PRELIMINARY BIRD INVENTORY FOR THREE WILDLAND PROVINCIAL PARKS (AND THEIR ENVIRONS) IN NORTHEAST ALBERTA

BY

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(March, 2001)

Prepared for:

Parks and Protected Areas Division

Alberta Community Development

NOTE TO THE READER:

This report is based on information collected and prepared by Richard Thomas and Bob Carroll. The opinions and statements expressed by the authors do not necessarily reflect the views of the Parks and Protected Areas Division of Alberta Community Development. The authors are responsible for the accuracy of the data and analysis contained in the report.

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ISBN: 0-7785-3098-1

On-line Edition:
Website: http://www.cd.gov.ab.ca/preserving/parks/anhic/reports.asp

This publication may be cited as:

Thomas, Richard G. and Bob Carroll. 2001. *Preliminary bird inventory for three Wildland Provincial Parks (and their environs) in Northeast Alberta*. Prepared for Parks and Protected Areas Division, Alberta Community Development. Edmonton, Alberta. 57pp.

Summary

From June 12-23 (inclusive) 2000, preliminary bird inventories were conducted for three, newly-established Wildland Provincial Parks (WPPs) located in the Central Mixedwood (Boreal Forest) and Athabasca Plain (Canadian Shield) Sub-Regions of northeast Alberta. These parks, and the total number of bird species documented within them (to date) are: Marguerite Crag and Tail WPP (61); Maybelle River WPP (85), and Richardson River Dunes WPP (64).

A composite bird checklist was compiled for the study area as a whole. It comprises species (representing 31 families) of which 16 (13.8%) are considered residents and the remainder, summer residents. Of the latter 100 species, 26 are short-distance migrants and 74 are Neotropical Migrants (NTMs; split equally between Obligate and Facultative NTMs). From a conservation perspective, it is noteworthy that almost two-thirds (63.8%) of the study area bird list is comprised of NTMs.

Approximately 90% of these 116 species are known or believed to breed within the area inventoried. Only 8 of the 116 were not found in any of the three WPPs. In all, records of single individuals represented 15 species. Although the parks' composite avifauna is moderately diverse, bird population densities across the region as a whole were found to be low—sometimes remarkably so. However, scattered "hot spots" of more abundant birdlife were encountered and these (unsurprisingly on a sand plain) were invariably associated with some form of wetland habitat. This observed, thin,"spotty" distribution of birds might well be "normal" (versus 2000 having been an aberrant year) in this portion of NE Alberta. If so, this phenomenon is probably related to the prevalence of Jack Pine forest within the study area since, as noted by Francis and Lumbis (1979, p. 63), "Pine forest appears to be relatively poor habitat for breeding birds".

Undoubtedly, the project's ornithological highlight was the discovery of a small breeding colony (4 – 5 pairs) of Arctic Terns within the Athabasca Dunes Ecological Reserve. It represents the first documented nesting of this species for Alberta. There is evidence of a steep decline in tern numbers (at this colony) over the last 30 years. It should be considered an urgent management priority that a plan to monitor and protect this small, unique, endangered colony be in place prior to the 2001 breeding season.

Other significant observations of birds considered out of range, rare, or comprising the first sightings and/or, breeding records for this portion of the province involved the following species (and locations): 1) **Marguerite -** Eared Grebe; Greater Scaup; Broad-winged Hawk. {**Note:** the

authors also observed a cinnamon-coloured Grizzly Bear in this park.}; 2. **Maybelle** - Eared Grebe; Surf Scoter; Hooded Merganser; Upland Sandpiper; 3. **Richardson** - Golden Eagle; Marbled Godwit; Blue Jay; Baltimore Oriole, and, 4. **Outside the parks** - Mourning Dove; Short-eared Owl; Black-billed Magpie, and Western Meadowlark.

Each park's avifaunal characteristics, potential (or lack thereof) as a birding destination, and outstanding short – and/or, long-term conservation issues/problems, are briefly reviewed. Controlling access—especially illegal ATV activity in the Ecological Reserve—is one of the region's most urgent environmental protection management issues. Recommendations have been set forth concerning: a) improvement of fieldwork efficiency; b) additional research needs and priorities; and, c) protection of the region's avifauna. Many suggestions in the two latter categories refer to the Ecological Reserve's Arctic Tern colony. Finally, the authors strongly urge that the small area of active dunes west of the Richardson River be designated as an ecological reserve.

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1.0 INTRODUCTION

1.1 Purpose of Study

The primary goal of the work reported herein was to collect sufficient ornithological data to compile basic inventories of the birdlife present (during the breeding season) within each of three, newly-established Wildland Provincial Parks (WPPs) in northeast (NE) Alberta. These WPPs, namely: A) Marguerite Crag and Tail; B) Maybelle River; and, C) Richardson River Dunes, form part of the Central Mixedwood Sub-Region (A,C) or Athabasca Plain Sub-Region (B) of the province's Boreal Forest and Canadian Shield Natural Regions, respectively. Their locations, together with the boundaries of the surrounding general study area (for which additional bird observations were gathered), are shown on Figure 1.

For every species recorded in a given park, attempts were made to determine (as accurately as possible) its breeding status, a measure of its relative abundance, and its distribution—in terms of preferred habitat type(s). In addition, taking into account a variety of factors, we tried to form an impression of each park's suitability (or lack thereof) as a potential birding destination and, from an avian standpoint, identify the scope and urgency of any current, significant conservation problems or potential future management issues.

1.2 Previous Research

From an ornithological perspective—in common with the vast majority of northern Alberta—the study area is relatively poorly known. Until now, there appear to have been no concerted efforts to conduct detailed bird inventories for the areas encompassed by the three aforementioned WPPs. By far the most thorough and useful publication relevant to the present project, is Francis and Lumbis's (1979) report on *Habitat relationships and management of terrestrial birds in northeastern Alberta.* These authors' species accounts contain a wealth of information on bird distribution/habitat preferences etc. within the Alberta Oil Sands Environmental Research Program (AOSERP) study area. The northeastern extension (or "panhandle") of the latter includes Richardson River Dunes WPP and the western half of Maybelle River WPP. Unfortunately, all of Francis and Lumbis's (1979, fig. 4) breeding bird census plots (surveyed during 1976 and 1977), were located outside (southwest of) the general area of interest described herein. Of even earlier vintage, but covering the whole of our study region, are the aerial surveys "of Rare, Potentially Endangered and Sensitive Birds" conducted in July 1975 by Bishoff and Fyfe (1976)

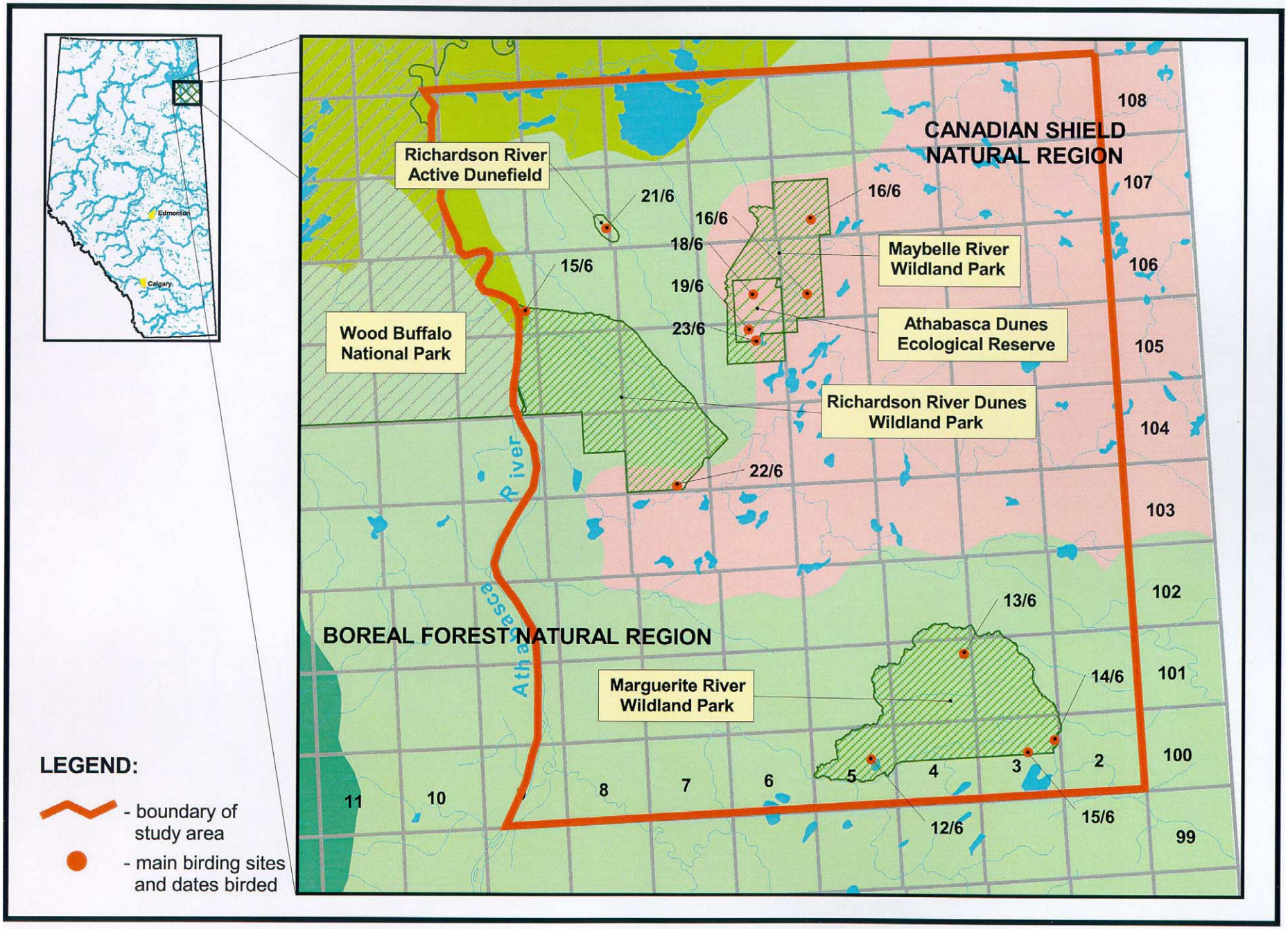

Figure 1: Map showing the overall study area and locations where bird inventory work was conducted.

While her fieldwork (1971-1976) on the dunefields south of Lake Athabasca was focused on their "Preservation and Recreation Values," Maureen Landals did accumulate some interesting avifaunal observations for (what is now) Maybelle River WPP in general, and Athabasca Dunes Ecological Reserve in particular. Landals (1978) incorporated those data in her valuable (unpublished) final report together with a "bird check-list" for her study area.

For comparative purposes, individual species' distribution maps within *The Atlas of Breeding Birds of Alberta* (ABBA; Semenchuk, 1992) proved useful, but it is worth noting that of the 183, 10km x 10km squares covering the Canadian Shield (as it is defined *in* ABBA), only 8.74% (16) were actually surveyed. However, it does appear that one Boreal Forest atlas square may overlap the northwest corner of Richardson River Dunes WPP.

Other references—containing 'coarse-scale,' bird distribution information for Alberta—that have been utilized by the authors, include 'classics' such as *The Birds of Alberta* (Salt and Salt, 1976) and *The Birds of Canada* (Godfrey, 1986), plus Pinel *et al.*'s 1991 (vol.1) and 1993 (vol.2) two-volume set, *Alberta Birds*, 1971-1980. Also useful was Smith's (1996) *Atlas of Saskatchewan Birds*. For completeness, the distribution maps in two, recently- published "field guides" to Alberta birds by Fisher and Acorn (1998) and McGillivray and Semenchuk (1998) were also examined, as were those contained in the new National Geographic (Dickinson, 1999) and Sibley (2000) guides to the birds of North America.

Finally, at the local level, unpublished bird sightings compiled (from 1990-1995, inclusive) for the Richardson Fire Tower area by Gordon Ashacker and Anne Waechter, also proved very helpful, especially with regard to the timing of the spring and fall migration periods in this portion of NE Alberta.

1.3 Methods

The writers comprised the ornithological component of the multi-disciplinary research team that visited the study area between June 11th and 24th, 2000. Actual fieldwork took place from June 12th-June 23rd, inclusive. With $\pm$ one whole day being lost to bad weather, a total of 22 man-days was invested in bird surveys, of which 90% was spent within one or other of the parks. Our combined efforts resulted in survey totals of 6, 10, and 4 man-days for Marguerite, Maybelle and Richardson, respectively. Access to the parks from our base camp at Go-Go Lake (adjacent to Richardson air-strip) was via a combination of helicopter (14 man-days; 64%) and ATV (8 man-days; 36%), except in the case of Marguerite WPP (= helicopter access only).

In terms of locations visited per park (Figure 1), our sampling was non-random. Areas/habitats to be surveyed were chosen on the basis of air photo interpretation. Half the time we accompanied the Ecological Land Classification/botanical teams to various ecologically representative and/or significant areas. During the remainder, we independently visited sites that (based upon our previous Boreal Forest birding experience) we believed had the potential to be 'bird rich'.

Due to time constraints, no attempt was made to set up (Canadian Forest Bird Monitoring Program-style) surveyed transects along which point counts could be conducted. In fact, we did not manage to experience a dawn chorus in any of the parks. Data gathering was thus very basic.

From our access point on any given day, we walked a route designed to cover as much ground and sample as many different habitats as possible. The identities and numbers of all birds encountered throughout the course of each day's walk were recorded, together with notes concerning habitat. During the June fieldwork, there was essentially no replication of survey-routes, and few individual sites were visited more than once. The authors were not part of a smaller research team that revisited the study area between August 22-26 (incl.). However, several members of the latter expedition made a number of interesting avian observations that have been incorporated within this report. As a result of the August trip, one more species i.e., Marbled Godwit, was added to the study area checklist.

2.0 RESULTS

2.1 Introduction

The results presented below are subdivided according to their geographic location, *viz:* **A** Within the Parks and, **B**. Outside the Parks. Section '**B**' includes records from the Richardson River active dunefield and its environs (a strong candidate for protection as an ecological reserve), plus brief descriptions of a handful of our most notable observations from elsewhere within the study area. Given the principal objectives of our inventory work however, the bulk of the data and discussion that follow refers to the three WPPs. {**Note:** All of the bird records collected by the writers and their colleagues during June and August, 2000, have been compiled to create a composite checklist for the entire study area (Appendix 1). An analysis of this checklist (see Section 3.0) includes comparisons with Francis and Lumbis's (1979) "Annotated List of the Birds of the AOSERP Area," and the 1990-1995 bird sightings for the area around Richardson Fire Tower.}

The account of each park's avifauna given below follows the same tripartite format. First, there is a summary of its basic ornithological "vital statistics." {**Note**: The nature of the data we collected

precludes the calculation of any statistically meaningful diversity indices (cf. Francis and Lumbis, 1979) etc.} Next, an annotated checklist is provided for each park. Each of these represents a synthesis of all relevant records (collected during 2000) known to us. Finally—bearing in mind the limitations imposed by the preliminary nature of the present inventory—there is a brief review of the overall character/composition of the park's avifauna. Noteworthy bird observations from the park are highlighted. This section ends with a brief evaluation of the park's potential as a birding destination and an outline of any concerns regarding the protection of its birdlife in general and/or, particular species or habitats.

2.2 Explanation of Checklist 'Codes' and Abbreviations

Attribution of Records:

The annotated checklists, which follow, are based primarily upon the authors' combined observations—which are utilized without individual attribution. However, many important records were also contributed by other members of the study team (for whom birding was an informal activity peripheral to their designated research responsibilities). In all such cases, the observer involved has been identified by their initials (in parentheses). The abbreviations used are: LA - Lorna Allen; JGa - Jennifer Gammon; JGd - Joyce Gould; JH - John Hornung; DJ - Derek Johnson; TJ - Ted Johnson; and DV - Drajs Vujnovic.

Breeding Status:

To render our results compatible with those of the *Atlas of Breeding Birds of Alberta* (Semenchuk, 1992), the Atlas Project's breeding status codes have been employed herein. These codes are reproduced in Table 1 opposite. This was done with some misgivings, since a strong case can be made that the Atlas codes are insufficiently rigorous. For example, there is a fundamental difference between nesting i.e., the intention to breed, and actual breeding – as defined by the successful production of viable young. Nevertheless, due to our limited time in the field, we feel that restricting our lists of breeding species to those in the "confirmed breeding" category would distort the true picture. This is because—despite our lack of full supporting evidence—we

Table 1: ABBA breeding status codes (Semenchuk, 1992)

The objective of the atlas was to obtain the strongest breeding evidence for as many species as possible within each square. There are four levels of evidence coded as follows:

● **Confirmed**

⊕ **Probable**

○ **Possible**

• **Observed**

Within each of these levels, there are categories of evidence denoted by a letter-code representing behavioral and empirical evidence. All of these codes apply to a species seen or heard during its breeding season:

Observed (O)
X - species identified, but no indication of breeding.

Possible (PO)
H - species observed, or breeding calls heard, in suitable nesting HABITAT.

Probable (PR)
P - PAIR observed in suitable nesting habitat.
T - TERRITORY presumed through territorial nesting behavior in the same location on at least two occasions a week or more apart.
C - COURTSHIP behavior between a male and a female.
V - VISITING probable nest-site, but no further evidence obtained.
N - NEST-BUILDING or excavation of nest hole by wrens and woodpeckers.

Confirmed (CO)
NB - NEST-BUILDING or adult carrying nest material; used for all species except wrens and woodpeckers.
DD - DISTRACTION DISPLAY or injury feigning.
UN - USED NEST or eggshells found.
FL - recently fledged young or downy young.
ON - OCCUPIED NEST indicated by adult entering or leaving nest-site or adult seen incubating.
CF - CARRYING FOOD; adult seen carrying food or faecal sac for young.
NE - Nest with EGGS.
NY - Nest with YOUNG.

believe that the vast majority of species found in the study area at this season (June), do in fact breed somewhere within its boundaries.

Abundance:

These codes are **not** accurate measures (in terms of absolute numbers) of any given species' population size although, in part, they may reflect its relative abundance. Rather, they represent the chance that a birder (assumed to be experienced in identification, and in suitable habitat during the appropriate time of year) has of finding (seeing and/or hearing) a given species through the course of a day's birding in any particular park. Definitions of these codes (modified somewhat from Thomas, 2000) are as follows:

- **Common** – Should be found on every visit.
- **Fairly common** – Found on almost all visits, but can be missed (usually present in smaller numbers than Common species).
- **Uncommon** – Present every year, usually in fairly small numbers. Often missed.
- **Rare** – Usually occurs annually – though in very limited numbers and/or is of very local distribution. May be absent in some years. Missed on a majority of visits. It should be noted that our 'Rare' category includes species for which only a single record of one individual was obtained (see Section 3.1). Several such individuals (e.g., Blue Jay, Marbled Godwit) were well outside the established 'normal' range of occurrence for their species within Alberta. In future versions of these checklists, they would probably be better described as:
- **Casual -** Very rare. Out of normal range. Non-annual. Highly unlikely to be encountered, but species is anticipated to occur irregularly in the park again.

When our colleagues' contributions are taken into consideration, there is a modest positive correlation between observer effort and the total number of species recorded per park.

A. Within the Parks

2.3 Marguerite Crag and Tail Wildland Provincial Park

2.3.1 Summary

A total of 61 species, representing 24 families (family: species ratio = 1:2.54), was physically encountered within the Park. Two of these taxa, i.e., waxwing sp. and crossbill sp., were specifically indeterminate. The occurrence of three additional species (and one family: Strigidae) could be inferred from the following evidence:

- A large owl species (possibly Great Horned) – one pellet (JH)
- A (or both?) tridactyl woodpecker species – workings
- Pileated woodpecker – workings

{ **Note:** the figures presented below are based upon a species total of 61}

In terms of breeding status and abundance categories, this species list breaks down as follows:

Breeding Status			Abundance		
{No. of Species (% of species total)}			{No. of Species (% of species total)}		
Confirmed	6	(9.8)	Common	5	(8.2)
Probable	20	(32.8)	Fairly common	17	(27.9)
Possible	32	(52.5)	Uncommon	15	(24.6)
No evidence	3	(4.9)	Rare	24	(39.3)

The only five species regarded as common and widespread within the Park were: Canada Goose; Ring-necked Duck; Ruby-crowned Kinglet; Yellow-rumped Warbler, and Chipping Sparrow.

2.3.2 Annotated Checklist of Birds for Marguerite Crag and Tail Wildland Provincial Park

LOONS (Gaviidae)

Common Loon: Probable breeder [P]; Fairly common; Observed on medium-sized and large lakes, and in flight; Nests likely to be found on Beaver lodges or islands.

GREBES (Podicipedidae)

Horned Grebe: Probable breeder [P]; Rare, localized; Only 3 birds recorded(June 12) on same large lake.

Red-necked Grebe: Confirmed breeder [ON]; Fairly common, widespread; Found on most medium-sized and large lakes.

Eared Grebe: Probable breeder [T]; Uncommon, localized; Single record of twelve birds, observed (June 12) on one large lake.

GEESE , SWANS & DUCKS (Anatidae)

Canada Goose: No evidence of breeding [X]; Common; All of the 250 individuals recorded were flying north in flocks consisting of 40–130 birds. The apparent lack of nesting geese was unexpected.

Mallard: Possible breeder [H]; Rare; Records consisted of 2 live birds, and the remains of one (? possible goshawk kill) in the interior of a mixedwood forest.

Green-winged Teal: Probable breeder [P]; Uncommon; Observed on both large and small lakes.

Ring-necked Duck: Probable breeder [T]; Common, widespread. Occurs on + all types and sizes of standing bodies of water.

Greater Scaup: Probable breeder [P]; Uncommon, localized. Two pairs recorded (June 12) on one large lake.

Lesser Scaup: Probable breeder [T]; Fairly common; Present on both large and small lakes.

White–winged Scoter: Probable breeder [P]; Fairly common but localized; Two parties (of 4 and 6 birds) recorded (June 12) on same large lake.

Bufflehead: Probable breeder [P]; Fairly common, widespread; Recorded from lakes of all sizes.

Common Goldeneye: Possible breeder [H]; Rare; A single female constitutes the only record.

HAWKS & EAGLES (Accipitridae)

Sharp-shinned Hawk: Possible breeder [H]; Rare; Single record of a bird in flight.

Broad-winged Hawk: Possible breeder [H]; Rare; One individual in mature Jack Pine-dominated, mixedwood forest on a lakeshore.

Red-tailed Hawk: Possible breeder [H]; Rare; Only two birds recorded.

FALCONS (Falconidae)

American Kestrel: Possible breeder [H]; Rare; One bird observed over the Marguerite River on the eastern boundary of the park.

GROUSE & ALLIES (Phasianidae)

Spruce Grouse: Confirmed breeder [FI]; Fairly common; One female with 5 downy young observed in Jack Pine-dominated, upland mixedwood forest. Males found in Black Spruce 'upland forest' and in Black Spruce bordering the Marguerite River floodplain.

CRANES (Gruidae)

Sandhill Crane: Probable breeder [P,T]; Uncommon; Probably more common than scattered records indicate; More often heard than seen; One pair observed feeding on the margins of a small pond in a sedge meadow.

SANDPIPERS & ALLIES (Scolopacidae)

Greater Yellowlegs: Confirmed breeder [DD]; Fairly common; Records include observations of territorial / courtship behavior including display flights; Found in Black Spruce bogs, lakeshore wetlands and the Marguerite River floodplain.

Lesser Yellowlegs: Probable breeder [P]; Rare, localized; Only one record, (of a pair) for the Park.

Solitary Sandpiper: Probable breeder [P]; Rare, localized; Two records—consisting of a pair and (subsequently, a short distance away) another (or perhaps one of the same) individual(s); The birds were feeding on the mudflats of two, small, sedge meadow ponds.

Spotted Sandpiper: Possible breeder [H]; Rare; Represented by a single individual on a sandy lakeshore.

Common Snipe: Probable breeder [T]; Rare, localized; Two performing display flights over the wetlands bordering a small lake.

GULLS, TERNS & JAEGERS (Laridae)

Franklin's Gull: No evidence of breeding [X]; Fairly common; All records were of birds passing overhead.

Bonaparte's Gull: Probable breeder [T]; Fairly common; Birds observed perched on Black Spruces bordering a large lake, and in flight over large and small lakes.

Ring-billed Gull: No evidence of breeding [X]; Rare; One record of an individual flying over the Park.

OWLS (Strigidae)

Large owl species: a pellet found on June 12 (JH), may be that of a Great Horned Owl (fide DV).

NIGHTJARS (Caprimulgidae)

Common Nighthawk: Probable breeder [C]; Fairly common; All records are of birds on the wing, either feeding or performing aerial displays.

WOODPECKERS (Picidae)

Yellow-bellied Sapsucker: Possible breeder [H]; Rare; localized; Represented by one bird heard calling and two examples (both in Paper Birches) of its distinctive workings.

Tridactyl woodpecker species: two examples of the moderately fresh workings of a Three-toed and/or Black-backed Woodpecker were found on Jack Pine snags.

Northern Flicker: Possible breeder [H]; Rare; One record of an individual calling.

Pileated Woodpecker: Two old examples of this species' characteristic workings were recorded. The excavations were near the bases of up to 21m tall White Spruce spires (one live, one dead) overtopping a 15.2m high mixedwood canopy of birch, Trembling Aspen and Jack Pine.

FLYCATCHERS (Tyrannidae)

Olive-sided Flycatcher: Possible breeder [H]; Rare; One or two individuals heard singing in open, mature Jack Pine/lichen forest.

Alder Flycatcher: Possible breeder [H]; Uncommon, localized; Several singing in alder/willow thickets flanking the Marguerite River.

Eastern Kingbird: Possible breeder [H]; Rare; Only one individual was recorded.

VIREOS (Vireonidae)

Blue-headed Vireo: Possible breeder [H]; Uncommon; Three individuals, including two singing in upland Aspen/Jack Pine/Black Spruce/ birch forest.

Red-eyed Vireo: Possible breeder [H]; Fairly common; Found in a variety of forest types such as: lakeshore mixedwood, mature Jack Pine along the margin of the Marguerite River floodplain, and a 7.6-9.1m high Aspen stand with a dense, low, alder understorey.

JAYS & CROWS (Corvidae)

Gray Jay: Confirmed breeder [FI]; Fairly common; Individuals and family parties found in Black Spruce bogs and Black Spruce-Tamarack treed fens.

Common Raven: Possible breeder [FI]; Fairly common, widespread.

SWALLOWS (Hirundinidae)

Tree Swallow: Possible breeder [H]; Uncommon; Observed over lakeshore wetlands.

CHICKADEES (Paridae)

Black-capped Chickadee: Possible breeder [H]; Uncommon; Recorded in willows bordering a small pond and in a moderately dense stand of 9.1m tall, submature Aspen.

Boreal Chickadee: Possible breeder [H]; Rare, localized; Present in mature/old Jack Pine-Black Spruce forest.

NUTHATCHES (Sittidae)

Red-breasted Nuthatch: Possible breeder [H]; Rare; One individual observed in open, mature/old Jack Pine/lichen forest along the edge of the Marguerite River floodplain.

KINGLETS (Regulidae)

Ruby-crowned Kinglet: Possible breeder [H]; Common, widespread; Observed in open Jack Pine/lichen forest (with and without Black Spruce), Black Spruce bog ('muskeg') and Black Spruce-Tamarack fen.

BLUEBIRDS & THRUSHES (Turdidae)

Swainson's Thrush: Probable breeder [T]; Fairly common but localized; Recorded from riverine alder thickets and lakeshore Black Spruce/ Jack Pine forest.

Hermit Thrush: Possible breeder [H]; Uncommon; Observed in 10m tall Jack Pine/Black Spruce forest and mature conifer-dominated mixedwoods.

WAXWINGS (Bombycillidae)

Waxwing species: One record on June 15 (JGd), species undetermined.

WOOD-WARBLERS (Parulidae)

Tennessee Warbler: Possible breeder [H]; Fairly common; localized; Most frequently recorded in riparian willow/alder thickets, but also found in a Black Spruce floodplain 'swamp' and along the edge of a Black Spruce 'muskeg'.

Orange-crowned Warbler: Possible breeder [H]; Uncommon, localized; Two individuals found in dense, willow/birch/Black Spruce forest at the margins of the Marguerite River floodplain.

Yellow Warbler: Possible breeder [H]; Rare; A single record of one bird singing in alder/willow thickets bordering the Marguerite River.

Magnolia Warbler: Possible breeder [H]: Uncommon, localized; Two males observed and another heard singing in the alder/willow thickets flanking the Marguerite River on the southeast edge of the Park.

Yellow-rumped Warbler: Probable breeder [T]; Common, widespread; Observed in Jack Pine, Jack Pine/Black Spruce, Black Spruce/alder, Black Spruce/Tamarack, and conifer/young Aspen forest types.

Palm Warbler: Confirmed breeder [NE]; Fairly common; Favours Black Spruce-dominated wetland habitats; One nest with five eggs recorded (June 12) in a Black Spruce-Tamarack treed fen.

Ovenbird: Possible breeder [H]; Rare, localized; Two individuals were heard singing, one of which occurred within an open stand of 7.6 – 9.1m tall Aspen.

Northern Waterthrush: Possible breeder [H]; Rare, localized; Only one record: a singing bird from willow/alder thickets flanking the Marguerite River on the southeast border of the Park.

Mourning Warbler: Possible breeder [H]; Uncommon, localized; Two individuals heard in the same habitat/location as the previous species.

Common Yellowthroat: Possible breeder [H]; Rare, localized; A single bird heard in approximately the same location/habitat (but closer to the river) as the two previously-described species.

SPARROWS & ALLIES (Emberizidae)

Chipping Sparrow: Possible breeder [T]; Common, widespread; Appears to occur in almost all of the Park's conifer-dominated forest types.

Swamp Sparrow: Possible breeder [H]; Rare, localized; One (audio) record of a distant bird (apparently singing from a near-channel location) on the Marguerite River floodplain.

White- throated Sparrow: Possible breeder [H]; Uncommon, localized; Two records, both of single birds in willow/alder dominated thickets along the distal margin of the Marguerite River floodplain.

Dark-eyed Junco: Probable breeder [T]; Fairly common; Found in a variety of conifer-dominated forest types including Black Spruce 'muskeg' and Jack Pine/birch mixedwood.

BLACKBIRDS, ORIOLES & ALLIES (Icteridae)

Common Grackle: Probable breeder [P]; Uncommon; Three records, (each of single birds) from lakeshore margin and floodplain locations.

FINCHES (Fringillidae)

Crossbill sp.: Possible breeder [H]; Uncommon; Two flocks (of 10 and 20 individuals) were briefly encountered, but their identity to species could not be unequivocally determined.

2.3.3 Discussion

Of the three WPPs surveyed, Marguerite is the most diverse in terms of its physiography and is the only true "wildland". In addition, those of its lakes located in sediment/organics-floored basins (vs. those on igneous/metamorphic bedrock) appeared to be much more productive than most in the two other parks. Thus its final species tally of 61—lowest of the three WPPs, and slightly over half (52.6%) of the study area total (116 species)—came as a considerable surprise. A number of species (e.g., Magnolia Warbler) seemed restricted to the deciduous thickets upon the Marguerite River floodplain—which clearly constitute important avian habitat (Figure 2). Curiously however,

some of the Park's mixedwood forests appeared remarkably devoid of birdlife although, to be fair, they were not visited at the peak periods (dawn and dusk) for bird activity.

Of the three WPPs' combined total list of 108 species, nine were only recorded in Marguerite, namely: Red-necked Grebe; Greater Scaup; White-winged Scoter; Broad-winged Hawk; Solitary Sandpiper; Magnolia Warbler; Ovenbird; Mourning Warbler and Common Yellowthroat. Except for the latter (one was also recorded at Richardson Lake on June 21 by JGa), none of these species were reported from elsewhere within the study area.

Figure 2: Aerial photograph of the Marguerite River floodplain in the SE 'corner' of the WPP. Note the thickets of alder and willow bordering the active channel.
(PHOTO: Richard Thomas)

One notable "miss" in Marguerite was American Robin! – a species relatively common throughout the remainder of the region. Marguerite was the first WPP to be visited and it seems likely that some late migrants were still arriving during our first few days of fieldwork. However, American Robin is an early migrant and several were present near Go-Go Lake on June 11th. Further, our daily species logs indicate that at least some representatives of a large majority of the region's summer visitors were already on territory when our inventory commenced.

The three most significant bird records from Marguerite are:

1) **Eared Grebe**—all bar one of the Eared Grebes recorded during the study were in a party of 12 on a large, productive lake in the northwest 'corner' of the park. This represents a considerable range extension for the species. Francis and Lumbis (1979) only reported one breeding record (from Birch Lake), and ABBA (Semenchuk, 1992) contains no breeding records for Eared Grebe from NE Alberta.

2) **Greater Scaup**—two pairs (June 12) on the same lake as the previous species are noteworthy because Pinel *et al.* (1991) and ABBA state, "the breeding status (of this species) in Alberta is uncertain." Breeding has been suspected (but remains unproven) in the Caribou

Mountains. Francis and Lumbis (1979) considered Greater Scaup a “wanderer” and “rare migrant” in their AOSERP study area.

3) **Broad winged Hawk**—occurrences of this species are comparatively rare in NE Alberta. ABBA has no breeding records and only one sighting for the region, but notes the presence of “ a small breeding population in the Fort Mackay area” based presumably, on Francis and Lumbis’s (1979) single report of breeding at their Bitumount study plot.

At present, Marguerite WPP is only readily accessible by air and its remoteness and low species total means it is the least favourable park for promotion as a birding-based tourism destination. Its relative inaccessibility is a bonus in terms of the protection of its birdlife, and this Park’s major function now, and for the foreseeable future, should be the preservation of biodiversity and wildland values. Unauthorized or informal access to this Park would likely lead to the degradation of those values and should be controlled.

Finally, the authors’ most exciting non-avian sighting occurred in Marguerite on June 13th, when they watched a cinnamon-coloured Grizzly Bear foraging along the shore of a small lake (Figure 3). The bear was observed (as it moved closer and closer) for approximately 25 minutes, in good light, through a Bushnell Spacemaster ll spotting scope equipped with a 15x – 45x zoom lens, at distances ranging from 750m to 250m. All the major structural field marks for this species were noted and we have no doubts concerning its identification as a Grizzly.

Figure 3: Cinnamon coloured Grizzly Bear, Marguerite Crag and Tail WPP. (PHOTO: Bob Carroll)

2.4 Maybelle River Wildland Provincial Park

2.4.1 Summary

{**Note:** For the purposes of this report, bird observations from the Athabasca Dunes Ecological Reserve have been amalgamated with those from the 'surrounding' Wildland Park. Thus "Maybelle" or "the Park" refers to the combined area of both entities. Whilst a separate (preliminary) bird checklist has not been created for the Ecological Reserve, one could be compiled (if required in future) from our field notes/records}.

A total of 85 species, representing 29 families (family: species ratio = 1:2.93), was recorded within Maybelle—by far the greatest species richness of the three WPPs. In terms of breeding status and abundance categories, this species list breaks down as follows:

Breeding Status		Abundance	
{No. of Species (% of species total)}		{No. of Species (% of species total)}	
Confirmed	14 (16.5)	Common	10 (11.8)
Probable	26 (30.6)	Fairly Common	18 (21.2)
Possible	39 (45.9)	Uncommon	27 (31.7)
No evidence	6 (7.0)	Rare	30 (35.3)

The 10 species regarded as common/widespread in the Park are: Green-winged Teal; Ring-necked Duck; Franklin's Gull; Common Nighthawk; Alder Flycatcher; Common Raven; American Robin; Yellow-rumped Warbler; Chipping Sparrow, and Red-winged Blackbird.

2.4.2 Annotated Checklist of Birds for Maybelle River Wildland Provincial Park

LOONS (Gaviidae)

Common Loon: Probable breeder [P]; Uncommon; Observed on small, medium-sized and large lakes.

GREBES (Podicipedidae):

Horned Grebe: Possible breeder [H]; Rare; Only one recorded (June 18) from a lake at the eastern margin of the active dunefield**.**

Eared Grebe: Possible breeder [H]; Rare; Represented by a single bird, observed (June 23) on the large lake situated adjacent to the centre of the Ecological Reserve's southern border.

GEESE, SWANS & DUCKS (Anatidae)

Canada Goose: No evidence of breeding [X]; One record (June 16) a flock of 14 birds flying north. The apparent absence of nesting geese was somewhat surprising.

Mallard: Probable breeder [V]; Fairly common; A flock of 22 was seen overhead on June 18. Observed on dunefield margin lakes and the Maybelle River.

Blue-winged Teal: Probable breeder [P]; Uncommon; A total of five birds (two pairs and a single male) was observed on 3 different lakes along the eastern edge of the active dunefield.

Northern Shoveler: No evidence of breeding [X]; Rare; A pair seen (June 18) flying north over the Ecological Reserve constitutes the sole record.

Northern Pintail: No evidence of breeding [X]; Uncommon; Two records (both on June 18) for a total of 4 birds (including at least two males). All were flying rapidly northward over the eastern margin of the active sand sheet.

Green-winged Teal: Probable breeder [P]; Common; Found in dunefield margin lakes and marshes, and on the large lake at the south-central limit of the Ecological Reserve.

Ring-necked Duck: Probable breeder [P]; Common; widespread. Recorded from lakes of all sizes and the Maybelle River.

Lesser Scaup: Probable breeder [P]; Uncommon; Our only confirmed record was of a pair on the Maybelle River (June 17).

Surf Scoter: Probable breeder [C]; Uncommon, localized; One record (June 23), a party of six birds, comprising: a mated pair (copulation was observed), plus 3 other mature males and one immature male. These birds were on the same lake as the Eared Grebe (see above).

Bufflehead: Possible breeder [H]; Rare; A single record (June 16), of one individual, on a small lake in the northeast corner of the Park. (LA).

Common Goldeneye: Probable breeder [P]; Uncommon; Five of the 6 birds observed (two pairs and one female) were on the Maybelle River (June 17).

Hooded Merganser: No evidence of breeding [X]; Rare; Our sole record (June 17) was a party of three—believed to all be first-spring males—on the Maybelle River.

HAWKS & EAGLES (Accipitridae)

Bald Eagle: Confirmed breeder [NY]; Uncommon; A pair attending a nest (in a Jack Pine snag) containing one young, was observed (June 16) by a lake on the east-central margin of the active dunefield (DV).

Sharp-shinned Hawk: Confirmed breeder [CF]; Rare; Two records, both of single birds in flight. One (June 17) was carrying prey above riparian forest along the Maybelle River; the other was noted (June 18) at the south end of the Park (TJ).

Northern Goshawk: Possible breeder [H]; Rare; Only two (unconfirmed) sightings of single birds were made in June. Two observed at the southern margin of the Park on August 21 (TJ) might have been early migrants.

Red-tailed Hawk: Probable breeder [P]; Our records comprise four birds (believed to represent the same pair observed twice) seen soaring to the east of the eastern margin of the active dunefield (June 18).

FALCONS (Falconidae)

Merlin: Probable breeder [T]; Rare; Two individuals noted: one (June 18) calling (as if in the vicinity of a nest) from tall spruces east of the dunefield; the other (June 19) overflew a dunefield 'oasis'.

GROUSE & ALLIES (Phasianidae)

Ruffed Grouse: Possible breeder [H]; Rare; One record, a bird observed (June 15) in woodland bordering the Maybelle River (JGa).

Spruce Grouse: Possible breeder [H]; Uncommon; Numerous records of grouse droppings in Jack Pine forest probably refer to this species. One tail feather found also, but only one bird actually observed (June 15)—in forest near the Maybelle River (JGa).

Sharp-tailed Grouse: Possible breeder [H]; Rare; Sole record (June 17) was of a single bird flying along a stretch of the winter road that forms the northwest boundary of the Park (DV, JGa).

RAILS & COOTS (Rallidae)

Sora: Probable breeder [T]; Uncommon; A total of least 4 different birds recorded from wetlands at the eastern edge of the active dunefield, and on the southeast side of the Ecological Reserve.

American Coot: Confirmed breeder [ON]; Rare; Only record (June 25) consists of a distant view of one bird apparently sitting on a nest, in dense lakeside vegetation, on the west-central shore of the aforementioned large lake (see Eared Grebe account) at the south end of the Ecological Reserve.

CRANES (Gruidae)

Sandhill Crane: Possible breeder [H]; Rare; Only one bird actually observed (June 19)—overflying the dunefield. However, numerous tracks found on wet sand, and this species is believed to be more common than our dearth of records suggests.

PLOVERS (Charadriidae)

Killdeer: Confirmed breeder [FL]; Fairly common; One pair with 3 downy young foraging on the eastern side of the active dunefield (June 18). Three nesting pairs observed (June 17) at the southern end of the Park outside the Ecological Reserve (JGa).

SANDPIPERS & ALLIES (Scolopacidae)

Greater Yellowlegs: Probable breeder [T]; Fairly common; At least 10 different individuals observed in dunefield margin wetlands; the wetland complex immediately SSE of the Ecological Reserve; and along the Maybelle River.

Lesser Yellowlegs: Probable breeder [P]; Uncommon; One pair of this species was found (June 23) in the wetlands SSE of the Ecological Reserve. Nesting is strongly suspected since one bird engaged in an apparent distraction display.

Spotted Sandpiper: Possible breeder [H]; Fairly common; All our records are of single birds; Favours sandy lake beaches, and the sand or gravel banks of the Maybelle River.

Upland Sandpiper: Confirmed breeder [DD]; Rare, localized; Two pairs observed (June 23) in young Jack Pine and the adjacent wetland complex immediately SSE of the Ecological Reserve.

Common Snipe: Probable breeder [T]; Uncommon; Only 3 individuals recorded: two from dunefield margin wetlands (June 18), and one from the wetlands to the SSE of the Ecological Reserve (June 23).

GULLS, TERNS & JAEGERS (Laridae)

Franklin's Gull: No evidence of breeding [X]; Common; All our records are of birds passing overhead.

Bonaparte's Gull: Possible breeder [H]; Uncommon; Birds observed feeding over a lake, and overflying the Park.

Ring-billed Gull: No evidence of breeding [X]; Rare; Two records: a total of 3 individuals flying over the dunefield (June 18 and 19).

Common Tern: Possible breeder [H]; Rare; Distant views were obtained of 3 birds believed to be of this species, foraging over a lake to the east of the active dunefield. Several other 'white-winged' terns observed (from a helicopter) in the same vicinity could not be specifically identified.

Arctic Tern: Confirmed breeder [NE]; Fairly common but localized; 8-9 adults and three nests with eggs (two with one egg, one with two eggs) were observed (June 19) in the south-central portion of the active dunefield. Comparison with photographs taken by LA (on June 17) indicates the presence of a fourth nest (with two eggs). A possible fifth nest (suggested by the dive-bombing attacks of a pair) was not searched for (June 19).

OWLS (Strigidae)

Great Gray Owl: Possible breeder [H]; Rare; One bird encountered (June 22) in an extensive 'muskeg' at the north end of Park (DJ).

NIGHTJARS (Caprimulgidae)

Common Nighthawk: Probable breeder [P]; Common; All records are of birds in flight.

KINGFISHERS (Alcedinidae)

Belted Kingfisher: Probable breeder [P]; Uncommon; Observed along the Maybelle River and dunefield margin wetlands.

WOODPECKERS (**Picidae**)

Yellow-bellied Sapsucker: Probable breeder [T]; Rare; Two individuals (June 17) in deciduous riparian scrub/forest along the Maybelle River; Workings in a birch on the margin of the active dunefield.

Downy Woodpecker: Possible breeder [H]; Rare; One (June 17) in Maybelle River deciduous, riparian scrub/forest; Another woodpecker heard drumming in the same area was possibly of this species.

Northern Flicker: Confirmed breeder [ON]; "Yellow shafted' is the race present in NE Alberta; An active nest of this race was found (June 20) in a birch on the southeast margin of the active dunefield (DJ, LA).

Pileated Woodpecker: Possible breeder [H]; Rare; Only one bird observed (June 15) along the Maybelle River (JGa); An example of the ('semi-fresh') workings of this species was found in riparian forest at another location adjacent to the same river.

FLYCATCHERS (**Tyrannidae**)

Olive-sided Flycatcher: Possible breeder [H]; Uncommon; Typically (but not exclusively) found in mature Jack Pine forest adjacent to lakes or other wetlands.

Western Wood-Pewee: Possible breeder [H]; Fairly common; Recorded in various lake margin and riparian forest types.

Alder Flycatcher: Probable breeder [T]; Common; Observed in a variety of wetlands, including drainages choked with young alder and birch scrub; lake margin and riparian deciduous thickets; and wet habitats along the east edge—and to the SSE—of the active dunefield.

Least Flycatcher: Possible breeder [H]; Uncommon, localized; A total of 4-5 individuals was recorded; Birds were encountered in deciduous scrub along the Maybelle River and the eastern margin of the active dunefield.

Eastern Kingbird: Probable breeder [P]; Uncommon; Only 4-5 individuals recorded; Favours lake margins.

VIREOS (**Vireonidae**)

Blue-headed Vireo: Possible breeder [H]; Uncommon; Observed in mature Jack Pine bordering lakes, and spruce/pine-dominated forest bordering the active dunefield.

Red-eyed Vireo: Possible breeder [H]; Fairly common but localized; Noted in deciduous scrub flanking the Maybelle River and in deciduous trees/scrub along the eastern edge of the active dunefield.

JAYS & CROWS (Corvidae)

Gray Jay: Confirmed breeder [FL]; Fairly common; Recorded from Jack Pine-dominated riparian, lakeshore and dunefield margin forest.

Common Raven: Confirmed breeder [FL]; Common and widespread; Adults with begging young observed foraging on active dunes (June 18). Flocks of up to 30 birds (JGa) seen soaring above the dunefield (June 16).

SWALLOWS (**Hirundinidae**)

Tree Swallow: Possible breeder [H]; Fairly common; Noted over: vegetated 'oases' within active dune complex; the Maybelle River; and wetlands along the eastern margin of the dunefield.

CHICKADEES (**Paridae**)

Black-capped Chickadee: Possible breeder [H]; Uncommon; Surprisingly, only two records, (each of single birds) i.e., from the shore of a small lake, and the Jack Pine forest separating the two northern 'arms' of the active dunefield.

WRENS (**Troglodytidae**)

Winter Wren: Possible breeder [H]; Rare; One record (June 15): from deciduous forest bordering the Maybelle River (JGa).

KINGLETS (**Regulidae**)

Ruby-crowned Kinglet: Probable breeder [T]; Uncommon; Recorded from riparian and dunefield margin forests; One noted foraging in birches on the slipface of an active dune.

BLUEBIRDS & THRUSHES (Turdidae)

Mountain Bluebird: Possible breeder [H]; Rare; Sole record: a male, which perched briefly in a Jack Pine, near the northeast margin of the dunefield.

Swainson's Thrush: Possible breeder [H]; Rare; Only three individuals recorded: one from riparian (Maybelle River) scrub/forest, and two along the eastern margin of the dunefield.

Hermit Thrush: Confirmed breeder [NE]; Uncommon; Three records, including a nest with four eggs (June 16), ~100m from the Maybelle River, at the north end of the Park (DV, JGa).

American Robin: Confirmed breeder [CF]; Common, widespread; Numerous records from a variety of forest types.

WAXWINGS (Bombycillidae)

Bohemian Waxwing: Possible breeder [H]; Rare; Several recorded (June 18) from a Jack Pine-clothed "ridge between wetlands", near the northeast 'arm' of the dunefield (JGa).

Cedar Waxwing: Possible breeder [H]; Fairly common; At least 4 records from riparian (Maybelle River) forest and Jack Pine forest 'within' and adjacent to the active dunefield.

WOOD-WARBLERS (Parulidae)

Tennessee Warbler: Possible breeder [H]; Uncommon, localized. Only 3 individuals recorded: one at a dunefield 'oasis', and two in wetlands located SSE of the Ecological Reserve.

Orange-crowned Warbler: Possible breeder [H]; Uncommon**,** localized**;** Three records (each of single birds) from deciduous growth: SSE of the Ecological Reserve; in a dunefield 'oasis'; and at the eastern edge of the active dunefield.

Yellow Warbler: Possible breeder [H]; Fairly common but localized; Noted from deciduous scrub along the Maybelle River and at the eastern margin of the dunefield.

Yellow-rumped Warbler: Probable breeder [P]; Common and widespread; Found in virtually all the submature and mature conifer and mixedwood forest-types sampled in the Park.

Palm Warbler: Possible breeder [H]; Uncommon; Five records, all of single birds, from treed wetlands with a significant component of Black Spruce.

Northern Waterthrush: Possible breeder [H]; Uncommon, localized; Two individuals observed in 12m tall, riparian birch and (subordinate) Aspen forest, with a moderately dense, 4.6m high understory of alder, on a gravel bar adjacent to the Maybelle River (June 17).

Wilson's Warbler: Possible breeder [H]; Uncommon, localized; Two single males recorded: one (June 17) in alder/birch scrub on the bank of the Maybelle River; the other (June 23) in a small wetland SSE of the Ecological Reserve.

TANAGERS (Thraupidae)

Western Tanager: Probable breeder [P]; Fairly common; At least five individuals (including one pair) recorded; Mature Jack Pine forest appears to be the preferred habitat.

SPARROWS & ALLIES (Emberizidae)

Chipping Sparrow: Confirmed breeder [NE]; Common and widespread; One nest containing 3 eggs found (June 16); Birds were observed in submature and mature Jack Pine forest, riparian Black Spruce forest, and at vegetated 'oases' within the active dunefield.

Vesper Sparrow: Possible breeder [H]; Rare, localized; Three or four singing birds recorded (June 23) in young Jack Pine just to the south of the Ecological Reserve.

Song Sparrow: Confirmed breeder [CF]; Fairly common, localized; Partial to deciduous shrubbery near water; also recorded at vegetated 'oases' within the active dunefield.

Swamp Sparrow: Possible breeder [H]; Uncommon, localized; Four or five individuals recorded in total, from wetlands (e.g., shrubby sedge meadows) along the eastern rim of the dunefield, and SSE of the Ecological Reserve.

White-throated Sparrow: Probable breeder [P]; Fairly common; Typically recorded in lakeshore and riparian deciduous scrub.

Dark-eyed Junco: Probable breeder [P]; Fairly common; Observed in both young and mature Jack Pine forest.

BLACKBIRDS, ORIOLES & ALLIES (Icteridae)

Red-winged Blackbird: Probable breeder [P,T]; Common but localized; Recorded along the margins of ponds and all sizes of lakes. One was even observed at a dunefield 'oasis'.

Yellow-headed Blackbird: Probable breeder [P]; Rare, localized; The only record (June 20) involves a party of 5 birds (2 males and 3 females) observed on a Beaver lodge in a lake at the eastern margin of the active dunefield (DJ, LA).

Rusty Blackbird: Possible breeder [H]; Rare; A lone record: one party of 3 birds, perched briefly on a lakeshore snag (June 16).

Common Grackle: Confirmed breeder [CF]; Fairly common but, localized; Almost all records involved birds observed in the vicinity of lakes.

Brown-headed Cowbird: Possible breeder [H]; Rare; Our only record (June 23) comprises one female seen along the west-central shore of the large lake just south of the Ecological Reserve.

FINCHES (Fringillidae)

Red Crossbill: Possible breeder [H]; Fairly common? (see note below); One definite record (June 18): in a bog adjacent to the northeast edge of the dunefield, but the number of individuals is uncertain (JGa).

White-winged Crossbill: Possible breeder [H]; Uncommon? (see note below); One record (June 18): two birds in a spruce at a dunefield 'oasis'.

Note: Overall, crossbills appear to be fairly common within the Park, and flocks up to 40 birds were noted passing overhead. However, since most such flocks were silent, the specific identity of the vast majority of crossbills encountered could not be definitely determined.

Pine Siskin: Possible breeder [H]; Rare; Our only record involves a single bird observed southeast of the Ecological Reserve on June 23.

2.4.3 Discussion

Almost three-quarters (73.3%) of the study area's total species (116) were recorded within Maybelle River WPP. Furthermore, 25 taxa (of the 108 comprising the three WPPs' combined inventory) were only encountered in this Park, namely: Blue-winged Teal; Northern Shoveler; Northern Pintail; Surf Scoter; Hooded Merganser; Merlin; Sharp-tailed Grouse; American Coot; Killdeer; Upland Sandpiper; Common Tern; Arctic Tern; Great Gray Owl; Downy Woodpecker; Pileated Woodpecker; Winter Wren; Mountain Bluebird; Bohemian Waxwing; Vesper Sparrow; Swamp Sparrow; Yellow-headed Blackbird; Rusty Blackbird; Brown-headed Cowbird; White-winged Crossbill, and Pine Siskin. Out of these 25, only the six underlined were also definitely observed elsewhere within the study area—mostly in the vicinity of Go-Go Lake and/or, Richardson airstrip.

The Great Gray was the only owl encountered in any of the Parks, and the Winter Wren constitutes the sole representative of this family found in the entire study area.

Maybelle yielded five species records of particular significance, namely:

1) **Eared Grebe**—The individual located south of the Ecological Reserve (on June 23rd), was the more northern of our two study area records and represents one of the northernmost sightings of this species for the province (see also, the Eared Grebe note in Section 2.3.3 above).
2) **Surf Scoter**—Given the paucity of breeding or possible breeding reports for Alberta (a total of five in ABBA, and none from NE Alberta south of Lake Athabasca), the presence of a group of six (June 23rd) including a mated pair, is noteworthy. Pinel *et al.* (1991) were aware of only two documented nesting records—both from Wentzel Lake in the Caribou Mountains. Francis and Lumbis (1979) had no breeding records for this species.
3) **Hooded Merganser**—ABBA has no breeding records (or sightings) at all for the Canadian Shield, but shows two (one confirmed, one probable) in the vicinity of Fort Mackay. Francis and Lumbis (1979) report two sightings (each of three individuals) on McClelland Lake and Birch Lake. However, McGillivray and Semenchuk (1998) show a disjunct breeding population of this species in NE Alberta whose purported distribution overlaps the southern margin of our study area. Nonetheless, we regard the observation of a party of three on the Maybelle River (June 17) as a potentially significant northeastward range extension for this duck.
4) **Upland Sandpiper**—Francis and Lumbis (1979) noted that the species "has been observed on a few occasions within the (AOSERP) area and has not been observed to breed." ABBA has one possible breeding record between Ft. McMurray and Ft. Mackay, and Pinel *et al.* (1991) describe a nest with one egg being found (June 26th , 1975) on the Syncrude Lease. Thus, the presence of two pairs (exhibiting territorial and distraction display behaviours) presumably marks the northernmost breeding record for this species in the province.
5) **Arctic Tern**—The discovery of four Arctic Tern nests with eggs (and possibly a fifth nest) within the Athabasca Dunes Ecological Reserve, undoubtedly represents the avian highlight of the present project. It constitutes the first-ever documented nesting of this species for Alberta (Figures 4 and 5). As such, it has very important ramifications for the management of the Ecological Reserve regarding the protection of this tiny and unique breeding colony. Anecdotal evidence (Archie Landals, pers. comm., Oct. 2000) indicates that the size of the Reserve's population of nesting Arctic Terns has decreased by an order of magnitude over the last 30 years. (i.e. , from an estimated 40-50 pairs in 1971, to 4 or 5 pairs in 2000). The conservation implications of this trend and recommendations re same are presented in Sections 4.2 and 4.3. {**Note:** A full account of this discovery will be published elsewhere.}

Figure 4: Arctic Tern incubating eggs, Athabasca Dunes Ecological Reserve, June 19, 2000. (PHOTO: Bob Carroll)

Figure 5: Arctic Tern nest containing two eggs, Athabasca Dunes Ecological Reserve, June 17, 2000. (PHOTO: Lorna Allen)

In terms of its species richness, scenic and aesthetic values, plus a number of other factors, Maybelle is by far the best potential, birding-related, ecotourism destination (of the three WPPs). However, it also faces by far the most urgent conservation problems. Key habitats for birds within the Park are, unsurprisingly enough in an area dominated by active sand sheets, associated with various types of wetland. They include the Maybelle River; a series of lakes and marshes along the eastern margin of the active dunefield (Figure 6); lakes; and other wetlands such as bogs, treed fens (e.g. the large ribbed fen at the NW end of the Park), sedge marshes, etc. Also critical is the active dunefield itself. Fortunately, some (but by no means all) of the most important and unique habitats are located within the Ecological Reserve.

Figure 6: Aerial photograph of the eastern edge of the active dunefield, Athabasca Dunes Ecological Reserve. Note dunefield margin wetlands. (PHOTO: Bob Carroll)

The legislated priority for Alberta's Ecological Reserves is protection of their fauna, flora and landscapes. A strong argument can be made that one immediate consequence of promoting the Reserve as a birding destination would be to jeopardize the existence and integrity of the very species and special features it was established to protect. Given the Reserve's very low carrying capacity (with respect to human visitation) and sensitivity to disturbance of its Arctic Tern colony etc., we believe any such promotion would be extremely ill-advised. These issues are addressed further in Section 4.0 below.

2.5 Richardson River Dunes Wildland Provincial Park

2.5.1 Summary

The species list for this park comprises 64 species representing 27 families (family:species ratio = 1:2.37). In terms of their breeding status and abundance categories the birds on this list break down as follows.

Breeding Status {No. of Species (% of species total) }			Abundance {No. of Species (% of species total)}		
Confirmed	8	(12.5)	Common	4	(6.2)
Probable	18	(28.1)	Fairly Common	9	(14.1)
Possible	34	(53.1)	Uncommon	22	(34.4)
No evidence	4	(6.3)	Rare	29	(45.3)

Only four species could be regarded as common and widespread within the Park, viz.: Common Nighthawk; Gray Jay; Yellow-rumped Warbler, and Chipping Sparrow.

2.5.2 Annotated Checklist of Birds for Richardson River Dunes Wildland Provincial Park

LOONS (Gaviidae)

Common Loon: Possible breeder [H]; Rare; Surprisingly, only a single record (June 22), of one bird calling in the southeast 'corner' of the Park.

GREBES (Podicipedidae)

Pied-billed Grebe: Possible breeder [H]; Rare; One individual recorded (June 14) from the Park's southeast 'corner'.

GEESE, SWANS & DUCKS (Anatidae)

Mallard: Possible breeder [H]; Uncommon; Two records, both of single birds, on June 15 and June 19.

Green-winged Teal: Possible breeder [H]; Rare; One male observed in the SE corner of the Park (June 22).

Ring-necked Duck: Possible breeder [H]; Rare; One individual, recorded at the same Beaver pond complex as the previous species (June 14).

Lesser Scaup: Probable breeder [P]; Uncommon; One record (June 14) of a pair from the same location as the two previously-described species.

Common Goldeneye: Probable breeder [P]; Uncommon; Two pairs observed (June 19) at a river meander wetland, in the Kenny Woods area (near the Park's western boundary) (LA).

HAWKS & EAGLES (Accipitridae)

Bald Eagle: Probable breeder [T]; Uncommon; A total of 3 birds was observed along the Athabasca River: one on June 13 (DV, JGa), and two on June 15 exhibiting territorial behavior.

Northern Harrier: Possible breeder [H]; Rare; A male, sighted in the south-central part of the park (June 21) is the sole record (DV, JGd).

Sharp-shinned Hawk: Possible breeder [H]; Rare; Only one record (June 14) of a single bird in the SE portion of the Park.

Northern Goshawk: Possible breeder [H]; Rare; One observation (June 13): a single bird in the vicinity of the Beaver dam complex in the Park's SE corner (TJ).

Red-tailed Hawk: Possible breeder [H]; Rare; A single individual was recorded on June 14; another (? an early migrant) was along the SE edge of the Park on August 18 (TJ).

Golden Eagle: No evidence of breeding [X]; Rare; Two sightings (June 13 [TJ] and June 22) of one bird (possibly the same individual ?) over the Beaver ponds in the SE corner of the Park.

FALCONS (Falconidae)

American Kestrel: Probable breeder [P]; Uncommon; A pair was observed (June 13) along the Athabasca River at the northwest edge of the Park (DV).

GROUSE & ALLIES (Phasianidae)

Ruffed Grouse: Possible breeder [H]; Rare; Single birds recorded (on June 13 and 14) at two locations adjacent to the Athabasca River (JGa).

Spruce Grouse: Possible breeder [H]; Rare; One male seen (June 21) on a squirrel midden, in the south-central portion of the Park (DV).

RAILS & COOTS (Rallidae)

Sora: Possible breeder [H]; Rare; A single bird (June 15), heard at the wetland complex in the Park's SE corner.

CRANES (Gruidae)

Sandhill Crane: Probable breeder [P]; Uncommon; One record (June 21), of two pairs, encountered around a lake in the south-central part of the Park (DV).

SANDPIPERS & ALLIES (Scolopacidae)

Greater Yellowlegs: Probable breeder [P]; Uncommon; Only definite record of this species is of a pair found in the SE corner of the park (June 14).

Lesser Yellowlegs: Possible breeder [H]; Rare; Solitary record (June 21) is of a single bird in the south-central area of the Park (DV).

Marbled Godwit: Confirmed breeder [FL]; Rare; An adult, accompanied by a chick, were reported (August 23) from the southeast boundary of the Park (TJ).

GULLS, TERNS & JAEGERS (Laridae)

Franklin's Gull: No evidence of breeding [X]; Uncommon; One record (June 14) of twelve birds flying over the SE corner of the Park.

Bonaparte's Gull: No evidence of breeding [X]; Rare; Represented by a single report with no details (JGd).

NIGHTJARS (Caprimulgidae)

Common Nighthawk: Probable breeder [C]; Common and widespread; Six records involving at least a dozen birds; all observed in flight.

KINGFISHERS (Alcedinidae)

Belted Kingfisher: Possible breeder [H]; Rare; A single bird sighted along the Athabasca River (June 15).

WOODPECKERS (Picidae)

Northern Flicker: Possible breeder [H]; Uncommon; Two records: of two birds (June 14), and a single (June 21; DV) from the southeast and south-central parts of the Park, respectively.

FLYCATCHERS (Tyrannidae)

Olive-sided Flycatcher: Probable breeder [T]; Fairly common; At least 7 individuals reported. Birds were encountered in Black Spruce 'muskeg' and young Jack Pine-Aspen forest.

Western Wood-Pewee: Possible breeder [H]; Fairly common; Found in the vicinity of Beaver ponds and other small lakes; Most individuals were in Jack Pine forest (often with a subordinate component of Black Spruce and/or deciduous species).

Alder Flycatcher: Probable breeder [T]; Uncommon, localized; Favours deciduous shrubbery/thickets near water.

Least Flycatcher: Possible breeder [H]; Uncommon; Four records, all of single birds; Found in deciduous tangles/second growth (including willows).

Eastern Phoebe: Possible breeder [H]; Rare; Two reports of single birds: at the Beaver pond complex in the SE corner of the Park (June 13; TJ); and along the Athabasca River (June 15).

Eastern Kingbird: Probable breeder [P]; Uncommon; Three records involving four birds: a pair (June 21) in the south-central area of the Park (DV); two individuals (June 15 and June 22) at the Beaver pond complex in the Park's SE corner.

VIREOS (Vireonidae)

Blue-headed Vireo: Possible breeder [H]; Rare; Two birds reported from the SE corner of the park (June 14) constitutes our only record.

Philadelphia Vireo: Possible breeder [H]; Rare; The lone record (June 14) is of a single bird in the southeast portion of the Park.

Red-eyed Vireo: Possible breeder [H]; Rare; Another single-bird record (June 14) from the southeast part of the Park.

JAYS & CROWS (Corvidae)

Gray Jay: Confirmed breeder [FL]; Common and widespread; At least 16 individuals were reported, with fledged young (in the company of adults) being observed on June 14 and 22. Black Spruce 'muskeg' is a preferred habitat. .

Blue Jay: No evidence of breeding [X]; Casual; The only record (June 14) is of a lone individual along the Athabasca River, at the northwest edge of the Park (JGa).

American Crow: Possible breeder [H]; Rare; Two records (possibly involving the same individual) of single birds, along the southeast boundary of the Park, on June 15, and June 17 (TJ).

Common Raven: Possible breeder [H]; Fairly common, widespread; Most records involve flying birds; a group of 4 was the largest party recorded.

SWALLOWS (Hirundinidae)

Tree Swallow: Confirmed breeder [ON]; Uncommon; All 3 records appear to involve the same pair of birds at the Beaver pond complex in the SE corner of the Park. On June 22, the pair was observed entering/leaving their nest (an old woodpecker hole) in a Paper Birch snag near a pond.

CHICKADEES (Paridae)

Black-capped Chickadee: Confirmed breeder [FL]; Uncommon; Two records: a party of 4 (including fledged young) in the southeast part of the Park (June 14), and a lone individual along the Athabasca River (June 15).

Boreal Chickadee: Possible breeder [H]; Rare; Sole record (June 22) is of one bird in Black Spruce (muskeg) in the Park's SE corner.

NUTHATCHES (Sittidae)

Red-breasted Nuthatch: Possible breeder [H]; Rare; Only one recorded—on June 14, in the southeast portion of the Park.

KINGLETS (Regulidae)

Ruby-crowned Kinglet: Confirmed breeder [CF]; Fairly common; Reported from mature Black Spruce/Jack Pine forest around small lakes. Two records, involving at least 5 individuals (June 15 and 22).

BLUEBIRDS & THRUSHES (Turdidae)

Swainson's Thrush: Probable breeder [T]; Uncommon; Five widespread records, each involving single birds.

Hermit Thrush: Possible breeder [H]; Fairly common; Reported from Jack Pine near a fairly dry muskeg, and Black Spruce/Jack Pine forest around small lakes.

American Robin: Probable breeder [P]; Fairly common; Widespread and found in a variety of forest-types.

WAXWINGS (Bombycillidae)

Cedar Waxwing: Possible breeder [H]; Uncommon; One record: a party of four birds observed in the SE part of the Park (June 14).

WOOD-WARBLERS (Parulidae)

Tennessee Warbler: Probable breeder [T]; Rare, localized; Only three individuals reported, two from the SE, and one from the eastern boundary, of the Park; one bird was in a Black Spruce 'bog'.

Orange-crowned Warbler: Probable breeder [T]; Uncommon, localized; Three records involving 5 birds. One individual was encountered in a stand of young Jack Pine containing scattered small Aspens.

Yellow-rumped Warbler: Confirmed breeder [CF]; Common and widespread; Numerous records from a variety of coniferous and conifer-dominated forest types.

Palm Warbler: Confirmed breeder [CF]; Fairly common; Favours Black Spruce-dominated forest types, especially Black Spruce 'muskeg'. Five records involving 9 individuals.

Wilson's Warbler: Possible breeder [H]; Rare and localized; Lone record (June 22) is of a single male, encountered in a Black Spruce 'bog' in the Park's SE corner.

TANAGERS (Thraupidae)

Western Tanager: Possible breeder [H]; Rare; Only one bird recorded (June 14), despite there being no shortage of (apparently) suitable habitat.

SPARROWS & ALLIES (Emberizidae)

Chipping Sparrow: Probable breeder [P]; Common and widespread; Recorded in most types of coniferous/conifer-dominated forest.

Clay-colored Sparrow: Possible breeder [H]; Rare and localized; Only two records, both of single birds; One (June 13) adjacent to the Athabasca River at the northwestern edge of the Park (JGa); the other (June 21) in the south-central part of the Park (DV).

Song Sparrow: Possible breeder [H]; Uncommon; Only two individuals recorded (June 14 and 15). Favours deciduous shrubbery/tangles near water.

Lincoln's Sparrow: Probable breeder [P]; Uncommon, localized; Two records (both on June 22)—a pair in lakeside Black Spruce and willows, and a single bird in a Black Spruce bog—from the wetland complex in the Park's southeast corner.

White-throated Sparrow: Possible breeder [H]; Uncommon; Represented by 5 records (involving 6-7 birds) from the east, SE and south-central parts of the Park.

Dark-eyed Junco: Confirmed breeder [CF]; Fairly common, widespread; Most sightings were made in various age categories of Jack Pine forest.

BLACKBIRDS, ORIOLES & ALLIES (Icteridae)

Red-winged Blackbird: Probable breeder [T]; Uncommon; Three records involving at least 5 individuals.

Common Grackle: Probable breeder [P]; Uncommon; One record (June 15) of 4 birds.

Baltimore Oriole: Possible breeder [H]; Rare; A single individual, on June 14, constitutes the only record.

FINCHES (Fringillidae)

Red Crossbill: Possible breeder [H]; Fairly common; A flock of 15 crossbills, believed to be of this species, was recorded along the eastern boundary of the Park on June 14.

{Note: Two other small parties of crossbills: 6 on June 15, and 5 on June 22, could not be specifically determined.}

2.5.3 Discussion

Just over half (55.2%; = 64 species) of the 116 species on the overall study area bird checklist were encountered within the Park. Eleven of the 108 species forming the combined checklist for the three WPPs we surveyed, were recorded exclusively in Richardson. These species are:

Pied-billed Grebe; Northern Harrier; Golden Eagle; Marbled Godwit; Eastern Phoebe; Philadelphia Vireo; Blue Jay; American Crow; Clay-colored Sparrow; Lincoln's Sparrow, and Baltimore Oriole. Six of these (not underlined) constitute the only records obtained for the study area, whilst the remaining five were also reported elsewhere within it.

The four bird records from the Park considered most significant are:

1) **Golden Eagle**—Pinel *et al.* (1991) label this species "extremely scarce and localized in the northern half of the province." ABBA has three observations but shows no evidence of breeding from the Canadian Shield. Francis and Lumbis (1979) state the species nests on the Canadian Shield, but report that only one productive nest was located during surveys in 1976. Bishoff and Fyfe's (1976) Golden Eagle records are from the northern side of Lake Athabasca.
2) **Marbled Godwit** (Aug 23rd; TJ)—arguably, this report constitutes the most remarkable bird observation of the entire project, and presumably comprises the first breeding record for NE Alberta. ABBA has no sightings nor breeding evidence north of Lesser Slave Lake . Pinel *et al.* (1991) list no northern Alberta records, and Francis and Lumbis (1979) did not encounter this species.
3) **Blue Jay**—this record represents a northward extension of the species' known range in Alberta. Francis and Lumbis (1979) state Blue Jays are a "year-round resident" around Ft. Mackay and note this species has been seen as far north as McClelland Lake. ABBA has no Blue Jay records for the Canadian Shield Region.
4) **Baltimore Oriole**—ABBA gives no records for the Canadian Shield and shows no breeding records anywhere near the northeast quarter of the province. Francis and Lumbis (1979) report a single record (each) for LaFontaine Island and McClelland Lake (both in 1976). Our two records represent a range extension for this species in NE Alberta.

In common with the two other WPPs, the most bird-rich habitats in Richardson River Dunes are wetland related. For example, a comparatively small Beaver pond complex in the SE 'corner' of the Park (Figure 7) proved to be a very productive birding locale. The Athabasca River valley not only provides critical habitat, but also functions as an extremely important conduit for migrants.

Figure 7: Bird-rich Beaver pond complex in the SE 'corner' of the Richardson River Dunes WPP. (PHOTO: Bob Carroll)

B. Outside the Parks

2.6 Richardson River Active Dunefield

2.6.1 Summary

Figure 8: View of steep-flanked, linguoid dunes in the small, active dunefield west of the Richardson River. (PHOTO: Richard Thomas)

This fascinating, small, active dunefield located west of the Richardson River (Figure 8) was visited only once (on June 21st). A total of 12 bird species, representing nine families (family: species ratio = 1:1.33) was observed. Evidence for the presence of a 13th species (and 10th family)—in the form of tridactyl woodpecker workings—was also found. In terms of their breeding status and abundance, these twelve species broke down as follows:

Breeding Status {No. of Species (% of species total) }			Abundance {No. of Species (% of species total)}		
Confirmed	0	(0)	Common	1	(8.3)
Probable	1	(8.3)	Fairly Common	1	(8.3)
Possible	10	(83.3)	Uncommon	10	(83.3)
No evidence	1	(8.3)	Rare	0	(0)

Chipping Sparrow was the only species that could be considered common.

2.6.2 Annotated Checklist of Birds for the Richardson River Active Dunefield and Vicinity. [NOTE: All observations made on June 21,2000].

CRANES (Gruidae)

Sandhill Crane: Probable breeder [P]; Uncommon; A pair flew over the northeast 'corner' of the dunefield (LA).

GULLS, TERNS & JAEGERS (Laridae)

Franklin's Gull: No evidence of breeding [X]; Fairly common; Several observed passing overhead.

NIGHTJARS (Caprimulgidae)

Common Nighthawk: Possible breeder [H]; Uncommon; One in flight, along eastern edge of dunes (LA).

WOODPECKERS (Picidae)

Tridactyl woodpecker species: 'Fresh' workings on a Jack Pine east of dunefield.

FLYCATCHERS (Tyrannidae)

Olive-sided Flycatcher: Possible breeder [H]; Uncommon; One heard in Jack Pine forest on east side of dunefield.

Western Wood-Pewee: Possible breeder [H]; Uncommon; One heard in Jack Pine-dominated mixedwood forest, northeast of the dune complex.

VIREOS (Vireonidae)

Blue-headed Vireo: Possible breeder [H]; Uncommon; Two records, both of single birds, in mature Jack Pine to the west and northeast of the dunefield.

BLUEBIRDS & THRUSHES (Turdidae)

Hermit Thrush: Possible breeder [H]; Uncommon; Two individuals in mature Jack Pine, on the NW and NE sides of the dunefield.

American Robin: Possible breeder [H]; Uncommon; A single bird, heard within Jack Pine forest northeast of the dunes.

WOOD-WARBLERS (Parulidae)

Yellow-rumped Warbler: Possible breeder [H]; Uncommon; One noted in Jack Pine-dominated mixedwood on the northeast side of the dune complex.

SPARROWS & ALLIES (Emberizidae)

Chipping Sparrow: Possible breeder [H]; Common; At least five individuals recorded, all from Jack Pine forest.

Dark-eyed Junco: Possible breeder [H]; One heard in Jack Pine-dominated mixedwood on the east side of the dunefield.

FINCHES (Fringillidae)

Crossbill species: Possible breeder [H]; Uncommon; One party of six recorded; believed to be Red Crossbills, but identification not definite.

2.6.3 Discussion

A mere 10.3% (12) of the study area's total bird list (116 species) was recorded from this site. Presumably, the apparent dearth of species in this area reflects the lack of wetlands immediately adjacent to, or within, the dunefield. During our brief visit we only explored the forest (mostly Jack Pine) close to the dunes on their east and northeast sides, and did not manage to reach the (undoubtedly) more bird-rich habitat bordering the Richardson River

None of the bird species found were 'restricted' to this site (vs. the WPPs or study area as a whole), although tridactyl woodpecker workings were only reported from two other locations (both within Marguerite) elsewhere in the region studied.

Black Bear (one was flushed from its resting spot on the west margin of the dunes), Red Squirrel and Least Chipmunk were the only three mammal species observed by us at this locality.

2.7 Other Significant Records

In all, only eight of the 116 species comprising the Composite Checklist (Appendix 1) for the study area were not recorded in any of the three WPPs. These species, plus their locations, date(s) recorded, and observer(s) involved are as follows:

Herring Gull: ..... one bird, Go-Go Lake, date uncertain (BC).
Black Tern: ..... all at Go-Go Lake; 6 on June 11 (BC); 1 on June 12 (RT).

Mourning Dove: ..... one, June 23, on the winter road, 10.1 km north of the Richardson airstrip turnoff (RT,BC).

Short-eared Owl: ..... one, June 17, just east of winter road, hunting along a lakeshore in Six Lakes area (DV).

Black-billed Magpie: .... June 23, Embarras airstrip, one adult with three young (TJ).

Barn Swallow: ..... various dates/various observers, seen around Richardson Fire Tower and at the winter road bridge over the Richardson River.

Le Conte's Sparrow: .... two at Go-Go Lake, date uncertain (BC).

Western Meadowlark: .. one silent individual, June 23, Embarras airstrip (DV, JGd).

For various reasons, four of these records can be considered unusual/significant, namely:

1) **Mourning Dove**—Francis and Lumbis (1979) regarded this species as a "wanderer" and report observations from the vicinity of Mildred Lake (several individuals) and McClelland Lake (one bird). ABBA has two records of this species in the Ft. McMurray area, but none for the Canadian Shield and no breeding records for the NE quarter of the province. Our sighting is of a bird well north of its established range in Alberta and may be the first record for the Canadian Shield Natural Region.
2) **Short-eared Owl**—according to Francis and Lumbis (1979), this species "breeds" and is "found throughout the area but its abundance is not clearly understood." By contrast, ABBA shows no breeding records for the northern third of the province, and only one sighting in northeast Alberta (near Fort McMurray). Pinel *et al.* (1991) report a record (Oct.10, 1975) for the Syncrude Lease. McGillivray and Semenchuk (1998) and Sibley (2000) do not include northern Alberta within this owl's range. The study area record thus constitutes a rare NE Alberta observation of a species believed to be experiencing a significant decline in its North American population (e.g., Downes *et al.*, 2000).
3) **Black-billed Magpie**—this probably represents the province's first confirmed breeding record for the Canadian Shield Natural Region south of Lake Athabasca. ABBA has two confirmed breeding reports for Fort Chipewyan and one north of Lake Claire. Francis and Lumbis (1979) describe magpies as "resident" and "most common along the Athabasca River and its tributaries." McGillivray and Semenchuk (1998) show its range as extending along the Athabasca River valley north of Ft. McMurray to north of Lake Claire. Pinel *et al.* (1993) note the "recent increase" (i.e., in the early 1980s) "in numbers in the Ft. McMurray area."
4) **Western Meadowlark**—ABBA has one observation near Ft. MacKay; Francis and Lumbis (1979) describe records from McClelland Lake (one on Oct. 7, 1976) and Ft. McMurray airport. They comment that "as clearing and strip-mining operations continue

(this species) will probably become more common as it colonizes these open areas." In similar vein, Pinel *et al.* (1993) note that with continuing forest clearance, this species is "slowly expanding its range northwards" and westward. (Its core range within Alberta covers the Parkland and Grassland Natural Regions.) The Embarras sighting may represent the first documented record for the province's Canadian Shield Natural Region.

3.0 General Overview of Study Area Avifauna

3.1 Composite Checklist

As a result of fieldwork conducted during June and August 2000, a total of 116 species, representing 31 families (family: species ratio = 1: 3.74), were recorded (i.e., seen and/or, heard) within the study area. Physical evidence at least of two others—viz. tridactyl woodpecker workings and a possible Great Horned Owl pellet—were also found, but 116 is the total used in all calculations that follow.

In terms of their (highest recorded) breeding status and 'relative abundance' categories, the species comprising this composite list break down as shown below:

Breeding Status			Relative Abundance		
{No. of Species (% of total species)}			{No. Species (% of total species)}		
Confirmed	25	(21.6)	Found in all 3 Parks	36	(31.0)
Probable	36	(31.0)	Found in 2 of 3 parks	27	(23.3)
Possible	43	(37.1)	Found in only 1 park	45	(38.8)
No evidence	12	(10.3)	Only recorded outside the 3 parks	8	(6.9)

Thus, almost 90 % (104) of the species encountered are known or at least suspected to breed within the area studied. The 25 (21.6%) species listed below are those represented by only a single record and, in the case of the 15 species (= 12.9 % of total list) identified as follows: (1), that record consists of a single individual.

Northern Shoveler (a pair); Greater Scaup (2 pairs); Surf Scoter (1 party of 6 birds); Hooded Merganser (1 party of 3 birds); Broad-winged Hawk (1) ; Sharp-tailed Grouse (1); American Coot (1); Upland Sandpiper (2 pairs) ; Marbled Godwit (1 adult with 1 young); Herring Gull (1); Mourning Dove (1); Great Gray Owl (1); Short-eared Owl (1); Downy Woodpecker (1); Pileated Woodpecker (1); Philadelphia Vireo (1); Blue Jay (1); Black-billed Magpie (1 adult with 3 young); Winter Wren (1); Vesper Sparrow (3-4 birds); Western Meadowlark (1); Yellow-headed Blackbird (5 birds); Brown-headed Cowbird (1); White-winged Crossbill (2 birds); and Pine Siskin (1).

For conservation planning purposes it is instructive to subdivide this composite list into resident species = 16 (13.8%) versus summer visitors = 100 (86.2%), and then further break down the latter category into short distance vs. Neotropical migrants (NTMs). {**Note:** NTMs are defined as birds that spend the bulk of their lives in the tropics but visit Canada and/or, the USA during our summer to breed. Two basic types of NTMs are recognized: Obligate NTMs are species in which all or a large majority of their Canadian/U.S. populations winter in the Neotropics (i.e., the 'New World'/ Latin America between the Tropics of Cancer and Capricorn). For Facultative NTMs, this holds true for only a minority of their populations (Thomas, 1994). Short-distance migrants spend the winter in southern and/or coastal Canada and/or, the USA.}. The results are as follows:

Category		{Number of Species	(% of species total}
Residents:		16	(13.8)
Summer Visitors:	Short-distance migrants	26	(22.4)
	Obligate NTMs	37	(31.9)
	Facultative NTMs	37	(31.9)
	Total NTMs	74	(63.8)

It is noteworthy that almost two-thirds of the study area list consists of NTMs— with an even split between Obligate and Facultative species. Unsurprisingly, given the long, harsh winters that characterize NE Alberta, only a relatively small proportion of the species total (13.8%) can be regarded as resident. At least four of the latter i.e., Great Gray Owl, Red-breasted Nuthatch, Red and White-winged Crossbills are known to undertake irruptive movements during times of scarce food supply.

3.2 Comparisons with Previous Published and Unpublished Study Area Birdlists

With a single exception (i.e., Marbled Godwit), the composite checklist (Appendix 1) described here is based upon one brief (12-day) period of field work undertaken during June 2000. Geographically and chronologically therefore, only a fraction of the study area (and its 'birding year') was 'sampled' for this project. As it stands, this checklist comprises an amalgam of residents, regular summer visitors and a handful of vagrants. Some obvious questions that arise include: 1) how many species actually present within the study area during our fieldwork period did we miss? (i.e., how 'efficient' was our limited data gathering effort?) ; 2) how many additional species pass through the inventory area during the region's two main migration periods? And hence, 3) realistically, what is the potential total number of species that a comprehensive birdlist for the area may eventually contain? Partial answers to these questions can be obtained by comparing our present composite list with three other sources of avian information, two of which—one published and one unpublished i.e., Francis and Lumbis (1979) and Landals (1978),

respectively—cover more or less the whole of the study area; the third being unpublished bird records for the area surrounding the Richardson Fire Lookout Tower (Ashacker and Waechter, 1995).

Francis and Lumbis (1979): In their annotated bird checklist for the AOSERP study area, Francis and Lumbis describe a total of 235 species. They subdivided those species into the following categories:

Resident	19
Winter Resident	3
Breeds	150
Migrant	42
Wanderer	21
Total:	235

Not unexpectedly, we missed 40 of their migrant species, all three winter residents and 17 of their wanderers. Subtracting these 60 taxa from their total leaves 175 species – almost two-thirds (66.3%) of which (116) we managed to record during our comparatively brief stint in the field. Our total therefore represents quite a respectable 'return' for the effort expended on surveys. Overall, one third of the 150 species comprising Francis and Lumbis's (1979) "breeds" list is absent from our composite checklist. Of these 50 'missing' species, the following 12 are regarded as 'surprise misses' (i.e., they represent taxa we were expecting to find) : American Wigeon; Redhead; Canvasback; Common Merganser; Osprey; Short-billed Dowitcher; Yellow-bellied Flycatcher; Marsh Wren; Golden-crowned Kinglet; Black-and-white Warbler; American Redstart, and Fox Sparrow. Similarly, of their eight "resident" species we failed to find, Great Horned Owl and Hairy Woodpecker must rank as the two most surprising absentees.

Landals (1978): Landals (p.2) described the region she studied as stretching " from the Athabasca River east to the Saskatchewan border, and from the Firebag River in the south to Lake Athabasca in the north." She states (Ibid., p. 185) that "although little time was spent in the actual study of bird life in the field, sightings were recorded and species identified where possible." Of the 31 species comprising Landals' (p.186; table 24) "check-list of birds in the study area," 13 are characterized by her as "nesting " and a further seven as "probably nesting." Two species reported by Landals viz. Willow Ptarmigan and Purple Finch, were not found during the current study, and one species—Franklin's Gull, for which we had no evidence of breeding, is identified by her as "nesting." Landals' account contains interesting information concerning terns that were nesting "in the centre of the active sand dune field" i.e., in the heart of what is now the Athabasca Dunes Ecological Reserve. However, Landals opted for the 'expected species' and identified the terns as Commons but, to her credit, noted the difficulties inherent in differentiating

Common from Arctic Terns, and stated that further fieldwork was needed in order " to determine if Arctic terns (sic) are nesting in the Athabasca sand dunes."

Richardson Fire Tower Bird Records: Between May 1, 1990 and August 31, 1995, fire season personnel Gordon Ashacker and Anne Waechter recorded a total of 109 bird species in the general vicinity of the Richardson Forest Lookout Tower. (The authors are grateful to tower person Mike Mudry who, in June 2000, provided us with photocopies of these records.) During their six seasons at Richardson Tower, Ashacker and Waechter listed every 'new' bird species they observed, arranged in chronological order according to the date it was first encountered. These dates are useful since they separate spring and fall migrants and help clarify the timing of peak bird passage (May-early June; mid July-to-mid September) across the region.

Overall, 34 species reported by Ashacker and Waechter were not found during the present study. These taxa (subdivided into spring migrants; June sightings; and fall migrants) and their 'first occurrence' dates (day, month, year), are listed below.

Spring Migrants (18 species):

Greater White-fronted Goose (12/5/90)
Snow Goose (12/5/90)
Tundra Swan (6/5/90)
Red-breasted Merganser (13/5/90)
Osprey (29/5/90)
Rough-legged Hawk (10/5/95)
Ruby-throated Hummingbird (26/5/95)
Horned Lark (25/5/93)
American Redstart (28/5/91)
Lark Sparrow (22/5/94)
Fox Sparrow (19/5/92)
Harris's Sparrow (17/5/94)
White-crowned Sparrow (5/5/92)
Snow Bunting (22/5/92)
Brewer's Blackbird (26/5/93)
Purple Finch (10/5/91)
Common Redpoll (18/5/92)
Evening Grosbeak (12/5/90)

June Sightings (4 species):

Great Blue Heron (26/6/93)
Rock Dove (12/6/94)
Cliff Swallow (24/6/95)
American Goldfinch (17/6/94)

Fall Migrants (12 species; * = 'resident' species probably undertaking post-breeding dispersal):

American White Pelican (13/7/91)
Peregrine Falcon (19/8/94)
*Great Horned Owl (14/8/93)
Northern Pygmy-Owl (29/8/95)
*Three-toed Woodpecker (28/7/93)
*Black-backed Woodpecker (10/8/93)
Yellow-bellied Flycatcher (1/8/92)
Warbling Vireo (8/7/90)
American Pipit (30/8/93)
Bay-breasted Warbler (3/9/94)
Black-and-white Warbler (31/8/93)
Savannah Sparrow (14/8/91)

Of the four species recorded in June, all except Cliff Swallow are comparative rarities that we did not expect to find. A number of Ashacker and Waechter's records are of rarities and, in two cases, refer to extreme rarities. The species in question are:

- **American Goldfinch**—out of range according to ABBA. Francis and Lumbis (1979) label it a "wanderer" and note it has been recorded at Ft. MacKay, Ft. McMurray, and Thickwood Hills Tower.
- **Rock Dove**—another "wanderer" (Francis and Lumbis, 1979) that "may be resident in Ft. McMurray and Ft. Chipewyan."
- **Great Blue Heron**—out of range, based upon ABBA; reported breeding along the south shore of Lake Athabasca (Salt and Salt, 1976); Francis and Lumbis (1979) note that breeding populations in the region are small.
- **Lark Sparrow**—the normal range of this summer visitor to Alberta is the Grassland Natural Region (Semenchuk, 1992). Francis and Lumbis (1979) have no records. This species must at best, be a casual visitor to the Canadian Shield.
- **Northern Pygmy-Owl** — essentially a Foothills species in Alberta. If correct, this is a truly remarkable record. According to ABBA, the breeding location closest to the study area is at Utikuma Lake.

Based upon the three sources of information discussed above, plus a review of the additional published literature concerning bird distribution in Alberta, the authors believe the eventual list of birds that regularly occur in the study area (i.e., excluding vagrants) should approach the 210-species mark.

3.3 Bird Distribution in the Study Area

Francis and Lumbis (1979) reported that "a total of 169 bird species are known to have bred in the 28,500 km ^{2} AOSERP study area," and concluded that (contrary to some popular perceptions) "the oil sands area is not characterized by an impoverished avifauna." They note (as demonstrated by Erskine, 1977) that Canada's Boreal Forests are "capable of supporting an abundance of breeding birds."

With summer visitors and residents comprising most of its 116 species (31 families) recorded to date, the study area avifauna is relatively diverse. As a whole however, this region appears to support low densities of birds. Arguably, this is its most striking ornithological characteristic. Some related features of the study area's birdlife that the authors found puzzling were: a) the general scarcity of raptors, especially owls; b) the low total number of woodpeckers recorded; and, c) only a single representative of the wren family was found during the entire project.

Both authors have amassed extensive field experience in the Dry and Central Mixedwood Sub-Regions of Alberta's Boreal Forest Natural Region. The contrast between the bird population densities of such mixedwood forests and those of the study area could not be more marked! Many study area forests and other habitats (including some lakes) appeared to be virtually devoid of birds. On occasion, forest stands were so quiet that the effect was almost eerie. Fortunately, this overall scarcity of birdlife was relieved by the presence of comparative 'oases' of activity and diversity. Not unexpectedly on a sand plain, such 'hot spots' were typically associated with the presence of water, for example: river valleys/riparian woodlands and deciduous thickets; dunefield margin wetlands; Beaver pond complexes; and a limited number of lakes (Figures 2, 6 and 7). Ashacker and Waechter (1995) capture this important attribute well when they point out that "the key…to seeing…species is to (visit) the (area's) various small ecosystems. Each pond, each creek, each river bed, every lake and each forest type harbours its own unique species." Birdlife is thus both thinly and locally distributed (i.e., 'spotty' in its occurrence) across the region.

Some obvious questions arise from our generalized observations, namely:

- Are these low bird densities a 'real' phenomenon, or some artifact of our 'sample set'?
- Was the year 2000 breeding season 'normal' or 'aberrant' in terms of bird abundance in study area? And,
- What are the key factors limiting bird numbers and distribution over this portion of NE Alberta?

Based on conversations with our colleagues and past field experience, we are convinced our impressions of low bird densities reflect the true situation—although we lack the quantitative evidence to prove this assertion. Interestingly, mammal numbers (especially small mammals) were also very low during the study period. As have many other ornithologists, Francis and Lumbis (1979) noted that "bird populations fluctuate from year to year" and "many bird species exhibit apparent variability in their habitat preference from year to year." Could 2000 simply have been a poor year for most bird species across the region? How probable is it that a wide range of water - and land-bird populations in a given area would simultaneously be experiencing a major (year-to-year) decline? Unfortunately, without longer-term, detailed statistical data, these question remain unanswerable.

According to Francis and Lumbis (1979), " species breed in sub-optimal habitats…at much lower population densities" (versus optional habitats) and, "when the population level of a given species is low, that species will usually only breed in its optimal habitats." Presumably, the project area's habitats are suboptimal for birds in comparison to the highly productive Peace-Athabasca Delta to

its north and Boreal Mixedwoods to the south. We have little or no idea of recent, regional population trends for most species within the area studied.

Figure 9: Mature Jack Pine forest, Maybelle River WPP. Note lack of understorey. (PHOTO: Bob Carroll)

In all likelihood, the reasons for the aforementioned bird distribution characteristics observed in the study area are fairly straightforward and relate, primarily, to the prevalence of Jack Pine forest (Figure 9) across this portion of the province. In their Boreal Forest bird population density studies, both Erskine (1977) and Francis and Lumbis (1979) recorded the lowest densities (expressed as breeding pairs per square kilometre) in Jack Pine forest: 80 and 47, respectively. Francis and Lumbis (p. 63) state that "Pine forests appear to be invariably poor as breeding bird habitat as regards total population, species richness and the C.I.N." (i.e., the Coefficient of Integral Niches—"a measure of the number of species for which a given habitat type is optimal." Their assessment is supported by the earlier work of Snyder (1950), who compared the productivity of various coniferous forest types for birds and found that pine forests are far less productive than either spruce-fir or fir forests.

In other words, the low bird densities observed during our 2000 fieldwork are probably 'normal' relative to other, more productive habitat-types elsewhere in northern Alberta. Of course, a lot more work would be required to verify this conclusion.

3.4 Conservation Conclusions

There are a number of immediate and potential future significant conservation concerns related to the bird populations of the three WPPs surveyed and the study area as a whole. They are reviewed briefly here:

- The single most serious and urgent problem is protection of the tiny population of Arctic Terns that nest within Athabasca Dunes Ecological Reserve. As far as is known, this breeding colony is unique for Alberta. As demonstrated by Figure 10, it is extremely vulnerable to human disturbance. Birders and other nature enthusiasts may want to visit the Ecological Reserve. Plans should be put in place to proactively cope with (and mitigate) this potential increase in visitation and the inevitable, additional stresses it will place upon this colony's chances of survival—hence further jeopardizing this species' already precarious foothold in the province.

Figure 10: Fairly recent ATV tracks crossing gravel (deflation lag) flats, Athabasca Dunes Ecological Reserve, June 19, 2000. On this substrate footprints, tyre tracks, etc. persist for years. One set of these ATV tracks passed only 60 m from an active tern nest. (PHOTO: Richard Thomas)

- With the current boom in oil sands developments, Ft. McMurray's burgeoning and relatively high-income human population will continue to expand. As a result, people will be travelling north in ever increasing numbers in search of outdoor recreational opportunities. In practical terms, this translates into rapidly growing ATV traffic in the region, with the attendant likelihood of additional environmental degradation. The latter already includes unofficial trail and campsite creation. Increased boat traffic on lakes and rivers will lead to disturbance (and possible breeding failure) of sensitive species such as Common Loons during the nesting season. Destruction of the fragile lichen ground cover (e.g., due to the passage of ATVs etc.) within the region's Jack Pine forests, renders their sandy soils vulnerable to wind erosion—creating blow-outs.
- The oil sands 'surface mineable area' is 3,450 km ^{2} in size. Mining/processing operations will result in further impacts on the natural environment (e.g., habitat destruction, acid rain deposition).
- It is essential that personnel are available to carry out enforcement/protection duties in the region.

- Fire suppression is standard policy in Alberta's forests. The region's pine forests are fire-adapted. Suppression eventually results in unnaturally high fuel loading and inevitably leads to more intense-than-usual conflagrations than would occur naturally.
- Pressure persists to construct a permanent (paved) highway between Ft. McMurray and Ft. Chipewyan. The potential environmental impacts of such a road (via increased visitation and numerous other factors) upon the ecological integrity of the three WPPs (and Wood Buffalo National Park) are enormous. {**Note:** Northeast Alberta contains almost all of the province's surviving wilderness townships; less than 9% of Alberta's Boreal Forest Natural Region remains in a pristine/wilderness state (AEP, 1998).}
- Nearly two-thirds of the study area's composite species list consists of NTMs. Over the last decade in particular, the ecology and conservation of NTM landbirds—on both their wintering and breeding grounds—has been the focus of much research, because populations of many such species are undergoing serious declines (cf. Thomas, 1994).
- Only three of the 116 species recorded during this study (i.e., Surf Scoter, Hooded Merganser and Golden Eagle) are on the Alberta Natural Heritage Information Centre's (ANHIC) "tracking" list, whilst another five are on its "watch" list. (The latter species are: Sharp-tailed Grouse; Sandhill Crane; Upland Sandpiper; Black Tern, and Short-eared Owl.) In the writers' opinion, these lists fail to fully reflect the true risk status of many of Alberta's bird species, when one considers their declining populations and loss of habitat within and outside the province. Additions to these lists are suggested in Section 4.2 below. Observations of (apparently) nesting Upland Sandpipers in Maybelle WPP are interesting because this species is threatened due to habitat loss in its more typical, Grassland Natural Region breeding grounds in SE Alberta. Also encouraging is the frequency of Common Nighthawk sightings within the study area. It seems highly probable that northeast Alberta remains a stronghold for this species, which has undergone significant declines elsewhere in the province (e. g., southern Alberta).
- Finally, it should be noted that expansions and declines in the numbers and ranges of different species and groups of birds over time, faithfully reflect the impacts of human-induced, landscape-scale, ecological changes. For example, increased settlement/urbanization, growth of the White Area at the expense of the Green Area, and especially, continued forest clearance for oil sands projects in NE Alberta, has permitted and continues to allow more 'open country'-adapted species (such as American Crow; Blue Jay; Black-billed Magpie; Red-tailed Hawk; Western Meadowlark; Mourning Dove; Vesper Sparrow, and Brown-headed Cowbird) to extend their ranges northward into areas where they were unknown or scarce in the early 1900s. The result has been the (on-going) displacement and/or loss of population after population of the forest-dependent avian species/communities originally native to the region. Conversion of natural ecosystems into

human-dominated landscapes shows no sign of slowing down in NE Alberta — quite the reverse, in fact! These changes add immeasurably to the long-term importance—as protected "islands" of native biodiversity and + naturally-functioning ecosystems of the three WPPs discussed herein.

4.0 Recommendations

To conclude this report, we have assembled lists of recommendations concerning: a) the conduct of future ornithological inventory work in the region; b) priorities for additional research (beyond further, basic, reconnaissance-type surveys); and, c) the protection of birdlife in the three WPPs that form the focus of this study.

4.1 Methods

1) **Efficiency**. To maximize survey efficiency, birders should camp within the parks being inventoried. This eliminates a significant proportion of transportation delays, and permits birders to sample the dawn chorus. Also, more time should be spent, prior to actual fieldwork, identifying the best 'must visit,' potential hot spots for birdlife within each park.

2) **Timing**. Species arrival dates (Francis and Lumbis, 1979; Ashacker and Waechter, 1995) clearly show that late May-early June is the optimal time to be in the field in this region. During this period, some migrant waterfowl and shorebirds are still passing through. Passerine migrants are also still in evidence while summer visitors, such as forest songbirds, are setting up territories. Birdsong is likely at its peak during the first 10-14 days of June. Autumn migration is a much more protracted affair and visits in early August and early September would be needed to 'capture' southbound representatives of most families that pass through the region.

4.2 Additional Research

More time in the field is needed to improve our understanding of the region's avifauna and gather sufficient information to enable intelligent management decisions to be made. In terms of both seasonal and geographic coverage, the work done so far must be regarded as preliminary at best. For example, no attempts were made to quantify the population sizes of birds breeding in the parks. Further detailed research is strongly recommended to try and answer the questions listed below. {**Note:** The most pressing of these questions refer to the Ecological Reserve's small breeding colony of Arctic Terns. This population is highly vulnerable to extirpation and must be considered "endangered". Over the last 30 years the number of breeding pairs has apparently declined by an order of magnitude.}

1) **Arctic Terns**. It is vital that this colony be carefully monitored. However, monitoring should be non-invasive (i.e., of the 'hands off'/ passive variety). Permits to band or "collect" (i.e., kill) any of these terns should not be granted. (Arctic Tern migration is one the best understood in the bird world. The last thing these birds need is harassment in the name of scientific study.) Research must be directed at answering the following questions:
   - What has caused the decline in the Reserve's breeding population of terns?
   - Hence, what factors are limiting the growth of this colony?
   - Is predation—such as that by Red Foxes described by Landals (1978, p.185) still an important factor?
   - When do the terns arrive? When do they lay their eggs? When do those eggs hatch? When do the young fledge/leave the active dune area?
   - How many nests are there/where are they located?
   - What is the colony's productivity? (i.e., how many young survive/are successfully fledged?)
   - Where do the adults feed? And what is the status of the fish stocks upon which they prey? (i.e., are their prey species in decline?)
   - What is the ecological state of the lakes where they feed? In the case of the two latter questions, a cooperative research undertaking is recommended (that combines lake hydrology/ecology with tern biology), to address questions such as: are acid rain effects detectable in the area's lakes? Is their productivity stable or declining?
   - How much human disturbance is there during the nesting season? Specifically, how much illegal ATV activity (Figure 10) takes place within the Ecological Reserve?

2) More **general bird research questions** include:
   - Are there any other Arctic Tern nesting sites in NE Alberta?
   - Are there any significant migrant stopover sites within the three wildland parks surveyed?
   - Do the low bird densities observed across the region in 2000 represent the 'normal' state of affairs?

3) Finally, any relevant ***Atlas of Breeding Birds of Alberta*** **data** should be obtained (from the Federation of Alberta Naturalists), analyzed, and integrated with the findings in this report.

4.3 Protection

The ecosystems of this region are very vulnerable to anthropogenic damage/degradation. Without adequate protection, the three parks described herein are wide open, literally and figuratively, to abuse. Staffing levels for the region are currently inadequate to provide

satisfactory levels of monitoring/enforcement. All management decisions concerning potential 'development'/promotion of these parks must carefully consider this key reality. Because of their accessibility, 'policing' of Maybelle and Richardson should be the priority, with safeguarding the Ecological Reserve's Arctic Tern colony being the most urgent protection issue. Our recommendations are as follows:

- Provision must be made for full-time monitoring/protection of the tern colony throughout the nesting season. Perhaps a volunteer "tern guardians" program could be initiated.
- The well-being of the terns should be officially recognized as a management issue of paramount importance. Human disturbance—due to visiting birders and photographers, or illegal ATV incursions, has to be controlled. Fortunately, the colony is on an ecological reserve—the most stringently protected site category within the provincial 'parks' system. However, legislated protection is meaningless without enforcement.
- Strategies successfully used to minimize disruption of British tern colonies have included surrounding the nesting area with predator-proof, wire fencing, or a barrier consisting of stakes and rope. A closest-approach buffer zone (Figure 11) with a minimum radius of 50 metres is recommended around each nest site on the dunefield. This could be demarcated with stakes and rope as described above. Appropriate control/information signage will also be required. Such barriers tend to attract people and, possibly, predators. On an active dunefield, persistence of human scent trails should not be a problem. However, posts/flagging, etc. may draw the attention of Common Ravens. Monitoring and experimentation will be required to perfect the protection program. Obviously, protective measures must take precedence over aesthetic concerns.

Figure 11: Arctic Tern dive-bombing a human intruder who has approached too close to its nest site, Athabasca Dunes Ecological Reserve, June 17, 2000. (PHOTO: Lorna Allen)

- Returning to the question of signage, the main information boards for the reserve should be emended to reflect its importance for Arctic Terns (not Common terns, as presently the case).

- Based upon its unique geomorphological, ecological and sedimentological features, we urge the Government of Alberta to set aside the small active dunefield west of the Richardson River (Figure 8) as an ecological reserve. This location contains dune forms not present elsewhere in the province and is a remarkable, natural 'laboratory' for the observation of aeolian sedimentological processes. No mechanized traffic (e.g. ATV's, dirt bikes, etc) should be allowed to disfigure this beautiful dunefield.
- In regional terms, controlling access is the key protection issue. Maybelle and Richardson should be the priorities in this regard. No access to Marguerite should be created at the present time. Strenuous efforts should be devoted to making sure no new access or campsites are illegally created in this ecologically fragile region. Any facility development that occurs should be located in already-impacted areas outside the WPPs.
- Park boundary signage (including permitted-activity information) has to be an operational priority.

Finally, we list some recommendations concerning the ANHIC tracking lists:

- Arctic Tern must be added to the ANHIC list of tracked birds.
- We also strongly suggest that the following species encountered in the study area be added to this list: Greater Scaup; Broad-winged Hawk; Sharp-tailed Grouse; Upland Sandpiper; Franklin's Gull; Three-toed Woodpecker; Pileated Woodpecker; Winter Wren; Philadelphia Vireo and Western Tanager.
- Based upon information *in* Downes (2000), the following bird species should also be tracked by ANHIC: Boreal Chickadee; Boreal Owl, Olive-sided Flycatcher and Rusty Blackbird.
- A new study by Dr. Mark Anielski (U. of Alberta) to be published at the end of February, 2001, indicates that all of Alberta's old-growth forest, outside of genuine protected areas, will be gone within 42 years! Clearly, more old-growth dependent organisms should be included on ANHIC's tracking lists.

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APPENDIX 1

Composite Checklist of Birds for the Study Area

Key to abbreviations: 1) Highest breeding status categories—conf. = confirmed; prob. = probable; poss. = possible; X = no evidence of breeding. 2) Parks—A = Marguerite Crag and Tail; B = Maybelle River; C = Richardson River Dunes; O = recorded in study area, but not within any of the three parks.

	LOONS		
❑	Common Loon	Prob.	*A,B,C*
	GREBES		
❑	Pied-billed Grebe	Poss.	*C*
❑	Horned Grebe	Prob.	*A,B*
❑	Red-necked Grebe	Conf.	*A*
❑	Eared Grebe	Prob.	*A,B*
	GEESE, SWANS & DUCKS		
❑	Canada Goose	X	*A,B*
❑	Mallard	Prob.	*A,B,C*
❑	Blue-winged Teal	Prob.	*B*
❑	Northern Shoveler	X	*B*
❑	Northern Pintail	X	*B*
❑	Green-winged Teal	Prob.	*A,B,C*
❑	Ring-necked Duck	Prob.	*A,B,C*
❑	Greater Scaup	Prob.	*A*
❑	Lesser Scaup	Prob.	*A,B,C*
❑	Surf Scoter	Prob.	*B*
❑	White-winged Scoter	Prob.	*A*
❑	Bufflehead	Prob.	*A*
❑	Common Goldeneye	Prob.	*A,B,C*
❑	Hooded Merganser	X	*B*
	HAWKS & EAGLES		
❑	Bald Eagle	Conf.	*B,C*
❑	Northern Harrier	Poss.	*C*
❑	Sharp-shinned Hawk	Conf.	*A,B,C*
❑	Northern Goshawk	Poss.	*B,C*
❑	Broad-winged Hawk	Poss.	*A*
❑	Red-tailed Hawk	Prob.	*A,B,C*
❑	Golden Eagle	*X*	*C*
	FALCONS		
❑	American Kestrel	Prob.	*A,C*
❑	Merlin	Prob.	*B*
	GROUSE & ALLIES		
❑	Ruffed Grouse	Poss.	*B,C*
❑	Spruce Grouse	Conf.	*A,B,C*
❑	Sharp-tailed Grouse	Poss.	*B*
	RAILS & COOTS		
❑	Sora	Prob.	*B,C*
❑	American Coot	Conf.	*B*
	CRANES		
❑	Sandhill Crane	Prob.	*A,B,C*
	PLOVERS		
❑	Killdeer	Conf.	*B*
	SANDPIPERS & ALLIES		
❑	Greater Yellowlegs	Conf.	*A,B,C*
❑	Lesser Yellowlegs	Prob.	*A,B,C*
❑	Solitary Sandpiper	Prob.	*A*
❑	Spotted Sandpiper	Conf.	*A ,B*
❑	Upland Sandpiper	Conf.	*B*
❑	Marbled Godwit	Conf.	*C*
❑	Common Snipe	Prob.	*A,B*
	GULLS & ALLIES		
❑	Franklin's Gull	X	*A,B,C*

❑	Bonaparte's Gull	Prob.	*A,B,C*
❑	Ring-billed Gull	X	*A,B*
❑	Herring Gull	X	*O*
❑	Common Tern	Poss.	*B*
❑	Arctic Tern	Conf.	*B*
❑	Black Tern	X	*O*
	DOVES		
❑	Mourning Dove	X	*O*
	OWLS		
❑	Great Horned Owl	A (poss. pellet)	
❑	Great Gray Owl	Poss.	*B*
❑	Short-eared Owl	Poss.	*O*
	NIGHTJARS		
❑	Common Nighthawk	Prob.	*A,B,C*
	KINGFISHERS		
❑	Belted Kingfisher	Prob.	*B,C*
	WOODPECKERS		
❑	Yellow-bellied Sapsucker	Prob.	*B,C*
❑	Downy Woodpecker	Poss.	*B*
❑	Northern Flicker	Conf.	*A,B,C*
❑	Pileated Woodpecker	Poss.	*A,B*
	FLYCATCHERS		
❑	Olive-sided Flycatcher	Prob.	*A,B,C*
❑	Western Wood-Pewee	Poss.	*B,C*
❑	Alder Flycatcher	Prob.	*A,B,C*
❑	Least Flycatcher	Poss.	*B,C*
❑	Eastern Phoebe	Poss.	C
❑	Eastern Kingbird	Prob.	*A,B,C*
	VIREOS		
❑	Blue-headed Vireo	Poss.	*A,B,C*
❑	Philadelphia Vireo	Poss.	*C*
❑	Red-eyed Vireo	Poss.	*A,B,C*
	JAYS & CROWS		
❑	Gray Jay	Conf.	*A,B,C*
❑	Blue Jay	X	*C*
❑	Black-billed Magpie	Conf.	*O*
❑	American Crow	Poss.	*C*
❑	Common Raven	Conf.	*A,B,C*
	SWALLOWS		
❑	Tree Swallow	Conf.	*A,B,C*
❑	Barn Swallow	Conf.	*O*
	CHICKADEES		
❑	Black-capped Chickadee	Poss.	*A,B,C*
❑	Boreal Chickadee	Poss.	*A,C*
	NUTHATCHES		
❑	Red-breasted Nuthatch	Poss.	*A,C*
	WRENS		
❑	Winter Wren	Poss.	*B*
	KINGLETS		
❑	Ruby-crowned Kinglet	Conf.	*A,B,C*
	BLUEBIRDS & THRUSHES		
❑	Mountain Bluebird	Poss.	*B*
❑	Swainson's Thrush	Prob.	*A,B,C*
❑	Hermit Thrush	Conf.	*A,B,C*
❑	American Robin	Conf.	B,C
	WAXWINGS		
❑	Bohemian Waxwing	Poss.	*B*
❑	Cedar Waxwing	Poss.	*B,C*
	WARBLERS		
❑	Tennessee Warbler	Prob.	*A,B,C*
❑	Orange-crowned Warbler	Prob.	*A,B,C*
❑	Yellow Warbler	Poss.	*A,B*
❑	Magnolia Warbler	Poss.	*A*
❑	Yellow-rumped Warbler	Conf.	*A,B,C*
❑	Palm Warbler	Conf.	*A,B,C*
❑	Ovenbird	Poss.	*A*
❑	Northern Waterthrush	Poss.	*A,B*
❑	Mourning Warbler	Poss.	*A*

❑	Common Yellowthroat	Poss.	*A*
❑	Wilson's Warbler	Poss.	*B,C*
	TANAGERS		
❑	Western Tanager	Prob.	*B,C*
	SPARROWS & ALLIES		
❑	Chipping Sparrow	Conf.	*A,B,C*
❑	Clay-colored Sparrow	Poss.	*C*
❑	Vesper Sparrow	Poss.	*B*
❑	Le Conte's Sparrow	Poss.	*O*
❑	Song Sparrow	Conf.	*B,C*
❑	Lincoln's Sparrow	Prob.	*C*
❑	Swamp Sparrow	Poss.	*B*
❑	White-throated Sparrow	Prob.	*A,B,C*
❑	Dark-eyed Junco	Conf.	*A,B,C*
	BLACKBIRDS & ALLIES		
❑	Red-winged Blackbird	Prob.	*B,C*
❑	Western Meadowlark	X	*O*
❑	Yellow-headed Blackbird	Prob.	*B*
❑	Rusty Blackbird	Poss.	*B*
❑	Common Grackle	Conf.	*A,B,C*
❑	Brown-headed Cowbird	Poss.	*B*
❑	Baltimore Oriole	Poss.	*C*
	FINCHES		
❑	Red Crossbill	Poss.	*B,C*
❑	White-winged Crossbill	Poss.	*B*
❑	Pine Siskin	Poss.	*B*