill Lake also provides a route for wildlife species to travel in and out of the park.

Other important streams in the park include Johnston's Brook, Karen's Brook and Peverill's Brook. Johnston's Brook can be found at the southwest corner of Sandy Lake and provides an important access point for species travelling into and out of the proposed park. It is fed by two wetlands which lie well outside the borders of the proposed park and in turn these areas are enriched by wildlife species living within the proposed park's boundaries. Johnston's Brook is discussed in greater detail under the Common Snapping Turtle entry in this report. Karen's Brook is one of the streams that cross the regenerating clear cuts and enhances that area by providing important riparian habitat. Peverill's Brook is out flowing to Marsh Lake, and then to the Sackville River. Peverill's Brook is the most important connection between the larger wetlands in the study area. In addition to birds it is associated with a rich diversity of amphibians, reptiles and mammals.

For more details on the various amphibian, reptiles and mammals found in this area please visit the Sandy Lake Conservation Association webpage at <http://sandylake.org/>

Wetland bird species encountered during our surveys included the following: Alder Flycatcher, American Black Duck, American Woodcock, Bald Eagle, Belted Kingfisher, Canada Goose, Canada Warbler, Common Loon, Common Merganser, Common Yellowthroat, Double-crested Cormorant, Great Black-backed Gull, Great Blue Heron, Green Heron, Green-winged Teal, Herring Gull, Hooded Merganser, Little Blue Heron, Mallard, Northern Harrier, Northern Waterthrush, Olive-sided Flycatcher, Osprey, Palm Warbler, Pied-billed Grebe, Red-winged Blackbird, Ring-billed Gull, Ring-necked Duck, Rusty Blackbird, Solitary Sandpiper, Sora, Spotted Sandpiper, Swamp Sparrow, Tree Swallow, Wilson's Warbler, and Wood Duck.

More details of all bird species listed above can be found in Table 1.

SPECIES OF CONCERN

Surveys conducted within the proposed Sandy Lake-Sackville River Regional Park lands during the 2017 breeding season, and the followup surveys in 2018 and 2019, detected the following 21 species as species of interest to Federal and Provincial conservation bodies.

A summary of each species official status can be found in Table 2.

American Woodcock

The proposed Sandy Lake Park contains important breeding habitat for this species in the form of wetlands, alder swales, open areas and regenerating clear-cuts. In both Canada and the United States, the American Woodcock

is classified as a migratory game bird. It is legally hunted in both countries but harvest levels have been dropping over the past forty years. Like many migratory species the Woodcock's decline is believed to be due to loss of both wintering and breeding habitat.

Over the past few decades, the American Woodcock has experienced moderate declines in its population here in Nova Scotia and across Canada. As a result, the American Woodcock has been identified by the Federal Bird Conservation Strategy program as a Nova Scotia Priority Species for conservation work. That organization's goal is to see a fifty percent increase in the Woodcock's population.

Barn Swallow

In Nova Scotia and throughout Canada Barn Swallow populations have suffered a very serious decline that has resulted in an eighty percent decrease in its numbers. Barn Swallows are a native breeding species that feed exclusively on flying insects captured in flight during aerial foraging.

A small population of Barn Swallows consisting of several pairs nest along the urban edges of the proposed park's boundaries and rely on its various open areas to provide important foraging habitat. Some feeding habitat also exists outside the proposed park but is not protected in any form and is vulnerable to development. Provincially the Barn Swallow was placed on the Nova Scotia Endangered Species Act in 2013. Nationally it is classified as a Threatened Species and was added to COSEWIC in 2011 and to SARA Schedule 1 in 2017.

See Table 2 for additional details.

Bay-breasted Warbler

The Bay-breasted Warbler is an uncommon breeder in areas of the proposed park where mature coniferous trees are present. Environment Canada provides the following statement on this species: "Poor survey coverage over most of its breeding range, and little information on the breeding biology of this species, suggests that this is a species that warrants extra attention."

It is known that it needs mature coniferous forests to survive and that nearly the entire world breeding population relies on Canadian forests for its survival. The number of Bay-breasted Warblers nesting in Nova Scotia varies from year to year but overall, this species has to be declining as the amount of mature coniferous forests in Nova Scotia decreases. The Federal Bird Conservation Strategy has it listed as a Nova Scotia Priority Species and has a goal of increasing this species in the province by fifty percent.

Belted Kingfisher

The Belted Kingfisher has experienced long term decline since its designation as the official bird of Halifax. This decline is not only due to habitat loss but to sensitivity to human disturbance around its nesting and feeding sites.

Most of the proposed park's wetlands provide much lower human disturbance levels than are typically found in and around the urban core. In addition, the proposed park provides several wetland habitats of value to this species including banks which are needed for the construction of their nesting cavities.

The Belted Kingfisher is listed as a Nova Scotia Priority Species by the Federal Bird Conservation Strategy which would like to see an increase of fifty percent within the province for this species.

Boreal Chickadee

This cavity nesting species is an uncommon year-round resident and breeder in the park's wet coniferous woodlands and mature softwood forests. The Boreal Songbird Initiative identifies mature coniferous forests as the most important winter habitat necessary for the survival of this species.

In 2008 bird researchers Hadley and Desrochers indicated that conservation goals should center around preserving this species' wintering habitat. Studies also show that the Boreal Chickadee is an important indicator species of the health of coniferous forests. This chickadee is a Federal Bird Conservation Strategy Nova Scotia Priority Species

Canada Warbler

The Canada Warbler is an uncommon breeder in the park's forested wetlands. This long distant migrant has been in decline since the seventies and internationally its decrease has been linked to the loss of its wintering habitat in South America.



Canada Warbler by Matt MacGillivray

In 2010 bird researcher, Reitsma showed that the loss of understory on its breeding sites was also a significant factor in its decline. In 2016 Environment Canada announced that the Canada Warbler is "highly vulnerable to collisions with buildings and vehicles". Since 2008 it has been listed as threatened by COSEWIC and gained legal protection in 2010 when it was added to SARA Schedule 1. In Nova Scotia it is listed as Endangered by the Nova Scotia Endangered Species Act.

The proposed park in Sandy Lake provides important breeding habitat for the Canada Warbler as well as a location where migrating birds can escape the brighter lights of the urban core reducing the number of collisions caused by buildings. In addition, protection of the proposed park's lands from development would provide a site of very low vehicle traffic.

Cape May Warbler

The Cape May Warbler is an uncommon breeder in the wet coniferous woodlands of the park. The Cape May Warbler's numbers vary annually and in recent years their population has shown an upswing in numbers. This has resulted in little major conservation concerns for this species based upon current assessments. This may change if this species sees another downswing in its population trend. Currently it is still listed by the Federal Bird Conservation Strategy as a Nova Scotia Priority Species but this may change in the near future.

There are concerns that forestry practices in Canada could have a negative effect on this species, so park lands where this species' habitat is protected continue to be important.

Common Nighthawk

The Common Nighthawk breeds in small numbers in the regeneration clearcuts and other open areas of the park. This species has also been reported a number of times passing through the proposed park area during its fall migration.

In the eighties the Common Nighthawk population began to plummet, resulting in a reduction in numbers of an estimated sixty-eight percent. A ten year study ending in 2015 showed that the decline was continuing but had slowed to an average of twelve percent per year. The most recent data collected in the past couple of years indicates that the population may be reaching a point of stabilization. For this reason, in 2017 COSEWIC degraded its rating from Threatened but it remains on the list as a Species of Special Concern. It continues to be listed as Threatened on SARA Schedule 1, and in the Nova Scotia Environmental Species Act.

Because the reasons for the Common Nighthawk's decline are still unclear, one of the federal mandates is to gain more knowledge about this species.

Common Snapping Turtle

The Common Snapping Turtle is listed both by COSEWIC and SARA as a species of Special Concern. And it is found in the Nova Scotia Endangered Species Act under Vulnerable.

Our surveys in the proposed park identified several important Common Snapping Turtle locations, including those that are currently being used as: 1. successful nesting sites, 2. attempted breeding sites, 3. feeding locations, 4. important travel corridors and 5. winter hibernation spots. However due to time restrictions it is highly unlikely that these surveys located all sites within the study area that are of importance to the survival of this species.

Snapping Turtle activity was detected at the following four locations within the proposed park boundaries:

1. SANDY LAKE

While most of the nearby lakes in Hammonds Plains and Bedford have lost their nesting habitat for Snapping Turtles, Sandy Lake still has at least one successful breeding site.

Habitat improvement projects are currently underway by the Nova Scotia Turtle Patrol to improve areas along the Sandy Lake shoreline where Snapping Turtles are still making attempts to breed but are no longer able to do so successfully. Sandy Lake also serves as a summer feeding site and the only confirmed winter hibernation site within the Sandy Lake Proposed Park.

2. JOHNSTON'S BROOK

Johnston's Brook flows into the southwest corner of Sandy Lake. It crosses underneath the lane into the Agropur Cooperative Dairy Bedford Plant then splits into two forks. The Northern Fork crosses Gatehouse Run and is being fed by two wetlands, one wetland lying between Lucasville Road and Hammonds Plains Road, and a second wetland lying between Gatehouse Run and Lucasville Road. In addition it is also connected to a series of small ponds along Voyager Way on the south side of Hammonds Plains Road. The Southern Fork winds its way through low lying areas located along the Farmers Dairy Road and skirts a drumlin before crossing over the Hammonds Plains Road. Snapping Turtles were found travelling along the entire length of these forks with unsuccessful breeding attempts at several locals.

3. JACK LAKE

Snapping Turtles were discovered using the connector stream between Jack Lake and Paper Mill Lake. This stream is currently being used as a corridor for Snapping Turtles travelling between the two bodies of water. (See Map 2: Wildlife Corridors)

Currently only unsuccessful breeding attempts have been recorded at Paper Mill Lake and there is insufficient data to determine if Snapping Turtles are attempting to breed in Jack Lake. However adjacent breeding habitat indicates that they likely are.

4. SACKVILLE RIVER

The Sackville River offers the largest and most easily used corridor for Snapping Turtles traveling in and out of the proposed park boundaries. The river also provides unique feeding opportunities not available anywhere else in the proposed park. It also provides the best chance for maintaining genetic diversity for Snapping Turtles living in the area. Two large breeding sites occur along the Sackville River within the proposed boundaries of the Sandy Lake Park. Both breeding sites currently suffer from high degrees of predation due to human encroachment and influences. The good news is that both sites also have a high potential for improvement through human intervention in the form of habitat protection, habitat restoration and enhancement.

For the past three years Heffler Forest Products have been working with the Nova Scotia Turtle Patrol to improve turtle nesting habitats at the larger of the two sites which is located on their property. Although work is still needed to establish a sustainable population, their efforts have led to at least one successful nest in each of the last three years.

Snapping Turtles living in the Sackville River are also benefiting from the habitat improvements being implemented by the Sackville Rivers Association. Although no evidence was collected during our surveys it is probable that Snapping Turtles are also using Marsh Lake and its surrounding wetlands. This supposition is based in part on the fact that Marsh Lake provides the most direct connection between the confirmed Snapping Turtle sites on the Sackville River and those in and around Sandy Lake.

Potential nesting sites also lie adjacent to the stream connecting Marsh Lake to the Sackville River Corridor. Additional turtle surveys of Marsh Lake and its connecting wetlands are scheduled for the 2020 breeding season. It is hoped that these surveys will help us gain a better understanding of the role that area plays in the lives of the park's turtle species.

Eastern Painted Turtle

Eastern Painted Turtles are present in each of the park's proposed wetlands. However, during our surveys they were detected in lower than expected numbers. This may be in part due to the fact that the turtle surveys undertaken focused on methodologies best suited to finding the rare Wood Turtles and Snapping Turtles.

It is recommended that further surveys are undertaken to determine this species' true population number within the proposed park. In 2018 the Eastern Painted Turtle was added to COSEWIC as a species of Special Concern. It is currently under consideration for addition to SARA Schedule 1 and may soon be added to the Nova Scotia Endangered Species Act.

Eastern Wood-Pewee

The Eastern Wood-Pewee is a common breeder in the park's mixed woodland stands, especially in those stands that contain large hardwood trees and a mid-level canopy. This member of the flycatcher family specializes in capturing air borne insects that live in the forest under its canopy.

Its decline over the past few decades has led to it being added in 2012 as a species of Special Concern by COSEWIC. The following year it was listed as Vulnerable in the Nova Scotia Endangered Species Act. In 2017 it received additional protection with its inclusion on SARA Schedule 1. It is also recognized as a Nova Scotia Priority Species by Federal Bird Conservation Strategy.

Evening Grosbeak

It is an uncommon annual visitor to the park, and likely breeds. It has been reported as breeding inside the park boundaries in recent years but no breeding evidence was gathered during 2017-2019 surveys. However, those surveys coincided with a low breeding period for this species in the Halifax region of Nova Scotia. Currently it is most commonly encountered along the urban edges of the park at feeders and in the mature forest areas of the park.

This once well-known and popular species has suffered a severe population decline in Nova Scotia and across Canada at an estimated drop of 77 to 90 percent. The primary reason for its decline is the loss of mature and old-growth mixed woodlands and coniferous forests.

The establishment of proposed park boundaries will help protect these mature forests that the Evening Grosbeak and other species depend on for their breeding success.

In 2016 the Evening Grosbeak was added to both COSEWIC and SARA Schedule 1 as a species of Special Concern. In 2017 it was listed as Vulnerable in the Nova Scotia Endangered Species Act.

Little Brown Myotis

In 2010 the invasive fungus *Pseudogymnoascus destructans* arrived in Atlantic Canada and began devastating the region's local bat populations via a disease named White-nose Syndrome. In a few short years, ninety four percent of Nova Scotia's Little Brown Bats had been wiped out of existence. Their rapid decline landed them on the Nova Scotia Endangered Species Act in 2013 at its highest risk category of Endangered. Federally, in 2014 emergency measures led to the Little Brown Bat being added to COSEWIC and SARA Schedule 1 also under the category of Endangered. On June 10, 2018 a single Little Brown Bat was observed feeding over Sandy Lake in the early evening just after sunset. The bat was observed at close range through binoculars and showed no signs or lesions

often associated with White Nose Syndrome. However those signs may not have been detectable. More importantly however, the bat was demonstrating normal feeding behavior in proper habitat and during the correct time of day. This single bat appeared to be healthy and likely represents one of the few individuals that survived the initial White-nose Syndrome outbreak. This bat may be an individual that developed resistance to the disease-causing fungus and could act as a nucleus for this species becoming reestablished in the Sandy Lake area.

Historically Little Brown Bats have bred in the area covered by the proposed park. Ample breeding and feeding habitat exist in the proposed park for this species. No known winter hibernacula have been identified within the proposed park's boundaries.

Monarch

The Monarch is a species of butterfly uncommonly encountered in the proposed park's open areas and urban edges during the species' breeding season.

Small numbers may also migrate through the proposed park in the spring but the area would not be considered as a fall migration route for the species. Milkweed is the food plant for the caterpillars of the species but the adult feed on a wide range of flowers. The Monarch's population has declined by ninety percent and is globally endangered.

In Canada it is listed as Endangered by COSEWIC, as well as the Nova Scotia Endangered Species Act. It is recommended that botany surveys are carried out to determine if either Swamp Milkweed or Common milkweed exist within the proposed park boundaries.

Moose - Mainland Population

In 2017 moose signs were sighted within the proposed park area near Sandy Lake. Individuals that are part of a small herd of Moose that range from Mount Uniacke to Peggy's Cove wander through the proposed park area at least a couple times a year. As a result of this behavior the department of Lands and Forestry consider the proposed park lands as important habitat for the Mainland Moose.

These Mainland Moose often travel along a major wildlife corridor that is currently unprotected and is in danger of being lost to development but would be protected within the proposed park boundaries if established. The mainland population of Moose is recognized under the scientific name *Alces alces americana* and has been included in the Nova Scotia Endangered Species Act since 2003.

Olive-sided Flycatcher

The Olive-sided Flycatcher is an uncommon summer visitor and breeder in the park's wetlands and regenerating woodland sites. This bird can be seen sitting near the edges of these habitats in tall trees, then swooping out over the open areas to capture flying insects. Their loud calls mean they are often heard in the proposed park before they are seen.

Breeding Bird Surveys show that the Olive-sided Flycatcher populations in the province and across Canada have been declining since 1970. This flycatcher is listed as threatened by SARA and the Nova Scotia Endangered Species Act and as a species of Special Concern by COSEWIC.

A 2007 study suggested that the nesting success of the Olive-sided Flycatcher on clearcut sites is lower than locations that are regenerating as the result of fire.

Pine Grosbeak

The Pine Grosbeak is an uncommon visitor to the mature coniferous stands in the park. It is most often sighted in the posed park during the winter months.

Pine Grosbeaks are primarily members of the boreal forest in northern Canada but their breeding range includes Nova Scotia. They are classified as an irruptive species moving south in some winters in large numbers. When these southward irruptions occur this species often shows up in the proposed park area and some may stick around to breed once the summer season begins. Since no irruptions occurred during our study period this speculation could not be confirmed.

The Federal Bird Conservation Strategy has designated the Pine Grosbeak as a Nova Scotia Priority Species and would like to see its population in the province increase by fifty percent.

Ruffed Grouse

The Ruffed Grouse can be encountered throughout the proposed park area in a wide variety of habitats. Locally numbers go up and down in response to the number of predators present, but its overall population in the province stays pretty consistent. It is also a common game bird species that is popular with Nova Scotia hunters. Like most game species, numbers are monitored and efforts are made from time to time to increase a certain species' numbers.

At the moment the Federal Bird Conservation Strategy has listed the Ruffed Grouse as a NS Priority Species and has targeted it for a population increase of fifty percent.

Rusty Blackbird

The Rusty Blackbird is an uncommon visitor to the park's wetlands, but it has bred in the past. The Rusty Blackbird has been described as one of our most dramatically declined species. Estimates have the decline numbers ranging from eighty-five to ninety nine percent. It was present during our 2017-2019 breeding surveys, however nesting status was undetermined.

In 2006 it was listed by COSEWIC as a species of Special Concern. In 2009 it was added to SARA Schedule 1 under the same category. In 2013 the Nova Scotia Endangered Species Act listed it as Endangered.

Spruce Grouse

Not encountered during our 2017-2019 surveys. However, appropriate habitat for this species is still present in the form of wet coniferous woodlands with a forest floor heavily carpeted with mosses so it is likely that this species is still present. It is currently listed by the Federal Bird Conservation Strategy as a NS Priority Species. Their goal is to see the species increased by fifty percent.

Wood Turtle

The Wood Turtle was listed as Threatened by COSEWIC in 2007, by SARA Schedule 1 in 2010 and by the Nova Scotia Endangered Species Act in 2013.

Wood Turtle populations in the Sandy Lake Proposed Park are on the brink and may soon be extirpated from the area. Our surveys turned up only one unsuccessful breeding attempt by Wood Turtles in the study area and no additional sightings at their traditional locations. In recent years Wood Turtles have been sighted annually in the areas bordering Kingswood North. The Nova Scotia Turtle Patrol has recorded eleven sightings of Wood Turtles prior to 2018 in that neighborhood. In addition, the department of Lands and Forestry has a number of reports dating back to that time frame.

In 2018 and 2019 our surveys turned up no Wood Turtles in the Kingswood North area and none were reported to either the Nova Scotia Turtle Patrol or Lands and Forestry. One pair of Wood Turtles continue to attempt to nest along the Sackville River Wildlife Corridor. In recent years, those attempts have been unsuccessful due to nest predation.

More Wood Turtle surveys are planned for the spring, summer and fall of 2020, and efforts to help them to survive in the park are ongoing.

CONCLUSIONS AND RECOMMENDATIONS

The area within the proposed Sandy Lake-Sackville River Regional Park warrants protection as it provides important habitat for 21 Species of Interest to Federal and Provincial conservation bodies including 13 wildlife species officially designated as Species at Risk.

Establishment of the proposed park would protect two major wildlife corridors, including one identified in the Halifax Green Network Plan as vital to wildlife movement on and off the Chebucto Peninsula, which is a major conservation area.

Establishment of the proposed park boundaries would protect the Sandy Lake Wildlife Corridor which is a major connector for wildlife to the Blue Mountain-Birch Cove Lake Wilderness Area. Protection of this corridor would enhance the survival of species found in both parks as well as protect the biodiversity of these two areas. Establishment of the proposed park would protect an important portion of the Sackville River which is one of the two major wildlife corridors that act as crucial travel routes for wildlife and has the additional advantage of helping to direct moving wildlife away from man-made structures such as roads.

In addition to the two major wildlife corridors, establishment of this proposed park would protect at least a dozen smaller corridors containing important riparian and/or wetland habitats. Locations of these smaller corridors have been ground truthed and mapped out in this report thus providing important information for the more detailed decision-making process, necessary when plans are made beyond the higher, regional level planning.

Surveys indicate that the proposed park area provides an important oasis and support for wildlife living in green spaces located in the more urban areas surrounding the proposed park, and that failure to establish the proposed park's boundaries would lead to a collapse in wildlife species in terms of both volume and variety.

In order to protect the health and diversity of the current Sandy Lake Park, its borders need to be expanded to reacquire lands that were once set aside for inclusion in the park

Acquisition of additional lands found inside the proposed park boundaries is needed in order to protect the water quality and watersheds in the current Sandy Lake Park. These additional lands would include important watershed lands. Continued maintenance of this area as natural habitat is also essential for maintenance of water quality, aquatic habitat and flood amelioration in Sandy Lake to Sackville River watercourse and for the Sackville River system itself.

The proposed Sandy Lake-Sackville River Regional Park represents the last opportunity to acquire and protect wetlands and woodlands that directly connect the Sackville River watershed to Blue Mountain-Birch Cove Lake Wilderness Area.

Table 1: Status and Relative Abundance of Species Recorded During Avian Surveys	
Species	Current Status and Relative Abundance
Waterfowl	
American Black Duck	Common breeder throughout the various wetlands of the study area. The park also provides feeding grounds during spring and fall migrations.
Canada Goose	Uncommon breeder. This species is a relative newcomer to the park, but it is increasing in numbers in all wetlands in the general vicinity of the park, and is likely to do so within the proposed park boundaries.
Common Loon	Common breeder present in Sandy Lake during ice-free months.
Common Merganser	Confirmed breeder, most commonly encountered in the Sackville River portion of the proposed park.
Double-crested Cormorant	Present during the breeding season in Sandy Lake and along the Sackville River.
Green-winged Teal	Present in small numbers during the breeding season in Sandy Lake, Marsh Lake and Sackville River.
Hooded Merganser	Present during the breeding season and common fall migrant.
Mallard	Present year round within park boundaries.
Pied-billed Grebe	Present during the breeding season; breeding status undetermined.
Ring-necked Duck	Present during spring and fall migrations.
Wood Duck	Small numbers encountered during fall migration.
Birds of Prey	
Bald Eagle	Encountered in the park environs year-round.
Barred Owl	Most commonly encountered owl species in the park. Year-round resident; breeds in mature tree stands.
Broad-winged Hawk	Uncommon breeder within the hardwood stands of the park.
Great-horned Owl	Annual breeder and year-round resident.
Long-eared Owl	Has bred within the park in recent years, but was not encountered during our surveys. However, is likely still present; as appropriate nesting and feeding habitat remains.
Merlin	Common breeder in the mixed and coniferous woodlands of the park.

Northern Goshawk	Year-round resident and common breeder within hardwood stands.
Northern Harrier	Present during the summer and fall months in various wetlands. Breeding status undetermined.
Northern Saw-whet Owl	Confirmed breeder within the mature woodlands of the park.
Osprey	Common summer resident and breeder in wetlands.
Sharp-shinned Hawk	Common breeder and year-round resident in all woodland areas and urban edges.
Game Birds	
Ring-necked Pheasant	Common breeder and year-round resident of urban edges, young deciduous forests and regenerating sites.
Ruffed Grouse	Year-round resident and confirmed breeder in the mixed woodlands of the park.
Spruce Grouse	Not encountered during our 2017-2019 surveys. However, appropriate habitat for this species is still present in the form of wet coniferous woodlands with a forest floor heavily carpeted with mosses so it is likely that this species is still present.
Other Non-Passerines	
American Woodcock	Commonly encountered within the regenerating forests, open areas and wetland regions of the park. Confirmed breeder.
Belted Kingfisher	Commonly encountered in the park in the summer months, making use of wetlands for feeding purposes. Breeds in the park, along the banks of the Sackville River.
Black-backed Woodpecker	Rare visitor to the park. When present, found in the areas dominated by stands of large coniferous trees with plenty of large snags.
Chimney Swift	Reported in the past in this location, however none encountered during our surveys.
Common Tern	Reported in the past in this location, however none encountered during our surveys.
Downy Woodpecker	Common year-round resident and breeder. Found in all woodland habitats and urban edges.
Great Black-backed Gull	Year round, uncommon visitor to the park in wetland areas.
Great Blue Heron	Non-breeder, however uses wetland areas of the park for feeding purposes during spring, summer and fall.
Green Heron	Rare visitor to the park in wetland areas; one record of a summer wondering individual.
Hairy Woodpecker	Common year-round resident and breeder. Found in all woodland habitats and urban edges.

Herring Gull	Year-round common visitor to the park.
Killdeer	Although none were encountered during our surveys, they have been reported in the wetlands of the park.
Little Blue Heron	Not encountered during our surveys. Local residents report one spending the summer at Marsh Lake in recent years.
Mourning Dove	Common, year-round resident and breeder. Found in all woodland habitats and urban edges.
Northern Flicker	Common breeder in all woodland regions of the park.
Pileated Woodpecker	Breeder and year-round mature forest resident. A keystone species that provides nesting sites for other species in the park.
Ring-billed Gull	Common year-round visitor to the park.
Rock Pigeon	Common year-round resident and breeder along the urban edges of the park.
Ruby-throated Hummingbird	Common breeder throughout the park. Present in most of the park's woodland habitats but most common in hardwood dominated areas and urban edges.
Solitary Sandpiper	Uncommon fall migrant in wetlands. Encounter most often at Marsh Lake.
Sora	Spring migrant and occasionally present in summer. Breeding status undetermined.
Spotted Sandpiper	Spring and fall migrant. Also present during the summer months, likely breeder.
Yellow-bellied Sapsucker	Uncommon breeder in hardwood stands and hardwood dominated drumlins within the park.
Passerines	
Alder Flycatcher	Common breeder in wetland regions of the park. Especially in alder dominated locations.
American Goldfinch	Common breeder and year-round resident. Most common in the young deciduous forests, regenerating sites and the urban edges.
American Crow	Common breeder and year-round resident. Present in all habitat types found within the park.
American Redstart	Common woodland breeder, especially in portions of the park with younger deciduous forests.
American Robin	Common breeder and often present during other months of the year. Present in all habitat types found within the park.
American Tree Sparrow	Uncommon winter visitor. Most often encountered in the alder dominated areas, young deciduous hardwoods and urban edges.
Bank Swallow	Listed as a species found in the Sandy Lake Park, but none were observed during our surveys. However, it is highly likely that Bank Swallows pass through the park during their fall migration.
Barn Swallow	Common summer breeder in the urban edges. Often seen over or near Sandy Lake.

Bay-breasted Warbler	Uncommon breeder. Found in mature coniferous and mature mixed woodlands. Often encountered on or near the various drumlins in the park.
Black-and-White Warbler	Common breeder in the park's hardwood and mixed forests.
Black-capped Chickadee	Common year-round resident and breeder. Present in all habitat types found within the park.
Black-throated Blue Warbler	Uncommon breeder, often found near park drumlins, and hardwood dominated areas.
Black-throated Green Warbler	Common breeder in the park's mixed and coniferous forests.
Blackburnian Warbler	Uncommon breeder in regions of the park that contain larger softwood trees.
Blue Jay	Common year-round resident and breeder. Present in all habitat types found within the park.
Blue-headed Vireo	Common breeder in the park's mixed woodlands and evergreen dominated area.
Boreal Chickadee	Uncommon year-round resident and breeder in the park's wet coniferous woodlands and mature softwood forests.
Brown-headed Cowbird	Uncommon summer resident that lays its eggs in the nest of other passerine breeders found in the park. Most common in urban edges, young deciduous forests, and regen areas.
Brown Creeper	Year-round resident and common breeder in and around larger coniferous stands of the park.
Canada Warbler	Uncommon breeder in the park's forested wetlands.
Cape May Warbler	Uncommon breeder in the wet coniferous woodlands of the park. This species will be present in the park in some years and absent in others.
Cedar Waxwing	Uncommon breeder in the more open areas of the park, young deciduous woodlands, regen sites.
Chestnut-sided Warbler	Common breeder in the young deciduous areas of the park.
Chipping Sparrow	Present during the summer months; likely breeds but no breeding evidence gathered during surveys. Most common in the urban edges.
Common Nighthawk	The Common Nighthawk breeds in small numbers in the regens and other more open areas of the park. This species has also been reported a number of times passing through the proposed park area during its fall migration.
Common Raven	Common year-round resident and breeder. May be encountered in any of the park's habitats.
Common Yellowthroat	Common breeder in the park's wetland habitats, as well as lightly vegetated disturbed sites, regens, young deciduous forests.
Dark-eyed Junco	Common year-round resident and breeder. Most common in evergreen dominated areas of the park especially those parts where hemlocks are common.

Eastern Wood-Pewee	Common breeder in the park's mixed woodland stands. Especially in those stands that contain large hardwoods.
European Starling	Common year-round resident and breeder. Most common in the urban edges but may be encountered anywhere within the park.
Evening Grosbeak	Uncommon annual visitor to the park; may breed. Has bred inside the park boundaries in recent years. Currently most commonly encountered along the urban edges of the park at feeders and in the mature forest areas of the park.
Fox Sparrow	Regular spring and fall migrant. Most common along the urban edges.
Golden-crowned Kinglet	Common year-round resident, especially common in the park's coniferous dominated regions.
Gray Jay	Uncommon year-round resident in the park's wet coniferous regions. Over the last decade, this species has been declining in the Bedford- Hammonds Plains area. So it was a pleasant surprise to discover during the surveys that the study area continues to support the survival of the species in an area that continues to experience disappearing wildlife habitat.
Gray Catbird	Uncommon summer breeder in more open areas of the park, regens, and young deciduous forests.
Hermit Thrush	Common breeder, especially in wet coniferous forests of the park.
Least Flycatcher	Uncommon breeder in the park's hardwood stands.
Magnolia Warbler	Widespread common breeder. May be encountered in all habitats found in the park. Especially common in coniferous dominated areas and regenerating sites.
Nashville Warbler	Common breeder, especially in the park's more open and disturbed sites, including regens and young deciduous forests.
Northern Parula	Uncommon to common breeder in the park's coniferous dominated areas.
Northern Waterthrush	Uncommon breeder in the park's wetlands, especially along the habitats bordering the Sackville River.
Olive-sided Flycatcher	Uncommon summer breeder in the park's wetlands and regen sites.
Ovenbird	Common breeder in hardwood dominated areas found within the park.
Palm Warbler	Uncommon to common breeder in the park's wetlands and regenerating forest areas.
Pine Grosbeak	Uncommon visitor to the mature coniferous stands in the park.
Pine Siskin	Uncommon breeder in the park's coniferous habitats.
Purple Finch	Common widespread breeder throughout the park. Present in all woodland habitats in the park and its urban edges.
Red Crossbill	Uncommon breeder, present most years in the park, but numbers vary according to available cone crops. Common breeder in 2018 and 2019 in the parks coniferous forests.

Red-breasted Nuthatch	Common year-round resident and breeder, especially in areas of the park with larger evergreens.
Red-eyed Vireo	Widespread common breeder in the park's hardwood dominated mixed woodlands.
Red-winged Blackbird	Common breeder in the park's wetlands.
Ruby-crowned Kinglet	Common breeder throughout the park, especially common in the park's mixed woodlands.
Rusty Blackbird	Uncommon visitor to the park's wetlands; has bred in the past. Present during surveys, breeding status undetermined.
Scarlet Tanager	None detected during our breeding bird surveys, but have been listed as breeding in the past near Marsh Lake. They are rare breeders in the province that nest in mature hardwood stands which are present in the park.
Song Sparrow	Common breeder, especially in the park's urban edges, young deciduous forests and regenerating sites. Small numbers present in winter.
Swainson's Thrush	Uncommon breeder in the wet forests of the park.
Swamp Sparrow	Uncommon breeder in the park's wetlands.
Tennessee Warbler	Uncommon breeder in the park's hardwood dominated areas.
Tree Swallow	Annual breeder commonly seen feeding over the park's lakes and wetlands.
Veery	Uncommon summer breeder in the park's wet hardwood dominated forests.
White-breasted Nuthatch	Common breeder in the hardwood dominated areas. Present year round in the park in most years.
White-crowned Sparrow	Uncommon fall migrant. Most commonly encountered along the urban edges.
White-throated Sparrow	Common breeder, especially in the park's regenerating sites, but also in young deciduous forests and hardwood dominated mixed woodlands.
White-winged Crossbill	Common breeder in the park's spruce dominated areas.
Wilson's Warbler	Uncommon breeder in the park's wetlands and regens.
Winter Wren	Uncommon breeder in the park's wet coniferous woodlands, especially in the park's riparian habitats.
Yellow-bellied Flycatcher	Uncommon breeder in the park's coniferous dominated wet woodlands.
Yellow-rumped Warbler	Common breeder in the park's coniferous and mixed woodlands.
Yellow Warbler	Common breeder in the park's younger deciduous forests, urban edges and regen areas.

Table 2 : Species of Concern - Summary of Each Species Official Status					
Species	COSEWIC Status	SARA Status	SARA Schedule 1 Status	Federal Bird Conservation Strategy NS Priority Species	Provincial Status and Nova Scotia Endangered Species Act
American Woodcock	Data Deficient	Data Deficient	Data Deficient	Strategy = Increase by 50 percent.	Population Decreasing
Barn Swallow	Threatened (2011)	Threatened	Threatened (2017)	Strategy = Increase by 100 percent.	Endangered (2013)
Bay-breasted Warbler	Data Deficient	Data Deficient	Data Deficient	Strategy = Increase by 50 percent.	Population Variable
Belted Kingfisher	Data Deficient	Data Deficient	Data Deficient	Strategy = Increase by 50 percent.	Population Decreasing
Boreal Chickadee	Data Deficient	Data Deficient	Data Deficient	Strategy = Increase by 100 percent.	Population Decreasing
Canada Warbler	Threatened (2008)	Threatened	Threatened (2010)	Strategy = Increase by 50 percent.	Endangered (2013)
Cape May Warbler	Data Deficient	Data Deficient	Data Deficient	Strategy = Increase by 50 percent.	Population Decreasing
Common Nighthawk	Special Concern (2018)	Threatened	Threatened (2010)	Strategy = Increase by 100 percent.	Threatened (2007)
Common Snapping Turtle	Special Concern (2008)	Special Concern	Special Concern (2011)	Not Applicable - Non Bird Species	Vulnerable (2013)
Eastern Painted Turtle	Special Concern (2018)	Special Concern	Under consideration for addition.	Not Applicable - Non Bird Species	Population Decreasing
Eastern Wood-Pewee	Special Concern (2012)	Special Concern	Special Concern (2017)	Strategy = Increase by 50 percent.	Vulnerable (2013)
Evening Grosbeak	Special Concern (2016)	Special Concern	Special Concern (2016)	Strategy = Maintain Population	Vulnerable (2017)
Little Brown Myotis	Endangered (2014)	Endangered	Endangered (2014)	Not Applicable - Non Bird Species	Endangered (2013)
Monarch	Endangered (2016)	Endangered	Special Concern (2003)	Not Applicable - Non Bird Species	Endangered (2017)
Moose (Mainland Population)	Data Deficient	Data Deficient	Data Deficient	Not Applicable - Non Bird Species	Endangered (2003)

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Olive-sided Flycatcher	Special Concern (2018)	Threatened	Threatened (2010)	Strategy = Maintain Population	Threatened (2013)
Pine Grosbeak	Data Deficient	Data Deficient	Data Deficient	Strategy = Increase by 50 percent.	Population Decreasing
Ruffed Grouse	Data Deficient	Data Deficient	Data Deficient	Strategy = Increase by 50 percent.	Not Accessed
Rusty Blackbird	Special Concern (2006)	Special Concern	Special Concern (2009)	Strategy = Increase by 100 percent.	Endangered (2013)
Spruce Grouse	Data Deficient	Data Deficient	Data Deficient	Strategy = Increase by 50 percent.	Population Decreasing
Wood Turtle	Threatened (2007)	Threatened	Threatened (2010)	Not Applicable - Non Bird Species	Threatened (2013)

APPENDIX

Map 1: Boundary Map (Recommended Boundary for Proposed Park Highlighted in Red)



Sandy Lake - Sackville River Regional Park Planning Vision, January, 2020

Map 2: Wildlife Corridors

Legend

- Points 1A and 1B mark the northern and southern extents of a major wildlife corridor identified in this report as the Sandy Lake Wildlife Corridor.
- Points 2A and 2B mark the western and eastern extents of a major wildlife corridor identified in this report as the Sackville River Valley Corridor.
- Points 3-8 represent smaller but important riparian wildlife corridors that feed the Sandy Lake Wildlife Corridor.
- Point 9 marks the key wildlife connector between Marsh Lake and the Sackville River Valley Corridor.
- Point 10 marks the key wildlife connector between Jack Lake and Paper Mill Lake.
- Points 11 & 12 mark a wildlife corridors where animals cross over the Hammonds Plains Road. Corridor 12 also feeds into Sandy Lake Wildlife Corridor.

