



**Birds of North Peace River (Fort St. John and Vicinity),
British Columbia, 1975-1999**
Part 1 (Introduction and Nonpasserines: waterfowl through woodpeckers)

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Abstract

The North Peace River region of northeastern British Columbia is home to at least 258 species of birds. Some of these are unique to the province as migrants, summer and winter visitors and breeders. The following article is a compilation of information on the nonpasserines (waterfowl through woodpeckers) for this area. A second article, covering the passerines (flycatchers through Old World sparrows), will follow.

Although historical information has been included in each species account, most of the information in this article has resulted from my extensive fieldwork between 1975 and 1989 and supplemented with my additional observations and those of friends through 1999. It includes occasional additional records from literature such as McKelvey (1982). Details are presented for population status, breeding and non-breeding habitat, distribution, occurrence, and breeding for all regularly occurring species; full details of individual records are provided for rare species.

Introduction

The North Peace River region of northeastern British Columbia (Figure 1) is home to at least 258 species of birds. Some of these are unique to the province as migrants, summer and winter visitors and breeders (Figure 2). The following article is a compilation of information on the nonpasserines (waterfowl through woodpeckers) for this area. A second article, covering the passerines (flycatchers through Old World sparrows), will follow.

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species; full details of individual records are provided for rare species.

The W.A.C. Bennett Dam on the Peace River upstream of Hudson's Hope began operation in 1968. In 1980, the Peace Canyon Dam (also known as Site One) between the Bennett Dam and Hudson's Hope was completed, creating a reservoir called Dinosaur Lake. In 2010, the province gave initial approval for the construction of another large dam, "Site C". It would be located south of Fort St. John, and downstream of the other dams. The reservoir created by this dam would inundate a portion of the North Peace River region study area.

Since the ornithology of the Peace River region is poorly known, and many species occurring in British Columbia are restricted to the area, the primary purposes of this paper are to stimulate further investigations of the region's avi-fauna and to provide baseline information for the proposed dam and other potential environmental problems that may arise.

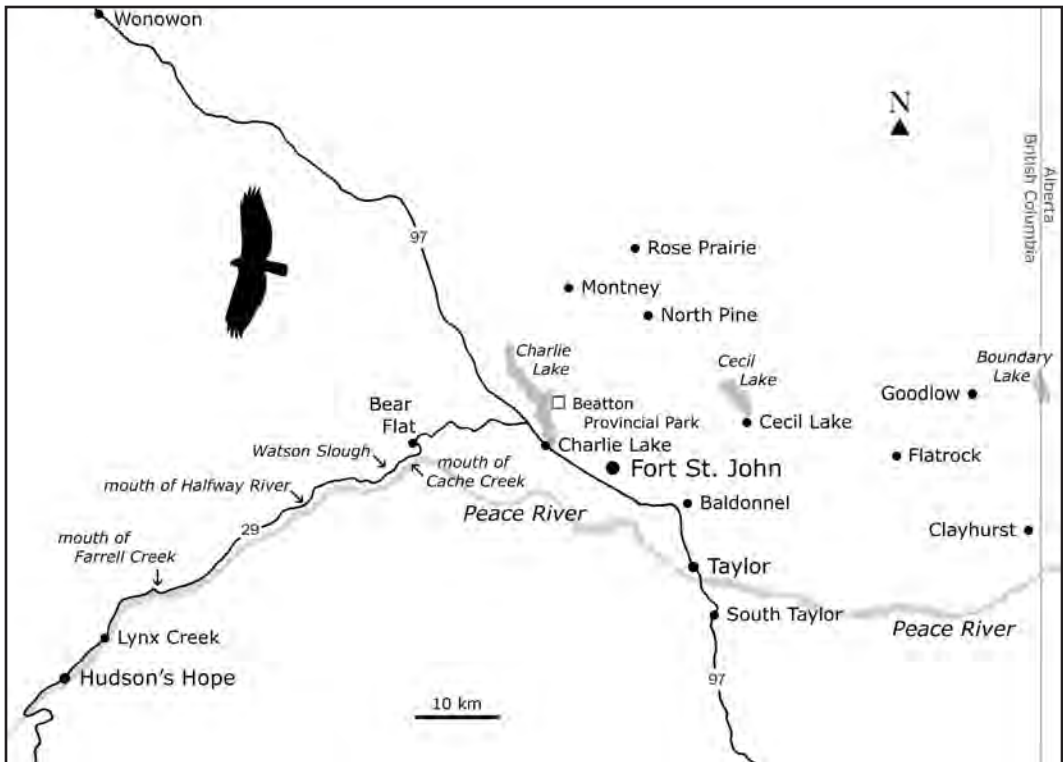


Figure 1. Map of the entire study area. Most of the data have been collected in the vicinity of Fort St. John accessible by car, and occasionally by boat. Major locations visited are included. *Map prepared by Mark Nyhof.*



Figure 2. The largest Eared Grebe colony in British Columbia occurs in the North Peace River region on Cecil Lake. In some years, due to lake water levels, adults are still trying to locate suitable nesting spots in late June and may not nest. *Photo by R. Wayne Campbell, 20 June 2008.*

History of Ornithology in the Peace River Region, 1922 to 1974

Before 1975, the Peace River region of northeastern British Columbia was one of the least known ornithological regions in the province. A series of fur trading forts had been established along the Peace River in the 1790s between what is now the Alberta border and the Peace River canyon west of Hudson's Hope. Although they were among the earliest European settlements in the province, the bird life of the area was essentially ignored. In 1922, however, geologist and naturalist M. Y. Williams recorded observations of birds along the Peace and Mackenzie rivers during his brief travels through the North Peace River region to areas of exploration farther north (Williams 1933a,b).

The first major ornithological investigation of the Peace River Lowlands took place in 1938 when Ian McTaggart-Cowan and Patrick W. Martin visited the area to collect specimens for the British Columbia Provincial Museum. They arrived on 5 May and camped at Swan Lake near Tupper Creek (Figure 3), where they remained until 8 June. The following day they re-located to Charlie Lake. Unfortunately both men became ill and left the North Peace River region and returned to Swan Lake on 19 June. They



Figure 3. Riparian shrubs and deciduous trees dominated a small spit of land jutting into Swan Lake at Tupper Creek, BC, which was the campsite for early ornithological investigations into the Peace River region by Ian McTaggart-Cowan and Patrick W. Martin in 1938. Photo by R. Wayne Campbell, 14 June 1996.

went home to Victoria on 30 June, having spent 57 days investigating the vertebrate fauna of the Peace River area.

Dr. McTaggart-Cowan prepared a manuscript of their fieldwork entitled *The Vertebrate Fauna of the Peace River District of British Columbia* which became the first publication in the British Columbia Provincial Museum's Occasional Paper series (Cowan 1939). Fifty-five pages are devoted to birds; 168 species were recorded. One hundred and thirty two species were prepared for museum collections. McTaggart-Cowan and Martin's results are impressive considering the rudimentary optics of the day, and the lack of roads which restricted their access. It is obvious the investigators were extremely sharp-eyed and energetic, worked long hours, and did not spend much time relaxing in camp. Their spring and early summer work added several new species to the list of birds of British Columbia, including some perpetually hard-to-find species like Nelson's Sharp-tailed Sparrow (Figure 4), Bay-breasted Warbler, and Cape May Warbler.



Figure 4. The first records of Nelson's Sharp-tailed Sparrow for British Columbia were found in the sedge marshes at Swan Lake, BC, in 1938. Photo by R. Wayne Campbell, 14 June 1996.

For over three and a half decades this publication was the only substantive reference to the birds of British Columbia's Peace River region and the entire northeastern part of the province. Its findings were later incorporated into the updated overview, *A Review of the Bird Fauna of British Columbia* by Munro and Cowan (1947).

Although *The Vertebrate Fauna of the Peace River District of British Columbia* remained an important reference, it had its limitations. Cowan and Martin had only enough time to cover a small area of the Peace River Block as it was called. They were in the field for just under two spring months and though they interviewed local pioneers and wisely interpreted the information that local people gave them, they couldn't get a complete picture of the birds that occurred in the other seasons of the Peace. A year round investigation of the avifauna of northeastern British Columbia had yet to be completed.

During this period, the Peace River area remained relatively unexplored, at least in literature, except for brief visits by Rand (1944), Leo Jobin on a bird collecting trip in early June 1954 (Jobin 1955), and Wayne Weber who wrote a note on range extensions for Mourning Warbler and Northern (Baltimore) Oriole (Weber 1976). These notes were important in that they suggested that significant discoveries of range extensions into the Peace region by southern and particularly eastern species were still likely.

In the 1970s, two significant events occurred. Firstly R. Wayne Campbell, curator of vertebrates at the British Columbia Provincial Museum in Victoria, and colleagues began visiting the South and North Peace River regions, collecting information for an update of Munro and Cowan's provincial treatise

on British Columbia birds (see Munro and Cowan 1947, Campbell et al. 1990a, 1990b, 1997, 2001). He also explored significant wetlands as possible Ecological Reserves (see Campbell 1978a, 1979c), inventoried wildlife in existing reserves (Campbell 1978b, 1978d, 1979a, 1979b), and tallied breeding water birds on larger lakes (Campbell 1978c). These excursions carried into the 1980s. Unfortunately many of these reports were internal documents for decision-making and were never made public in published form.

Secondly, British Columbia Hydro funded various natural resource inventories and assessments of the Peace River valley from the Alberta border west to the vicinity of Hudson's Hope before construction of the W. A. C. Bennett Dam began (Figure 5). Further plans to dam the Peace Valley downstream from Hudson's Hope resulted in several environmental surveys of the Valley. The single biggest report was known as The Thurber Report. Unfortunately, wildlife data were not easily accessible to the public, although this report was published by B.C. Hydro in 1976. It contained an annotated list of birds seen during spring surveys along the Peace River. One hundred and twenty bird species were listed by Penner (1976). However, the field work was once again restricted to spring and did not cover areas outside of the Peace River Valley. Thormin (1973) also provided brief notes on birds for the Peace River region of British Columbia.



Figure 5. Environmental inventories and assessments for construction of the W. A. C. Bennett dam west of Hudson's Hope, BC in the mid-1970s provided new information on bird-use of the Peace River. *Photo by R. Wayne Campbell, 15 June 2003.*

Only one other major work on birds was completed for the northeastern portion of the province after Cowan's (1939) paper. In the early 1970s, ornithologist Anthony J. Erskine was systematically investigating birds in the boreal forest for the Canadian Wildlife Service. During his fieldwork, Tony met Gary S. Davidson (Figure 6), a school teacher in Fort Nelson, who was also a keen bird watcher. They wrote "*Birds of the Fort Nelson Lowlands*" (Erskine and Davidson 1974) which today (2010) remains the major source of information on birds in the Fort Nelson area.

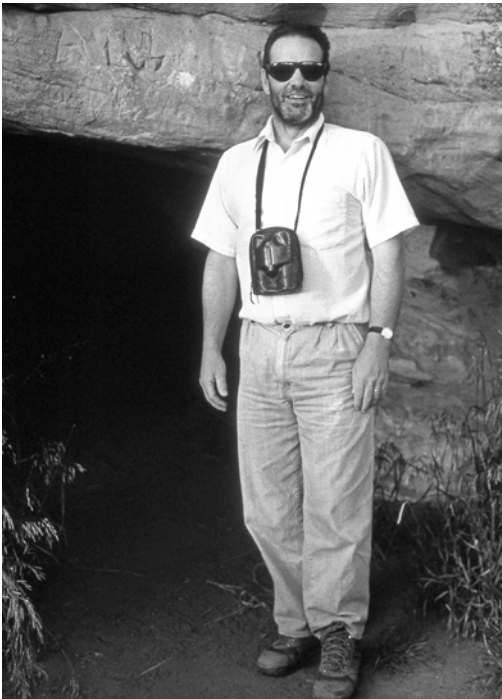


Figure 6. While recognized for his early contributions to the avi-fauna of the Fort Nelson region in the early 1970s, Gary Davidson also helped Chris Siddle collect bird observations in the North Peace River region. *Photo by Chris Siddle, Charlie Lake, BC, July 1992.*

Ornithological Investigations in the North Peace River Region, 1975 to 1999

In August 1975, my wife and I (Figure 7) moved from Vancouver to Fort St. John where I accepted a teaching position at a junior high school. Excited about the possibility of learning and discovering new information for birds in northeastern British Columbia, I first visited Fort St. John in early July 1975. In July 1979, I introduced myself to Wayne Campbell, curator of the Birds and Mammals Division at the British Columbia Provincial Museum. He showed keen interest in my endeavors and soon became an outstanding mentor. His encouragement was contagious and I started spending more time afield and amassing many more records than before. Thus, the bulk of the records for this present study come from fieldwork during the period January 1980 to June 1989.



Figure 7. The author taking time out from bird surveys along a remote logging road in the Peace River region of British Columbia to gather up hundreds of metres of fine hip-chain string left behind by forestry survey crews that may entangle ground-feeding and nesting birds. *Photo by R. Wayne Campbell, 12 June 2006.*

The time I spent in the field increased as the years progressed. For example, in May 1985, I was in the field on 27 of 31 days, not a usual length of time for me. Each trip lasted between one hour and several hours. On most weekends, in season, I also explored areas far from Fort St. John like the Peace River valley west to Hudson's Hope and Road 103 east to Boundary Lake. Also, long spring evenings enabled me to make at least one excursion most weekday evenings during April, May, and June.

During summer holidays, I was able to spend much time bird watching (Figure 8). For example, I accumulated 1,778 records for the 62 days of July and August, 1985. During the winter months sighting totals dropped significantly as only 35 or so species remained in the North Peace River region and winter days were too brief for after-school birding. However, totals peaked in 1986 when I took a fall semester's leave of absence to devote to full time birding.

Between July 1975 and July 1989, I amassed about 70,000 individual sightings. This total, plus records from three intensive seven to 10 day sessions of fieldwork in the early summers of 1992, 1997 and 1998, as well as records from field notes generously loaned to me by Gerry Ansell, Mike Bentley, R. Wayne Campbell, Brent Diakow, Wayne Diakow, Gary S. Davidson (see Figure 6), Mike Force, Mark Gardiner, Bryan Gates, Tony Greenfield, Rick

Howie, Gerry Maisel, Alison Mickel, Tom Mickel, Michael Shepherd, Wayne Weber, and others (see Acknowledgements in Part 2) constituted my North Peace River region database. I contributed many of these records to "*The Birds of British Columbia*" (Campbell et al. 1990a,b, 1997, 2001), but as extensive as that multi-volume work was, it was not written to deal with regional ornithology in detail.

It should be noted that most records are from the 15-year period 1975 to 1989, my residence in the study area, with infrequent supplements of my later observations and those from friends visiting the North Peace River region between 1990 and 1999.

In 1981 and 1982, I prepared a rough draft of a regional ornithology entitled "The status of birds in the Peace River area of British Columbia" which was listed in the second volume of *A Bibliography of British Columbia Ornithology* (Campbell et al. 1988). In 2000, I completely re-wrote the work, dropping the South Peace area which had received excellent coverage from Mark Phinney (1998, 2006) and changed the working manuscript to "The Birds of the North Peace River region, British Columbia." The present paper is an enhanced version of that work.

In late June 1989, after a 14-year residence, my family (now including two daughters) moved from Fort St. John to Vernon.



Figure 8. During summer months, the author was able to more thoroughly explore small wetlands to add significant new information to the distribution and breeding of birds in the North Peace River region. *Photo by R. Wayne Campbell, west of Cecil Lake, BC, 8 June 2005.*

Study Area

Boundaries of the Study Area

The study area is defined as a rectangular region of terrestrial and aquatic habitats essentially on the north side of the Peace River from Taylor (Mile 34 of the Alaska Highway) north to Wonowon, west to Hudson's Hope, and east to the British Columbia/Alberta border. The region was selected purposely because the area south of the Peace River to Dawson Creek and the British Columbia/Alberta border is being studied by Mark Phinney (2006; pers. comm.). The only sites south of the Peace River listed in the following account are just south of Taylor along Peace Island Park Road and Johnstone Road.

Physiography, Climate and Vegetation of the Study Area

The study area occurs mainly on the north side of the Peace River, from Cache Creek east to the British Columbia/Alberta border and north to Blueberry Creek. The Alaska Highway traverses the western portion of the area; the Chetwynd to Charlie Lake Highway (29) traverses the southwestern portion above the Peace River; and many rural access roads, seismic lines and pipelines are common throughout. Fort St. John is the largest centre, but numerous smaller ones, such as Rose Prairie, Pineview, Murdale, Cecil Lake and Goodlow service the agricultural sector; Taylor is an oil refinery centre.

This area lies within the Alberta Plateau, which is a broad rolling upland of rounded hills, level plains, and incised lowlands (Figure 9), lying between the Rocky Mountain foothills of British Columbia and central Alberta and the Canadian Shield of south-central Northwest Territories, northeastern Alberta, and northwestern Saskatchewan; and from the upland north of the Athabasca River to the upland south of the lower Mackenzie River and Great Slave Lake. Within this plateau there is a wide lowland, the Peace River Lowland that extends northeastward in a large S-curve from the Rocky Mountains at Hudson's Hope to the delta of Athabasca Lake (Geological Survey of Canada 1970). The entire

Alberta Plateau was heavily glaciated during past Ice Ages by westward flowing ice sheets from the Hudson Bay and from eastward flowing ice sheets from the cordillera; they coalesced east of the Rocky Mountain foothills, but west of the study area (Klassen 1989). During the melting of the ice sheets years ago, a large ice-dammed lake formed in what is now the Peace River Lowland, filling the lowland with deep clays and silt deposits.



Figure 9. The transition from the dense mixed coniferous forests of the Sub-Boreal Interior Ecoprovince into the more open, rolling, rounded hills, level plains, and incised lowlands of the Boreal Plains Ecoprovince of the North Peace River region is totally different from other habitats in the province. *Photo by R. Wayne Campbell, East of Fort St. John, BC, 15 June 1990.*

The major physiographic features are the result of water and ice erosion of the weak, flat-lying sedimentary bedrock. In the study area the Peace River is deeply entrenched by about 244 m (800 feet), as is the Beatton River downstream of the junction of Stoddart Creek. Numerous streams, such as the Alces River and Flatrock, Tea, Willow, Red and Cache creeks have eroded through the glacial deposits and bedrock to form short, but deeply incised, canyons.

The climate is typically moderate continental; Pacific air masses moving over the Coast and Rocky mountains have lost most of their moisture before reaching the Alberta Plateau. Moisture in the summer months comes mainly from surface heating of the many lakes and streams. The winters are long and cold and outbreaks of Arctic air masses

are frequent as there are no effective barriers to stop their movement south (Marsh 1988).

Data collected at Fort St. John airport indicates the area has warm temperatures in summer and cool to cold temperatures in the winter. (Figure 10). The temperature range is approximately 20°C, while the annual precipitation is around 470 mm.

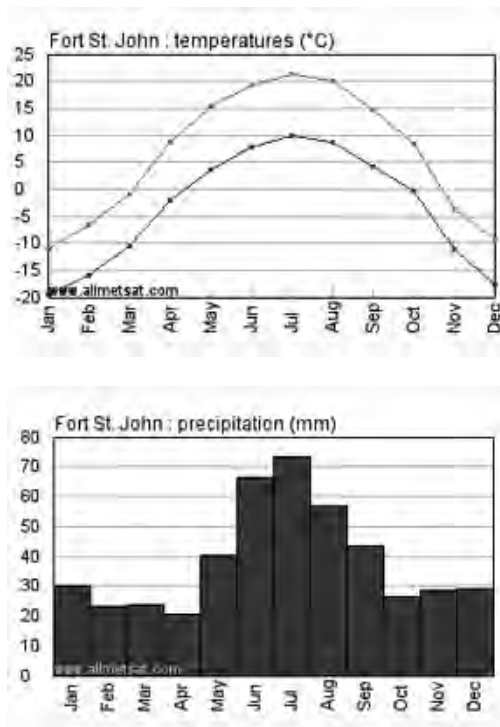


Figure 10. Average monthly temperature (a) and precipitation (b) for Fort St. John, British Columbia. *Courtesy Environment Canada*

Vegetation is typically Boreal Forest; true climax vegetation is largely unknown, however, as wildfires occur regularly in boreal forests. Hypothetically though, climax forests would be dominated by white spruce (*Picea glauca*) and/or black spruce or perhaps subalpine fir (currently rare, probably because of a lack of seeds through repeated fires). Under the biogeoclimatic classification, the study area falls within the Peace Moist Warm Boreal White and Black Spruce subzone variant

(BWBSmw1) (DeLong et al. 1990).

Currently, trembling aspen is the dominant species on non-industrial or non-agricultural lands and it occurs in almost all upland habitats. The native vegetation consists of open grasslands on steep south facing or rocky sites, interspersed with groves of trees and shrubs; thickets of trembling aspen on the upland; white spruce occurs at higher elevations and lodgepole pine (*Pinus contorta* var. *latifolia*) occurs at higher elevations where sandy or gravelly soils are present. Upland riparian areas are willow-dominated with blue-joint grass (*Calamagrostis canadensis*) as an understory (Lea and Lacelle 1989). Much of the study area has been cleared for agricultural use and in many cases native vegetation has been all but eliminated.

Site Descriptions

Not all sites were equally explored within this rectangle as birding trips were usually taken randomly. Core sites visited most often included the Fort St. John town site (including the north and south sewage lagoons), Stoddart Creek forest north and east of Northern Lights College, Beaton Provincial Park, Charlie Lake Provincial Park, the stretch of Highway 29 between Charlie Lake and Hudson's Hope, Hudson's Hope town site, Cecil Lake and surrounding roads, Flat Rock, Goodlow, Clayhurst, Boundary Lake, North Pine, Montney, Rose Prairie, Baldonnel, Peace Island Park Road and the Taylor ski-hill, and Johnstone Road south of Taylor (see Figure 1).

Brief notes on location, vegetation, and significant species follow for most birding sites:

Fort St. John – an urban and suburban centre surrounded by farm fields, a few woodlots, and two small parks, namely Kin Park and Matthews Park. An important riparian forest, locally known as Fish Creek (*i.e.*, Stoddart Creek), flows from the south end of Charlie Lake to the Beaton River across the north edge of town. The Fish Creek Forest (Figure 11) contains a stand of old-growth white spruce (*Picea glauca*) as well as some old-growth trembling aspen (*Populus tremuloides*). Bird feeding stations and gardens with berry-bearing bushes are important bird sites within town, while Fish Creek attracts a

wide diversity of birds because of its mixed forest and old-growth spruce and aspen. Fish Creek is an important site for Pacific-slope Flycatcher, Blue Jay, resident Boreal Chickadee, Pileated Woodpecker, American Three-toed Woodpecker, Black-throated Green Warbler, and occasionally Connecticut Warbler. It is also an excellent site for migrant forest birds from mid-August to early September.



Figure 11. Fish Creek Park is a well maintained demonstration forest that is a major recreation site for hikers, joggers, birdwatchers, dog walkers, and baby strollers living in Fort St. John. The four kilometres of paths have four interconnecting walking trails that vary in length from 500 m to 4,283 m. *Photo by R. Wayne Campbell, 12 June 2007.*

North and south sewage lagoons at Fort St. John – the north sewage lagoons (Zone 10V, E637609, N6238476; Figure 12) are comprised of five large settling ponds with earthen dikes between them. In the first half of the 1980s small thickets of willow (*Salix* spp.) grew on some of the dikes creating habitat for migrant passerines. The cells were periodically drawn down to mud flats. If this happened during shorebird migration, the cell became a magnet for large and small waders. The water levels in the other cells vary and thus attract a diversity of other waterbirds including grebes, dabbling ducks, diving ducks, raptors, and occasionally loons. This was the most reliable site for Hudsonian Godwit, White-rumped Sandpiper, Black-bellied Plover, and Buff-breasted Sandpiper. Passerines regularly seen include Savannah Sparrow, American Pipit, Lapland Longspur, Snow Bunting,

and Northern Shrike. Birds of prey included Merlin, Northern Harrier, and Peregrine Falcon, with casual sightings of Prairie Falcon.

The south sewage lagoons (Zone 10V, E634598, N6232047; Figure 13) also have five cells that are generally kept full of water and are attractive mainly to waterfowl. Only one cell has a muddy shore which attracts small numbers of shorebirds each year. Migrant passerines in spring include Least Flycatcher, Alder Flycatcher, and Blackpoll Warbler in the surrounding trembling aspen forest.



Figure 12. During rainy years the five sewage cells at the north sewage lagoons at Fort St. John are filled with water and attract a wide variety of nesting, moulting, and migrating waterbirds. *Photo by Chris Siddle, 12 June 1983.*



Figure 13. The south sewage lagoons at Fort St. John contain five open-water cells. Some shoreline emergent vegetation attracts breeding marsh birds while many species of dabbling ducks nest in adjacent open fields with grasses. *Photo by R. Wayne Campbell, 10 June 1997.*

North Pine, Montney, and Rose Prairie area – these farmland areas (Figures 14 and 15) are situated on a plateau north of Fort St. John. They are drained by several creeks, including St. John Creek, which has a deep canyon with rock strata exposed on its north side, steep south-facing aspects, and mixed riparian woodland selectively logged during the late 1970s and early 1980s. The agricultural fields are important as foraging areas for Sharp-tailed Grouse, as well as migrant and wintering raptors, including Snowy Owls. Huge flocks of migrant Lapland Longspur and Snow Bunting are frequent in April and May. Northern Shrike is frequent in both spring and autumn. Weedy field edges attract Common Redpoll and Hoary Redpoll most winters. St. John Creek canyon is a good site for migrant forest birds especially in early autumn. These include Black-throated Green Warbler, Ovenbird, White-throated Sparrow, and occasionally migrant Philadelphia Warbler. Wetlands within these areas are scarce but include the ponds along 248A Road where Blue-winged Teal and other marsh ducks can be found along with Swamp Sparrow and small colonies of Common Grackle.



Figure 14. Open farmland habitats, such as those surrounding North Pine, BC, are important foraging areas for many migrating and wintering birds including Rough-legged Hawk, Sharp-tailed Grouse, Snowy Owl, Lapland Longspur, and Snow Bunting. *Photo by R. Wayne Campbell, 27 February 1995.*



Figure 15. In November, farm fields may be blanketed with snow leaving a barren-looking landscape. Some seed-eaters, however, may remain in the North Peace River region. *Photo by R. Wayne Campbell, Montney, BC, 11 November 1996.*

Charlie Lake (south end) – prior to the 1980s the area consisted of a low dike of earth, gravel, and broken concrete along the southern shore of the lake. On either side of Stoddart Creek, which flows out of the lake, was a large swamp of drowned willows, live willows, grassy hummocks, mud bars, and occasional ponds formed by high water. This wetland, one of the biologically richest sites in the North Peace River region, was channeled and at least halved in size by the creation of a new higher dike built in 1982. A Fort St. John service club bulldozed a small marsh into an earthen wading pool and filled



Figure 16. A small cattail wetland, adjacent to a recreational vehicle site, has been preserved at the south end of Charlie Lake, BC, which is used each year by nesting marsh birds and small number of spring and autumn migrants. *Photo by R. Wayne Campbell, 10 June 2007.*

in several hectares for a recreation vehicle parking lot (Figure 16). By the 1990s the wetland habitat had been reduced by approximately 80% at the south end of Charlie Lake. This site is still important for migrant shorebirds, migrant wetland birds including waterfowl (Figure 17), gulls, and terns, as well as sparrows and blackbirds. In autumn Rusty Blackbird can be found in the drowned willows along the creek.



Figure 17. In autumn, prior to freeze-up, thousands of water birds stage on Charlie Lake, BC. *Photo by R. Wayne Campbell, 24 October 1991.*

Beaton Provincial Park – a 320 ha park on the east side of Charlie Lake off 271 Road north of the Alaska Highway. This park contains a picnic beach, a small playing field, a boat launch and a campground. Most of the park is covered by young aspen forest that can be accessed by cross country ski trails. A small old-growth stand of white spruce (*Picea glauca*) is found south of the playing field (Figure 18). The park is an important site for resident woodland birds including Northern Saw-whet Owl and Sharp-shinned Hawk, and for neotropical migrants including Olive-sided Flycatcher, Western Wood-Pewee, Blue-headed Vireo, and Ovenbird. One pair of Cape May Warblers and Black-throated Green Warblers can be found in the spruces some years. The beach is an excellent spot from which to monitor migrant and breeding waterfowl (Figure 19). Rafts of Pacific Loon (uncommon in spring), and White-winged and Surf scoter may be seen in the centre of the lake.



Figure 18. In some years a pair of Cape May Warblers nests in a small stand of old-growth white spruce in Beaton Park, BC. *Photo by R. Wayne Campbell, 23 June 1996.*



Figure 19. The public beach at Beaton Park, BC, is an excellent spot to locate Franklin's Gull in summer, flocks of waterbirds in migration and rarities like Sabine's Gull. *Photo by R. Wayne Campbell, 12 June 2007.*

Charlie Lake Provincial Park – a 64 ha park on the west side of Charlie Lake at the junction of the Alaska Highway and Highway 29. This wooded park contains a boat launch, picnic areas, and a campground. Paths traverse the young aspen forest (Figure 20). Typical aspen grove birds inhabit the park, including Ruffed Grouse, Least Flycatchers, Ovenbirds, Yellow-bellied Sapsuckers, and Rose-breasted Grosbeaks. The southeast corner near the boat launch is a good vantage spot for scoping the southern half of Charlie Lake.



Figure 20. A young trembling aspen forest, with a lush understory of shrubs and tall flowering plants, in Charlie Lake Provincial Park, BC, is home to many breeding North Peace River specialties like Rose-breasted Grosbeak. *Photo by R. Wayne Campbell, 25 June 1998.*

Alaska Highway from the Peace River to about Mile 65 – the Alaska Highway passes riparian forest along the south bank of the Peace River, the town site of Taylor, climbs the breaks with their south-facing slopes (Figure 21) north of Taylor, and crosses agricultural land with hedgerows and small woodlots to Fort St. John. This route is favoured in migration for raptors such as Rough-legged Hawks and other migrants of open ground. Occasional high densities of voles attract Short-eared Owls. Clay-colored and Vesper sparrows are frequent on the breaks, as are Red-eyed Vireos and House Wrens in the brushiest draws. Merlins and Golden Eagles are frequently seen soaring on the updrafts provided by the hilly topography.



Figure 21. The south-facing “breaks” along the Peace River south of Taylor are important migration corridors for many passerines and during migration, open-foraging raptors traverse the flat farmlands on top for prey. *Photo by R. Wayne Campbell, 21 June 2006.*

Charlie Lake to Hudson’s Hope along Highway 29 – this stretch of paved highway following the Peace River (Figure 22) includes Bear Flat, Cache Creek, Watson Slough, Upper Cache Road, mouth of the Halfway River, and Farrell Creek.

Highway 29 runs west from the Alaska Highway, crossing a dense trembling aspen wooded plateau and descending the breaks to Bear Flat, where Clay-colored Sparrows and other passerines breed. Golden Eagle traditionally breeds on the cliff east of Bear Flat. The highway crosses Cache Creek and

climbs a low bench where Watson Slough (Figures 23 and 24) and other beaver ponds and sedge meadows are located. These wetlands are important breeding areas for Wilson's Snipe, Wilson's Phalarope, Blue-winged Teal and other ducks, Bohemian Waxwings, Swamp Sparrows, Common Grackles, and Rusty Blackbirds. Occasionally Le Conte's Sparrows are present in sedge meadows. The highway ascends the plateau west of the Halfway River where Upper Cache Road branches off to the north. Upper Cache Road crosses important ranchland winter raptor areas where Northern Hawk Owls and Northern Goshawks are sometimes seen. The highway crosses the Halfway River where small patches of woodland grow on the east shore. Black-throated Green Warblers are sometimes found in summer in these woods and a pair of Bald Eagles nests along the north bank of the Peace River downstream from the mouth of the Halfway. The highway continues through aspen woodlands and agricultural fields to Hudson Hope. The Peace River is important to breeding Canada Geese, Violet-green Swallows, and Eastern Phoebes as well as migrant waterfowl like rare Surf Scoters.



Figure 22. Typical mixture of farmland, mixed wood copses, and mixed riparian forests along the Peace River about 30 km west of Charlie Lake, BC. *Photo by R. Wayne Campbell, 18 June 1996.*



Figure 23. Watson Slough, primarily a cattail and sedge marsh, is a productive habitat for a host of nesting nonpasserine and passerine wetland and riparian species. *Photo by R. Wayne Campbell, 23 June 1998.*



Figure 24. A small nature trail along the south shore of Watson Slough winds through young mixed woods and patches of wild rose where a variety of foraging and nesting species such as Clay-colored Sparrow and Eastern Kingbird can be found. *Photo by R. Wayne Campbell, 28 June 2002.*

Baldonnel - this region is a farming area southeast of Fort St. John (Figure 25) where migrant raptors like Rough-legged Hawks and Snowy Owls are found.



Figure 25. In migration and during winter, raptors as well as corvids often perch on hay bales to rest and search for food. *Photo by R. Wayne Campbell, 10 November 1996.*

Taylor – the most important urban habitats for birds include the landfill situated at the foot of a south-facing slope northeast of town and a small sewage cell in town. Clay-colored Sparrows are common on the breaks.

Peace Island Park Road at the south end of the Peace River bridge, Taylor – this access road meanders through a mature riparian balsam poplar (*Populus balsamifera*) forest and brushy floodplain thickets of green alder (Figure 26) west of the Alaska Highway along the south bank of the Peace River. Peace Island Park itself contains red-osier dogwood thickets which attract migrant Cedar Waxwings, American Robins, *Catharus* thrushes, vireos, White-throated Sparrows, and Evening Grosbeaks from late August to early September. Merlins and Sharp-shinned Hawks often attend such concentrations of migrants. The old-growth poplars are home to Black-and-white Warblers. From mid-August to Labour Day, Philadelphia Vireos usually can be found among migrant flocks of other warblers and vireos. Barred Owls and occasionally Great Gray Owls also occur here.



Figure 26. Accessible stands of mature balsam poplar with dense understory shrubs in Peace Island Park are regularly visited by birders for North Peace River region specialties like Philadelphia Vireo, Black-and-white and Mourning warblers. *Photo by Chris Siddle, July 1992.*

Johnstone Road (south of Taylor) – on the east side of the Alaska Highway, about 0.5 km (0.3 mi) south of Peace Island Park Road, is a gravel road which crosses trembling aspen woodlands and farm fields until km 5 where it descends a gravelly hill to the riparian forest along the south bank of the Peace River. Canada Warblers have nested at about km 5.25 on the wooded hillside (Figure 27). This is also a good site for soaring Broad-winged Hawks. Mourning and Black-throated Green warblers also occur some years in mixed woodland between kilometres 5 and 6.



Figure 27. Canada Warbler regularly breeds in mixed trembling aspen woodlands with an understory layer of dense shrubs along Johnstone Road south of Taylor, BC. *Photo by R. Wayne Campbell, 11 June 2007.*

Cecil Lake – a large, shallow lake located about 24 km (15 mi) east of Fort St. John (Zone10V, E648620, N6245605). It is situated amid agricultural fields and mixed woodlands dominated by trembling aspen. The lake covers an area of about 275 ha (680 acres) and averages 914 m (999 yards) wide. It averages 1.8 to 2.7 m (6 to 9 feet) deep at the north end, 1.8 m (6 feet) in the middle and 1.4 to 1.7 m (4.5 to 5.5 feet) at the south end. A mixture of trembling aspen, balsam poplar, tall willows, with some water birch (*Betula occidentalis*) surrounds the shores. The littoral area is heavily vegetated with dense stands of reed canary grass (*Phalaris arundinacea*), duckweed, cattail (*Typha latifolia*), bulrushes (*Scirpus* spp.), and sedges (*Carex* spp.; Figure 28). Parts of the lake surface at the south end are matted in spots with dense patches of several varieties of aquatic plants (Campbell 1978c; Figure 29). The latter, in some years, provides a nesting substrate for Eared Grebes as well as foraging and resting areas for migrant shorebirds and water birds.



Figure 28. Nearshore and shoreline vegetation around Cecil Lake, BC, consists of a varying widths of emergent vegetation that includes reed canary grass, cattail, bulrushes, and sedges, all used by nesting marsh birds. Photo by R. Wayne Campbell, 22 June 2004.

In late spring and summer the lake is very important for nesting water birds including a large colony of Eared Grebes, as well as small colonies of Red-winged and Yellow-headed blackbirds, Common Grackles, and Black Terns. Both Tundra and Trumpeter Swans occasionally summer on the lake. It is also a major staging area for migrant

waterfowl. Large numbers of shorebirds, especially Lesser Yellowlegs, also stop at the lake during migration. The fields around the lake are important sites for Sandhill Cranes and migrant raptors.



Figure 29. Dense mats of aquatic plants appear on Cecil Lake when plant growth and water levels are suitable, but exposure varies greatly between years. Besides providing support for colonial-nesting Eared Grebes, the mats are significant foraging and resting areas for a host of migrant and summering waterfowl (especially American Wigeon and American Coot) and shorebirds (especially Lesser Yellowlegs), as well as nesting blackbirds. Photo by R. Wayne Campbell, 22 June 2004.

Clayhurst and Flatrock – these locations, southwest of Boundary Lake, are important sites for migrant raptors.

Boundary Lake – a very shallow, marshy lake (Figure 30) straddling the British Columbia- Alberta border (Zone 10V, E684827, N6248324; see Figure 1). Patches of black spruce (*Picea mariana*) muskeg are common and attract Palm Warblers. Willow and alder edges are sometimes frequented by Blackpoll

Warblers. Wet willow thickets attract a small population of Veery and the more widespread Swamp Sparrow. Sedge meadows have been breeding sites for Nelson's Sharp-tailed Sparrows and Le Conte's Sparrows (Figure 31). Yellow Rail may occur very rarely. The shallows and grassy hummocks of the lake are excellent habitat for migrant shorebirds. Deeper sections attract nesting Eared Grebes some years, a pair of nesting Trumpeter Swans, and a wide diversity of breeding waterfowl including Lesser



Figure 30. Boundary Lake, with its extensive beds of emergent vegetation, is a major breeding site in British Columbia for marsh birds, a safe molting area for waterfowl, and a staging ground for water birds in migration. *Photo by R. Wayne Campbell, 24 June 1996.*

Scaup, Northern Shoveler, and Canvasback. Black Tern and Yellow-headed Blackbird can occur in small colonies.

German Lake – a shallow lake surrounded by black spruce muskeg (Figure 32) east of Cecil Lake. This is an important site for migrant and breeding waterfowl. Other birds include Solitary Sandpipers (on territory), foraging Common Nighthawks, and Bohemian Waxwings in breeding season, and nesting Palm Warblers.



Figure 32. Black spruce muskeg bogs, scattered throughout the North Peace River region, are home to nesting Palm Warblers, a locally distributed species. *Photo by R. Wayne Campbell, German Lake, BC, 24 June 1996.*



Figure 31. Extensive sedge meadows around Boundary Lake attract rare local birds including Yellow Rails and Nelson's Sharp-tailed and Le Conte's sparrows. *Photo by R. Wayne Campbell, 24 June 1996.*

Species Accounts

The species accounts that follow are not intended to be up-to-date accounts of the nonpasserines and passerines of the North Peace River region. Rather, this is a historical document that summarizes for the first time the status of birds in the region primarily from August, 1975 to June, 1989. Changes in the avi-fauna during the 21 years following will be summarized in a separate publication at a later date.

Descriptions for a species' status and seasonality, that is its frequency and relative abundance during the four seasons, follow Campbell et al. (1990a) with minor modifications. The four categories, separated into "Regular Occurrence", "Irregular Occurrence", "Status", and "Seasons" are:

Regular Occurrence (reported annually)

<i>Very abundant</i>	• over 1,000 individuals per day per locality (often in large flocks).
<i>Abundant</i>	• 200 to 1,000 individuals per day per locality.
<i>Very common</i>	• 50 to 200 individuals per day per locality.
<i>Common</i>	• 20 to 50 individuals per day per locality.
<i>Fairly common</i>	• 7 to 20 individuals per day per locality.
<i>Uncommon</i>	• 1 to 6 individuals per day per locality.
<i>Rare</i>	• 1 to 6 individuals per season.

Irregular Occurrence (not reported annually)

<i>Very rare</i>	• over 6 records, but of very infrequent occurrence.
<i>Casual</i>	• 2 to 6 records all-time.
<i>Accidental</i>	• only 1 record.

Status (frequency)

<i>Resident</i>	• a species that remains throughout the year in the area under reference.
<i>Migrant</i>	• a species that migrates to the area under reference and winters or breeds. Does not remain in the area under reference throughout the year. Does not include a species that wanders in the nonbreeding season.
<i>Transient</i>	• a species that appears on migration in the area under reference but neither breeds nor overwinters there.
<i>Visitor</i>	• a species that is present in the area under reference only at certain times of the year. Breeding or wintering status for a migrant.
<i>Vagrant</i>	• a wanderer outside the normal migration range of the species.

Seasons

<i>Spring</i>	• March to May.
<i>Summer</i>	• June to August.
<i>Autumn</i>	• September to November.
<i>Winter</i>	• December to February.

Species taxonomy and sequence follows the American Ornithologists' Union "Check-list of North American birds" (Banks et al. 1998) and the nine supplements through 2009 (*e.g.*, Banks et al. 2000, 2002, 2003, 2004, 2005, 2006, 2007, 2008, Chesser et al. 2009).

Each species account has purposely been organized into "compartments" for easy and quick extraction of specific information, not for ease or flow of reading. The paper is intended to be a functional reference document. The full format for a species that breeds and has "Comments" includes six major headings and up to eight sub-headings. Briefly these include:

Status: a leading summary statement assigned for each species follows Campbell et al. (1990a) with a brief summary of historical information from literature prior to 1975.

Habitat: the principal habitat(s) frequented by a species during its occurrence in the study area. When different, habitats are included for spring and/or autumn migration, breeding season, and resident species.

Distribution: major general and specific locations, usually during spring and/or autumn migration and the breeding season, are highlighted within the study area.

Occurrence: includes detailed summaries of arrival and departure dates, as well as peak periods, for migrants as well as specific dates for rare species.

Breeding: identifies the breeding range within the study area and details of phenology for nests, eggs, and young. When sample sizes are large specific summaries show the range of eggs (E) and young (Y).

Comments: a wide variety of topics is included that complements or clarifies information in the individual species accounts.

All observations were made by the author unless they are credited to another observer in the text.

GEESE, SWANS AND DUCKS

Greater White-fronted Goose

Anser albifrons

Status: *Uncommon spring and autumn migrant.*

The species was unrecorded by Williams (1933b) and Cowan (1939), although the latter author visited the area only in summer when the species was not likely to be there. Penner (1976) listed it as a spring migrant along the Peace River valley, giving three spring records for 1975.

Habitat: Migration: Frequents wetlands including marshes, sewage lagoons, ponds and lakes as well as stubble fields.

Distribution: Occurred from the Halfway River east to Boundary Lake.

Occurrence: Spring: Eight spring arrival dates (1978, 1980, 1983, 1984, and 1986 to 1989) ranged from 13 to 30 April. The largest single site spring count was 124 birds seen over the Peace River on 29 April 1975 (Penner 1976). The specific location was not given. The largest single site count for this study was 16 birds west of Cecil Lake on 13 April 1984. The latest spring sighting was 30 April 1989, with two birds at the north sewage lagoons in Fort St. John. Penner (1976) gave a later record of 47 birds on 4 May 1975 (site not given). Summer: Six earliest southbound arrival dates (1978 and 1984 to 1988) ranged from 17 August to 29 August. Autumn: Most plentiful early in September. The single highest count was 81 in a stubble field near Fort St. John on 7 September 1985. After mid-September, the species was recorded only as a lingering straggler. One stayed until 8 November at Charlie Lake in 1987.

Snow Goose

Chen caerulescens

Status: *Casual spring migrant and accidental in summer.*

Cowan (1939) recorded a flock of 25 at Tupper Creek on 7 May 1938. Not mentioned by Williams (1933b) or Penner (1976).

Habitat: Migration: Fields, marshes, ponds, lakes, and sewage lagoons.

Distribution: Recorded around Fort St. John, Charlie Lake, North Pine and Cecil Lake.

Occurrence: Spring: Six sightings. The earliest sighting was an immature with 98 Canada Geese at 250A and 259 roads in the North Pine area 16 April 1986. The largest number was 11 at Cecil Lake on 6 May 1984. The latest spring record was of a sub-adult at the north sewage lagoons in Fort St. John on 30 May 1988. Summer: One record. An adult appeared at the north sewage lagoons 24 to 26 June 1984.

Brant

Branta bernicla

Status: *Accidental.*

Not mentioned by Williams (1933b), Cowan (1939) or Penner (1976).

Occurrence: One (*B. b. nigricans*) was present at the north sewage lagoons in Fort St. John from 16 to 22 September 1986, the only record for the Peace River area.

Canada Goose

Branta canadensis

Status: *Common spring and autumn migrant and uncommon summer visitor; breeds.*

Williams (1933b) reported that according to local residents, the Canada Goose nested along the larger streams within the Peace River Block. He added the historical note that the explorer Alexander Mackenzie observed the species nesting atop islands in the Peace River Canyon during his famous explorations of 1793. Penner (1976) called it a common migrant and breeder in the Peace River and tributary valleys.

Habitat: Migration: River gravel bars and shores (Figure 33), wet fields, marshes, ponds, sewage lagoons, and lakes. Breeding: Ponds, marshes, shallow lakes, sewage lagoons, river shores and islets including rock stacks.

Distribution: Migration: Flocks congregated along the Peace River early in the spring and late in the autumn when other water bodies were frozen. Important staging areas included the mouth of the Halfway River (Figure 33) and the Peace River south of Baldonnel to the confluence of the Beaton and Peace rivers. The earliest spring flocks occurred in upland habitats in the North Pine area, as well as on shallow lakes such as Cecil and Boundary. Breeding: Nests along the Peace River and around most marshes and lakes east to the Alberta border.

Occurrence: Spring: Eight earliest arrival dates (1981 to 1988) ranged from 18 March to 27 March. According to residents of Hudson's Hope, Canada Geese have arrived as early as about 10 March. Typically the first arrivals were small flocks of five to 15 birds scattered along the Peace River from Farrell Creek to Taylor. Numbers peaked on the upland habitats between 1 April and about 15 April, with flocks of 100 to 300 in wetlands around North Pine. Thereafter numbers dwindled rapidly except at Cecil Lake where 100 or more appeared as late as the last week of April. Summer: Broods encountered until 28 July. Occasionally flocks of 25 to 75 adult birds, possibly non-breeders, have been seen in June around Cecil Lake and Fort St. John. Autumn: Numbers increased through September and October, sometimes peaking in late October and in early November. A notable assembly, the largest for the North Peace River region, was of 7,000 birds along the Peace River south of Baldonnel on 6-7 November 1982 (Fred Harper pers. comm.). Seven final autumn records (1982 to 1988) ranged from 23 October to 11 November. Blood (1979) reported Canada Geese along the Peace River as late as 24 November in 1976.

Breeding: Sixteen broods were encountered from 22 May to 28 July. The first broods appeared in the second half of May. Small downy young were

recorded from 22 May to 17 June. The size of broods ranged from two to 13 young (2Y-1, 3Y-3, 4Y-2, 5Y-3, 7Y-2, 9Y-1, and 13Y-1). An additional record of four adults with 13 young could not be separated into family groups.



Figure 33. During spring break up, the mouth and shores of the Halfway River provide resting and staging areas for migrating water birds including Canada Goose. *Photo by Chris Siddle, April 1978.*

Trumpeter Swan *Cygnus buccinator*

Status: *Uncommon and local spring and autumn migrant and rare summer visitor; breeds.*

Not recorded by Williams (1933b) or Cowan (1939). Penner (1976) called it a summer breeder on the plateau between the Peace and Moberly rivers.

Habitat: Migration: Lakes, ponds, and wet fields. Breeding: Large and small lakes in forested country.

Distribution: Migration: Occurred from Fort St. John east. Encountered at North Pine, the Fort St. John sewage lagoons, Cecil Lake and Boundary Lake. Breeding: Restricted to Boundary Lake.

Occurrence: Spring: seven arrival records (1983 to 1988) ranged from 4 April to 10 May, with five dates between 4 and 24 April. Most spring sightings were of two to four birds. The two largest single-site counts were 50 at the north sewage lagoons in Fort St. John on 18 May 1987 and eight at Cecil Lake on 24 April 1986. Summer: Pairs of Trumpeter Swans

began nesting and moulting (Figure 34) within the North Peace River region sometime in the 1990s. The first pair (with five cygnets) that I found was at Boundary Lake 20 July 1992. Other summer records: two at the Fort St. John sewage lagoons on 6 June 1986 (Gerry Ansell pers. comm.), three at Cecil Lake on 23 June 1986, two along the Beaton River north of Mile 73 on 10 August 1987 (Tony Greenfield pers. comm.), and one at Boundary Lake on 26 August 1987. Autumn: Three were seen at the Fort St. John north sewage lagoons on 11 September 1983. One was observed at Boundary Lake 5 September 1987. Three departure records (1983, 1987, and 1988) ranged from 5 to 19 September.

Breeding: Began to breed within the North Peace River region about 1992. There are three breeding records from Boundary Lake: a pair with five cygnets 20 July 1992, a pair with four cygnets on 4 July 1998, and a pair with four cygnets on 15 July 1999 (Don Cecile pers. comm.).



Figure 34. Since the early 1990s, a pair of Trumpeter Swan regularly moulted and nested on hummocks of vegetation in sedge meadows and cattail stands in Cecil Lake, BC. *Photo by R. Wayne Campbell, 22 June 2004.*

Tundra Swan *Cygnus columbianus*

Status: *Common spring and autumn migrant. Very rare summer visitor.*

Tundra Swan (Figure 35) was not reported by Williams (1933b). Cowan (1939) saw a pair on Swan Lake, outside the study area; he stated that local residents reported that numbers had passed through earlier than his arrival in the area. Penner (1976a) called the Tundra Swan a common migrant along the Peace River and gave weekly counts for westbound migration for May 1975.

Habitat: Migration: Rests and feeds on most lakes. Penner (1976) reports that it rested on gravel bars along the Peace River. Blood (1979) states “early migrating swans make considerable use of the [Peace] river in spring when surrounding lakes are still frozen.” On the uplands, swans occurred around melt-water ponds in farmland, and on ponds, sewage lagoons, and lakes.

Distribution: Migration: Appeared along the Peace River valley, probably the full length of the North Peace River region. The species also occurred in the open agricultural areas around Fort St. John and the wetlands east to the Alberta border.

Occurrence: Spring: Eight arrival dates (1977 and 1982 to 1988) ranged from 3 April to 21 April. The late date of 21 April reflected the late spring of 1982, which delayed the spring arrival of many bird species in the North Peace River region. The peak of spring migration occurred from 20 April to 7 May. Penner (1976) gives estimated weekly totals of Tundra Swans passing observation posts in May 1975. Seven thousand five hundred and fifty three passed during the week ending 3 May. One hundred and thirty one passed in the week ending 10 May and 398 passed during the week ending 17 May. Seven latest spring records (1982 to 1989) ranged from 29 April to 12 May.

Summer: There were several records of swans in late May and June. The highest number was six during June 1987 and June 1988 at Cecil Lake and at the north sewage lagoons in Fort St. John. Autumn: Six

earliest arrival dates (1982-1986, 1988) ranged from 1 October to 16 October. The highest number was 300 at Cecil Lake on 14 October 1984 (Gerry Paille pers. comm.). The latest fall records (1982-1986, 1988) ranged from 19 October to 26 October.



Figure 35. The North Peace River region is a migration corridor for Tundra Swan in British Columbia where it is a common spring and autumn migrant. *Photo by R. Wayne Campbell.*

Wood Duck
Aix sponsa

Status: *Accidental.*

Not mentioned by Williams (1933b), Cowan (1939), and Penner (1976).

Occurrence: A drake was at the north sewage lagoons in Fort St. John on 14 and 25 Jun 1984.

Comment: Phinney (1998) recorded a pair in the South Peace region on 12 May 1992. Over the past decade or so this species has been expanding its range northwards from southern British Columbia (Campbell 2009).

Gadwall

Anas strepera

Status: *Common spring and autumn migrant and summer visitor; breeds.*

Not recorded until Penner (1976) listed it as a rare migrant with a single observation from the Peace River valley.

Habitat: Migration: Shallow lakes, marshes, sewage lagoons, and ponds. Occasionally the species was seen on deeper lakes. Breeding: Marshes, shallow lakes and ponds, and sewage lagoons.

Distribution: Migration: Found from Cache Creek eastwards to Boundary Lake. Breeding: Nests or broods were found on the north and south sewage lagoons in Fort St. John, and in the vicinity of North Pine, Beaton River, and Boundary Lake.

Occurrence: Spring: Eight arrival dates (1981 to 1988) ranged from 16 April to 5 May, with four dates between 16 April and 26 April. Earliest migrants were usually found at shallow wetlands such as Cecil Lake or the Fort St. John sewage lagoons. Most spring flocks contained fewer than 50 birds; the largest encountered was of 171 birds at the north sewage lagoons on 30 May 1988. Summer: Eggs (Figure 36) were laid in June. Broods appeared from 28 June to 25 August. No large summer assemblies of moulting males were found. Autumn: Eight final autumn records (1981 to 1988) ranged from 26 August (unusually early) to 24 October. Most Gadwalls departed the North Peace River region by late September.

Breeding: Two nests were located on the ground in grasses along the edge of a gas well roadway extending into Boundary Lake. The 24 June 1984 nest contained nine eggs while the 7 June 1986 nest contained six eggs with nine eggs on 21 June. This nest was situated beside a small wild rose shrub. Both nests were depressions lined with fine grasses and down. A photo of the 1984 nest is shown as Figure 280 in Campbell et al. (1990a).

Seventy-two broods were recorded, ranging from 28 June to 25 August. Broods classified as Class

1A (one to seven days old) were found between 28 June and 20 July. Sizes for all broods ranged from one to 18 young (1Y-2, 2Y-2, 3Y-3, 4Y-6, 6Y-10, 7Y-8, 8Y-9, 9Y-18, 10Y-5, 12Y-1, 16Y-1, and 18Y-1), with 61% having six to nine young.

Family groups with 16 to 18 young were likely the result of broods mixing.



Figure 36. Over the past several decades, Gadwall has expanded its breeding range into northeastern British Columbia and has become a common nesting species near wetlands in the North Peace River region. *Photo by R. Wayne Campbell, Boundary Lake, BC, 21 June 2004.*

Eurasian Wigeon *Anas penelope*

Status: *Rare spring migrant.*

Not previously listed for the North Peace River region.

Habitat: Migration: Grassy fields next to ponds and wetlands, sewage lagoons, and lakes.

Distribution: Recorded at Charlie Lake, south sewage lagoons in Fort St. John, North Pine, and Cecil Lake.

Occurrence: Spring: Fourteen records spanned the period from 3 April to 21 May, with 10 records between 16 and 30 April. All were of single males.

American Wigeon *Anas americana*

Status: *Common migrant and summer resident; breeds.*

Williams (1933b) did not record this species (Figure 37). Cowan (1939) termed it abundant around Swan Lake and South Peace, and uncommon at Charlie Lake. Penner (1976) called it a common migrant and breeder along the Peace River valley.

Habitat: Migration: Most wetlands including deep and shallow lakes, rivers, ponds, and sewage lagoons. Breeding: Ponds and lakes in wooded and partially open situations, including shallow lakes, deeper water lakes (e.g., Charlie Lake), rivers, ponds, and sewage lagoons.

Distribution: Migration: Widespread. It has been recorded from Lynx Creek east to Boundary Lake and north to Buick Creek. Breeding: Also widespread. Western-most breeding record in the study area was from Farrell Creek community pasture northeast at Hudson's Hope. The species has nested around Charlie Lake. Most frequently nested around sewage lagoons in Fort St. John, and near wetlands in the vicinity of North Pine, Cecil Lake, German Lake, and Boundary Lake.

Occurrence: Spring: Seven arrival records (1982 to 1988) ranged from 4 April to 16 April. Earliest arrivals were usually seen at wetlands among larger numbers of Mallards and Northern Pintails. Numbers grew quickly through April to a peak usually in late April or the first ten days of May. The largest single site count was from Cecil Lake, where 5,000 birds were gathered on 30 April 1989. Numbers dwindled quickly after early May. Summer: Widespread in suitable habitat. Autumn: Numbers peaked in October. The largest single site count was 1,000 at Boundary Lake 5 October 1986. Seven final autumn records (1982 to 1988) ranged from 21 October to 11 November.

Breeding: The earliest clutch (eight eggs) was found hidden in an alder edge of mixed woods 10 m from the shore of Charlie Lake at Beatton Provincial Park

on 20 June. Broods appeared as early as 15 June and continued through July into August. Flocks began to appear in late August. One hundred and seventy nine broods were encountered between 15 June and 12 August. Brood size ranged from one to 17 young (1Y-3, 2Y-3, 3Y-11, 4Y-23, 5Y-22, 6Y-34, 7Y-27, 8Y-22, 9Y-18, 10Y-9, 11Y-1, 12Y-1, 13Y-2, 14Y-1, 15Y-1, and 17Y-1), with 59% having five to eight young. Groups of 14 to 19 young were likely the result of brood mixing. Fifty-seven broods, aged one to seven days old, occurred between 15 June and 20 July, with 68% from 25 June to 10 July.



Figure 37. American Wigeon is a commonly encountered species in the North Peace River region especially in wetlands where surface aquatic plants are abundant for foraging, as at Cecil Lake. *Photo by R. Wayne Campbell.*

American Black Duck
Anas rubripes

Status: *Casual vagrant.*

Not previously recorded in the North Peace River region.

Occurrence: A total of four records. A pair was seen at 251 Road Pond southwest of Cecil Lake on 4 May 1982 and a male was present at Cecil Lake on 4 May 1986. A moulting bird, likely a male, was at the north sewage lagoons in Fort St. John from 15 to 17 July 1986 (Campbell and Petrar 1986) and a male was at the same site 13 August 1988. A hybrid male, possibly a cross between a Mallard and an American Black Duck, was seen at the north sewage lagoons in Fort St. John on 19 April 1987 and at the south lagoons on 17 May 1987.

Mallard

Anas platyrhynchos

Status: *Common to occasionally very common spring and autumn migrant, fairly common summer resident, and occasional local winter resident; breeds.*

Williams (1933b) saw 15 Mallards (Figure 39) on the Peace River at the Alberta border in May 1922. Cowan (1939) reported the Mallard as the most plentiful duck in the South Peace region. He also recorded five broods at Charlie Lake. Penner (1976) called it a common migrant and summer resident along the Peace River valley and its tributaries.



Figure 39. In some years, Mallard may be present year-round but it is primarily a very common spring and autumn migrant and widespread breeder. *Photo by R. Wayne Campbell.*

Habitat: Migration: Occurs on virtually all water bodies. Breeding: Nested near most water bodies including tiny dugouts, ponds, marshes (Figure 40), shallow lakes, sewage lagoons, deeper lakes, and rivers.



Figure 40. Thousands of small wetlands scattered throughout the North Peace river region are used each year as breeding sites for Mallard. *Photo by R. Wayne Campbell, north of Fort St. John, BC, 12 June 2002.*

Distribution: Migration: Widespread; occurred throughout the North Peace River region. Breeding: Widespread; nests and/or broods were recorded from Watson Slough east to the Alberta border.

Occurrence: Spring: Nine arrival records (1976, 1977, and 1982 to 1988) ranged from 14 February to 9 April. Numbers peaked from mid-April through early May. The three largest single site counts were 2,000 at Cecil Lake on 4 May 1981, 1,000 at North Pine on 15 April 1984, and 1,000 at Cecil Lake on 27 April 1988. Summer: Most broods were encountered between 10 June and 10 July. Assemblies of post-breeding birds begin to appear in late August. Autumn: There was no clear-cut peak in autumn numbers. Nine final autumn records for upland areas (1979, 1980, and 1982 to 1988) ranged from 21 October to 18 November with six dates from 4 November to 11 November. Winter: Small flocks lingered, or overwintered, along the Peace River. The first such flock that I heard of was rumoured to be on the Peace near the mouth of Lynx Creek during the winter of 1976 to 1977. In late December 1984, a reliable observer (Gerry Johnston pers. comm.) reported 75 to 80 Mallards at this site. During the winter of 1986 to 1987 Mallards in flocks of 10 to 250 were reported from the Peace River near Two Rivers (Herb Bennett pers. comm.). In December 1988, three were spotted near the Fort St. John north sewage lagoons (Gerry Paille pers. comm.).

Breeding: Fourteen nests were found between 6 May and 19 June. Eggs per nest ranged from three to 10 (3E-1, 4E-1, 6E-4, 7E-1, 8E-4, 9E-2, 10E-1). Nest locations varied and included a small islet in a pond, the edge of a lane in brushy second growth beside a lake, wooded lakeshore on an incline 3 m above the water, and the edge of a roadside ditch next to a shallow lake. One hundred and forty one broods were encountered between 25 May and 26 August, with 64.5% found between 10 June and 10 July. Brood size ranged from one to 18 young (1Y-6, 2Y-9, Y-12, 4Y-12, 5Y-22, 6Y-10, 7Y-21, 8Y-15, 9Y-12, 10Y-11, 11Y-4, 12Y-1, 13Y-1, 14Y-1, 16Y-2, and 18Y-2), with 57% having five to nine young. An analysis of broods judged to be one to seven days old revealed 28 broods dating from 25 May to 10 July,

with 82% between 31 May and 20 June. Brood size for this first age class (Class 1A) ranged from one to 14 young, with 60.7% having five to eight young.

Comments: Cowan (1939) commented that many Mallard nests were lost in the spring of 1938 due to Peace residents burning fields and weedy edges. In the 1970s, 1980s, and 1990s this annual practice remained common and widespread, and very likely impacted many Mallard nests.

Blue-winged Teal

Anas discors

Status: *Common spring and autumn migrant and summer visitor; breeds.*

Not recorded by Williams (1933b). Cowan (1939) found several pairs of Blue-winged Teal (Figure 41) nesting around Swan Lake, South Peace, and he also saw it at Charlie Lake. Penner (1976) called it an uncommon migrant and breeder in the Peace River valley.

Habitat: Migration and Breeding: Shallow lakes, ponds, and sewage lagoons.

Distribution: Migration: Occurred throughout the southern parts of the North Peace River region. Breeding: Nests and /or broods were recorded at Bear Flat, Charlie Lake (marsh at south end), Fort St. John sewage lagoons, 248A Road marshes near North Pine, and at Boundary Lake.

Occurrence: Spring: Eight arrival dates (1981 to 1988) ranged from 23 to 30 April, making this a fairly late-arriving waterfowl. Flocks as large as 50 to 100 were occasionally encountered in spring. The largest single site assembly was 100 at Cecil Lake on 4 May 1981. Flocks of moulting males were present in late June at some wetlands. Two such aggregations were 60 males at the 248A Road marshes on 21 June 1984 and 25 males at Cecil Lake on 30 June 1988. Summer: Nests with eggs were found in June. Broods were found in the first half of July. Autumn: There was no obvious peak in late summer or autumn numbers. Final sightings (1981 to 1988) ranged from 30 August to 20 October.

Breeding: Six nests were located. All were along gas-well roads that crossed a marsh to end at a gas pump-jack in Boundary Lake. The nests were hidden in roadside grasses. Clutch size for each nest ranged from six to 11 eggs (E-1, 7E-1, 9E-1, 10E-2, 11E-1). Dates for these clutches ranged from 6 June to 24 June. Twelve broods were found, with dates ranging from 1 July to 16 July. Brood size ranged from three to 10 young (3Y-3, 5Y-4, 6Y-2, 8Y-1, 9Y-1, and 10Y-1), the latter group is probably a mixed brood.



Figure 41. Blue-winged Teal, a common species in the North Peace River region, breeds widely and significant numbers of males moult in selected wetlands. *Photo by R. Wayne Campbell.*

Cinnamon Teal

Anas cyanoptera

Status: *Rare to uncommon spring migrant and summer resident; may breed.*

Previously unrecorded for the North Peace River region.

Habitat: Migration: Marshes, ponds, beaver ponds, and shallow lakes. Breeding: The only record, which is merely probable, comes from a sewage lagoon.

Distribution: Migration: Watson Slough in the west to Boundary Lake in the east. The species was not found farther north than North Pine and Cecil Lake.

Breeding: One probable record, from the north sewage lagoons in Fort St. John.

Occurrence: Spring and Summer: Nine earliest spring records (1980 to 1989) ranged from 13 April to 11 May. From 1980 to 1987 all first arrivals occurred between 1 and 11 May. In 1988 and 1989 birds began to appear in April with six sightings in these two years. Usually only one to three birds are encountered at a single site. The largest number was three drakes and a pair at the north sewage lagoons in Fort St. John on 18 June 1987. Sightings dwindled past early July. Autumn: No records.

Breeding: One possible record. On 26 June 1988 a long-billed female teal was accompanied by four ducklings aged about eight to 13 days old. However, the female also appeared to have a rather dark eye line more suggestive of a Blue-winged Teal.

Northern Shoveler

Anas clypeata

Status: *Common to occasionally very common spring and autumn migrant and common summer resident; breeds.*

Not recorded by Williams (1933b). Cowan (1939) found 12 pairs of Northern Shoveler (Figure 42) nesting at Swan Lake, South Peace, in May 1938. Penner (1976) labeled it an uncommon migrant and summer resident in the Peace River valley.



Figure 42. The numerous shallow wetlands rich with food and nesting sites attract a significant portion of the provincial population of Northern Shoveler. *Photo by R. Wayne Campbell.*

Habitat: Migration: Occurs on all water bodies, especially shallow lakes and ponds. Breeding: Shallow lakes and ponds, especially sewage lagoons.

Distribution: Migration: Most frequent in the southeastern quarter of the North Peace River region. Distribution poorly known for the Hudson's Hope area. Breeding: Nests and/or broods were found at Watson Slough, the North Pine marshes, the sewage lagoons in Fort St. John, various ponds between Fort St. John and Cecil Lake, Cecil Lake, and Boundary Lake.

Occurrence: Spring: Nine arrival dates (1981 to 1989) ranged from 13 to 25 April. Early arrivals usually occurred in very small numbers (one to nine ducks; often just a pair), but numbers built within days. Peaks encountered between 30 April and 11 May, with flock size often between 25 and 100 birds. Exceptionally large numbers were found on three occasions: 500 at Charlie Lake on 7 May 1988, 1,000 at Cecil Lake on 4 May 1981, and 4,000 at Cecil Lake on 30 April 1989. Summer: After mid-May, flocks up to a few hundred males each, possibly post-breeding, could be found most years. For example, on 30 June 1998, 73 molting drakes were counted on the southern half of Cecil Lake. Broods were found from mid-June to mid-August. Ducks and their grown broods augmented flocks of

summering drakes in July and August. A flock of 500 at the south sewage lagoons in Fort St. John's on 24 August 1987 was unusually large. Autumn: Flocks commonly ranged in numbers from 20 to 100 birds. Seven final autumn records (1982 to 1988) ranged from 13 to 31 October.

Breeding: Nests were down-lined depressions on the ground hidden in grassy margins adjacent to sewage lagoons, beaver ponds, and shallow lakes. At Boundary Lake, nests were found in the grass on berms around gas wells. Fifteen nests were located from 25 May to 16 June. Number of eggs in the nest ranged from two to 11 eggs, with 53% having nine to 11 eggs. The earliest full clutch was found on 25 May. Dates for 100 broods ranged from 17 June to 17 August. Brood size ranged from one to 20 young (1Y-1, 2Y-5, 3Y-9, 4Y-5, 5Y-6, 6Y-11, 7Y-14, 8Y-17, 9Y-15, 10Y-11, 11Y-1, 12Y-1, 13Y-1, 16Y-1, 17Y-1, and 20Y-1), with 57% having seven to 10 young. Broods larger than 10 may have been amalgamated since females are known to adopt stray ducklings. Of the earliest age class for ducklings (*e.g.*, one to seven days old), 28 such broods were encountered 17 June to 17 July.

Northern Pintail

Anas acuta

Status: *Very common spring and autumn migrant and common summer visitor; breeds.*

Not recorded by Williams (1933b). Cowan (1939) considered Northern Pintail (Figure 43) numerous at Swan Lake, South Peace, as a migrant. Penner (1976) called it a common migrant in the Peace River valley.

Habitat: Migration: In early spring occurs in flooded fields and run-off ponds, as well as marshes and shallow lakes. A few were observed resting on deeper lakes such as Charlie Lake. Breeding: Shallow lakes and marshes with surrounding grassy areas. It is fairly selective in choice of nesting habitat.

Distribution: Migration: Most frequently seen around marshes and open farmlands of the southeast part of the North Peace River region. There are a few records in spring for the western half of the region. Breeding: Nests were found at the sewage lagoons in Fort St. John and the south end of Charlie Lake. Broods have been seen at the sewage lagoons, a pond at the British Columbia Rail depot (Fort St. John), the North Pine marshes, Watson Slough, Cecil Lake, and German Lake.

Occurrence: Spring: An early arriving species. Eight arrival dates ranged from 1 to 22 April (1981 to 1988) with 1 to 9 April the usual arrival period in warm springs of the 1980s. The peak of spring movement was variable, possibly depending upon displacement of ducks from the prairie provinces during drought. Peaks of 400 birds at a single site occurred in 1982 and 1983, but a high of 10,000 pintail at Cecil Lake occurred in the spring of 1988. Most peaks happened between 15 and 30 April. The latest peak was 4 May 1981 with 2,000 at Cecil Lake. Broods began to appear in late May. Summer: Broods continued to appear through June and July. The first concentrations of birds appeared in mid-August. Autumn: Flocks remained frequent through September and early October. The latest concentration was 200 at Boundary Lake 12 October 1987. Autumn concentrations were generally much smaller than spring flocks, with high counts 200 to 300 birds per site. Seven final fall records (1982 to 1988) ranged from 6 October to 11 November.

Breeding: Three nests were found. Two were in the long grasses atop dikes between the ponds at the north sewage lagoons in Fort St. John 26 May 1983. Each held six eggs. The third nest was in grass at the marsh at the south end of Charlie Lake on 18 June 1981. It held four eggs. Dates for 41 broods ranged from 27 May to 28 July with 60% recorded between 4 June and 25 June. Brood size ranged from one to 11 young (1Y-2, 2Y-2, 3Y-3, 3Y-4, 5Y-4, 6Y-10, 7Y-5, 8Y-6, 9Y-3, 10Y-1, and 11Y-1), with 61% having five to eight young.



Figure 43. The North Peace River region is one of the best places in the province to see Northern Pintail, especially from late April to early October each year. *Photo by R. Wayne Campbell.*

Green-winged Teal

Anas crecca

Status: *Very common spring and autumn migrant and common summer visitor; breeds.*

Williams (1933b) gives two May 1922 records for the North Peace River region. Cowan (1939) found four broods at Swan Lake and one brood at Charlie Lake. Penner (1976) considered it a common migrant and breeder in the Peace River Valley.

Habitat: Migration: Most wetlands from small ponds to large lakes. Breeding: The only nest was located at the outer edge of a stand of old white spruce next to a fresh water stream. Broods are commonly seen on ponds and lakes in woodlands (trembling aspen or boreal spruce) or ones that have at least a fringe of woodlands around them.

Distribution: Migration: Migrates throughout the North Peace River region. Breeding: Likely a widespread breeder. Broods were seen from Boundary Lake west to near Cache Creek.

Occurrence: Spring: Nine arrival dates (1977 and 1981 to 1988) ranged from 7 to 25 April, with seven records from 7 to 17 April. Usually fewer than 10 birds per location were seen in early spring. Much larger numbers (50 to 100 birds) appear from mid-April to early May. The highest single-site count

was a surprising 2,000 birds at Cecil Lake on 30 April 1989. The next highest count was 250 at Cecil Lake on 24 April 1983. Summer: See Breeding. Numbers increased throughout August. Autumn: No autumn flock larger than 130 was seen. Seven final records (1982 to 1988) ranged from 13 October to 5 November.

Breeding: One nest containing nine eggs was found at Stoddart Creek, Fort St. John, on 6 July 1991. A second nest is shown in Figure 44. Dates for 14 broods ranged from 20 June to 14 July. Brood size ranged from four to 10 young (4Y-2, 5Y-2, 6Y-1, 7Y-2, 8Y-3, 9Y-2, and 10Y-1) with one brood of 16 ducklings likely the result of two or more broods amalgamating.

Comments: A male showing the horizontal white side stripe of the Eurasian (*A. c. crecca*) or Aleutian (*A. c. nimia*) subspecies was seen at the Fort St. John north sewage lagoons on 4 June 1988.

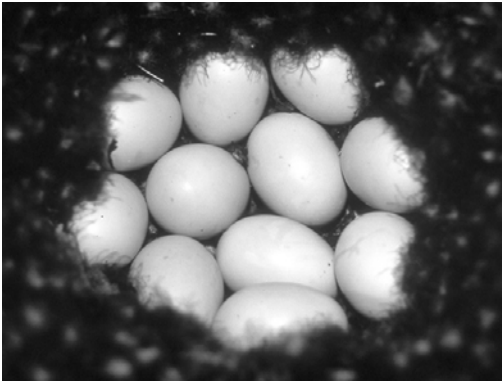


Figure 44. While common in the North Peace River region, finding nests of Green-winged Teal is a challenge. *Photo by R. Wayne Campbell, near Watson Slough (Bear Flat), BC, 27 May 2005.*

Canvasback

Aythya valisineria

Status: *Uncommon to occasionally common spring and autumn migrant and uncommon summer visitor; breeds.*

Not recorded by Williams (1933b). Cowan found Canvasbacks (Figure 45) in considerable numbers as a migrant on Swan Lake and also found them nesting there. Penner (1976) did not record it for the Peace River valley.

Habitat: Migration: Larger lakes as well as smaller ponds and marshes. May or may not use the Peace River in migration. Breeding: Shallow wetlands with plenty of cover, including both shrubs and grasses/sedges around the edges. In 1987 the north sewage lagoons in Fort St. John were home to at least five broods, suggesting that a number of females had nested close by. In 1988, following the removal of shrubs and thick grass cover from the lagoons' edges and sides of the dikes, no broods were found. Cowan (1939) found all four of his nests within a few feet of water and each was hidden in a large sedge tussock.

Distribution: Migration: Charlie and Cecil lakes were assembly sites for spring migrants. Smaller numbers occurred on ponds and small wetlands in the southeastern part of the North Peace River region. Post-breeding males gathered on Cecil Lake. Breeding: Broods were recorded on Charlie Lake (formerly at the south end marsh), north sewage lagoons in Fort St. John, 248A Road marshes near North Pine, 251 Road Pond southwest of Cecil Lake, Cecil Lake, and Boundary Lake.

Occurrence: Spring: Eleven arrival dates (1977 and 1980 to 1989) ranged from 8 April to 3 May, with eight records between 16 and 28 April. From 1981 to 1989, the largest spring flocks occurred between 29 April and 7 May. The largest flock was of 880 birds on Charlie Lake on 7 May 1983. Flocks of 100 to 200 were encountered once or twice a spring. Flocks of males, up to 400, began to occur in late May. Summer: Flocks of post-breeding males gathered on Cecil Lake. Broods were encountered from 18

June to 20 July. Autumn: nine final autumn records (1979 and 1981 to 1988) ranged from 6 October to 5 November, with six records between 18 and 24 October.

Breeding: In the South Peace River region, Cowan (1939) found four nests (Figure 46) at Swan Lake. These contained nine, 10, 10, and 11 eggs. On 20 June 1938, two clutches hatched. No nests were found in the North Peace River region during the study period. Twenty-six broods were found, ranging from 18 June to 20 July. Brood size ranged from two to 15 young (2Y-2, 3Y-2, 4Y-3, 5Y-5, 6Y-3, 7Y-2, 8Y-5, 9Y-1, 10Y-1, 13Y-1, and 15Y-1), with 58% having five to eight young.



Figure 45. Canvasback is uncommon throughout the North Peace River region in migration and becomes less obvious and more local as a breeding species. *Photo by R. Wayne Campbell.*



Figure 46. Canvasback nest discovered near Fort St. John, BC. *Photo by R. Wayne Campbell, 24 June 2008.*

Redhead

Aythya americana

Status: *Uncommon migrant and summer visitor; breeds.*

Not recorded by Williams (1933b). Cowan (1939) considered it a rare summer resident. Penner (1976) didn't record it in the Peace River valley.

Habitat: Migration: Occurs on larger lakes as well as ponds and sewage lagoons. No records for the Peace River. Breeding: Freshwater marshes and ponds with cattails.

Distribution: Migration: Seen on Cecil, German, Boundary, and Charlie lakes as well as ponds and the north and south sewage lagoons in Fort St. John, the North Pine marshes, a dugout at km five of the Upper Cache Road, and a pond along 251 Road. Breeding: Broods recorded at only three locations: the 248A Rd. marshes and ponds of North Pine (three broods), the pond along 251 Road southwest of Cecil Lake (3), and the north sewage lagoons in Fort St. John (1).

Occurrence: Spring: Ten arrival dates (1980 to 1989) ranged from 16 to 28 April. Largest numbers appeared from about 24 April to 5 May. An unusually large flock of 100 birds was seen at Cecil Lake on 4 May 1981. Summer: Broods were generally encountered in July. Autumn: Six final fall records (1982 and 1984 to 1988) ranged from 8 September to 8 November. Redhead was generally scarce after August, and typically was encountered fewer than five times a month through September and November. The two largest single site counts were 27 males and 13 females at the south end of Cecil Lake on 5 September 1987 and 25 males on Charlie Lake on 23 October 1988.

Breeding: No nests were found in the North Peace River region. Dates for seven broods ranged from 4 July to 24 August. Brood size ranged from four to eight young.

Ring-necked Duck

Aythya collaris

Status: *Uncommon migrant and local breeder.*

Not recorded by Williams (1933b) or Cowan (1939). Penner (1976) called it a rare migrant along the Peace River valley. Apparently this diving duck expanded its range into the North Peace River region during the 1970s and 1980s. By 1998, Phinney (1998) had found the Ring-necked Duck to be a fairly common migrant and summer visitor to the Dawson Creek area.

Habitat: Migration: Occurs on lakes but more commonly on ponds. Breeding: Woodland ponds (surrounded by white spruce, black spruce, tamarack (*Larix laricina*), and trembling aspen), and shallow boreal lakes with shoreline emergents (Figure 47) such as German Lake and Boundary Lake.

Distribution: Migration: Widespread. Breeding: Local. It has not been found from the Halfway River westward. Broods found from the Watson Slough area along Highway 29, to German Lake, and Boundary Lake.

Occurrence: Spring: Eight arrival dates (1980 to 1988) ranged from 4 April to 1 May, with five dates between 10 and 23 April. Generally there were fewer than 50 birds per site. Often only one to 10 birds were encountered. Pairs were frequently encountered in April but males often outnumbered females in flocks. The largest single-site count was 100 birds at Cecil Lake on 27 April 1988. The peak of spring migration was during the second half of April to early May, the time also suggested for the peak throughout interior British Columbia (Campbell et al. 1990a). Summer: Flocks of 20 to 75 molting males were encountered at sites like Cecil Lake. Broods found from early July to early August. Numbers in general built during August. The largest single-site count in summer and autumn was 200 birds at Cecil Lake 26 August 1987. Autumn: Seven fall departure records (1982 to 1988) ranged from 26 September to 8 November, with four records from 21 October to 30 October. Most Ring-necked ducks had migrated by early October.

Breeding: No nests were found. Dates for 11 broods ranged from 1 July to 3 August. Brood size ranged from two to nine young (2Y-1, 3Y-1, 4Y-2, 6Y-2, 7Y-1, 8Y-2, and 9Y-2).



Figure 47. Ring-necked Duck, a local breeder in the North Peace River region, prefers to build its nest among the dead stems of dense cattail stands. *Photo by R. Wayne Campbell, near Fort St. John, BC, 14 June 2004.*

Greater Scaup

Aythya marila

Status: *Rare spring migrant, accidental in autumn.*

Williams (1933b) mentioned “scaup-duck” but thought they were probably Lesser Scaup. Not recorded by Cowan (1939). Penner (1976) recorded both Lesser and Greater scaup (see Figure 113) for the Peace River, but gave no further details except that most were not specifically identified during fieldwork.

Habitat: Lakes and ponds.

Distribution: Seen most frequently on the north and south sewage lagoons in Fort St. John (seven sightings), Charlie Lake (four), and Cecil Lake (two).

Occurrence: Thirteen sightings. Spring: Twelve records from 15 April to 26 May, all of one or two birds each. Pairs were seen occasionally. Autumn: One record; a male at the south sewage lagoons on 16 September 1986

Lesser Scaup
Aythya affinis

Status: *Common spring and autumn migrant and summer visitor; breeds.*

Williams (1933b) found two birds he felt were Lesser Scaup (Figure 48) on 12 May 1922 near the Alberta border. Cowan (1939) found this species to be the second most abundant duck, after the Mallard, on Swan Lake, South Peace. Oddly, he did not mention it as occurring on Charlie Lake, which he visited in June, 1938. Penner (1976) called both scaup species fairly common migrants along the Peace River valley, and the Lesser Scaup a common summer resident at upland lakes.



Figure 48. Lesser Scaup is commonly found on larger water bodies, often in large flocks, in migration and summer. *Photo by R. Wayne Campbell.*

Habitat: Migration: Larger water bodies including sewage pond systems, large marshes, lakes, and rivers. Breeding: Ponds and lakes in woods and grassland or agricultural areas.

Distribution: Migration: Occurred on most water bodies throughout the North Peace River region. Largest flocks occurred on Charlie and Cecil lakes. Breeding: Nests and/or broods were recorded from the vicinity of Mile 52.5 of the Alaska Highway, Charlie Lake, Fort St. John, Goodlow, German Lake, and Boundary Lake.

Occurrence: Spring: Nine arrival dates (1980 to 1988) ranged from 7 to 30 April with five dates between 12 and 24 April. The peak of spring migration occurred from the final days of April to the end of the second week of May. The highest single site count was 3,000 on Cecil Lake on 30 April 1989. Summer: Nests with eggs were found mostly in June. Most broods were encountered between mid-July and early August. Autumn: Very common on Charlie Lake from early September to late October or early November. Numbers fluctuated from year to year. There was often a peak in early September of several hundred birds, followed by a second peak in late October. The three highest single site counts were all at Charlie Lake: 2,500 birds on 24 September 1988, 1,050 on 23 October 1988, and 1,000 on 7 September 1985.

Breeding: Thirteen nests with eggs (Figure 49) were found between 7 June and 18 July, with 10 nests found between 7 June and 25 June. Clutch size varied from one to 12 eggs, with nine having eight to 11 eggs. Nests were generally located in long grasses on dry margins of wetlands. One hundred and seven broods were found, as well as three amalgamated broods attended by at least two females each, and two very large broods (27 and 48) of older young without attending females. The 107 broods were seen from 28 June to 4 September with 63.5% from 10 July to 5 August. Brood size varied from one to 18 young (1Y-4, 2Y-6, 3Y-1, 4Y-12, 5Y-5, 6Y-12, 7Y-12, 8Y-14, 9Y-18, 10Y-11, 11Y-3, 12Y-2, 13Y-3, 14Y-1, 15Y-1, 17Y-1, and 18Y-1), with 52% having 6 to 9 young. A further analysis of 52 broods, aged one to seven days old, showed a range of one to 18 young, with 58% having six to nine young.



Figure 49. Lesser Scaup is one of the later nesting waterfowl species in the North Peace River region. Nests predated by American Crow (*Corvus brachyrhynchos*), Common Raven (*Corvus corax*), and American Mink (*Neovision vision*) have been found at Boundary Lake, BC. Photo by R. Wayne Campbell, 23 June 2004.

Harlequin Duck

Histrionicus histrionicus

Status: *Very rare and local spring migrant and casual autumn transient in the eastern North Peace River region.* Probably formerly nested in the Peace River canyon upstream from Hudson's Hope. The canyon is now dammed.

Not mentioned by Williams (1933b) and Cowan (1939). Penner (1976) called it a relatively common summer resident of fast water habitat on the western edge of the Site C dam area and indicates that it was known to breed in the area.

Habitat: Migration: Rivers, lakes, and creeks. Breeding: Swift flowing creeks and rivers. Nests in British Columbia have been located on streamside ledges and beneath rock overhangs as well as on a creek bank (Campbell et al. 1990a).

Distribution: Migration: Recorded in May on the Peace River off Alwin Holland Park, Hudson's Hope (three records) and in September and November on Cecil and Charlie lakes. Breeding: Blood (1979) reported seven pairs in surveys of 19 to 26 May 1975 along the Peace River and one brood observed in the Site C Impact Area for 1977 with no other

details. The Harlequin Duck formerly nested in the Peace Canyon between the WAC Bennett Dam and Hudson's Hope. The building of the Peace Canyon Dam in the 1970s flooded the canyon.

Occurrence: Spring: All three records were birds observed on rocks in the Peace River just upstream from Hudson's Hope. The sightings ranged from 7 May to 16 May. The largest number was 3 males and 2 females on 7 May 1978. The other sightings were of pairs (12 May 1989 and 16 May 1976). Autumn: The latest autumn sighting was of a bird that was likely a female on Charlie Lake on 7 November 1986.

Breeding: No details known.

Surf Scoter

Melanitta perspicillata

Status: *Common migrant and rare summer visitor.*

Not recorded by Williams (1933b). Cowan (1939) recorded one at Taylor 6 June 1938. Penner (1976) considered the species a fairly common migrant and uncommon summer resident on the Peace River.

Habitat: Migration: Lakes, large ponds, and rivers.

Distribution: Migration: Occurred along the Peace River at Hudson's Hope, Charlie Lake, Cecil Lake, German Lake, Lost Lake, Boundary Lake, the 248A Road marshes near North Pine, and the north and south sewage lagoons in Fort St. John.

Occurrence: Spring: Ten spring arrival dates (1979 to 1988) ranged from 28 April to 8 May. Flocks of 30 to 50+ birds occurred almost any time in May, but the largest flocks were recorded from 12 to 19 May. The largest single-site record was of 200 on 17 May 1986 on Charlie Lake. Seven latest spring records (1982 to 1988) ranged from 23 May to 12 June. Summer: Several July and August records may have been of summering birds or, in some cases, migrants. The largest counts were of a flock of 12, mostly males, and one of 16, males and females, along the Peace River near Hudson's Hope on 26 July 1985. Small

numbers of Surf Scoters, presumably south-bound, appeared as early as early August at Boundary Lake and the north sewage lagoons. Autumn: In September, small flocks appeared on Charlie Lake. Autumn peaks occurred in late September and early October. The largest autumn flock was of 133 on Charlie Lake, 6 October 1986. Seven latest autumn records (1982 to 1988) ranged from 2 October to 5 November.

Breeding: Campbell et al. (1990a) show breeding in the North Peace River region, but give no specific records.

White-winged Scoter

Melanitta fusca

Status: *Common migrant and uncommon summer visitor; breeds.*

Not recorded by Williams (1932a). Cowan collected a female carrying an egg in her oviduct and noted 26 to 75 birds on Swan Lake, South Peace, during May and June 1938. Penner (1976) termed it an uncommon migrant along the Peace River. Soper (1949) found this species a common breeder with a nest at Sinclair Lake, and ducklings on Cardinal, Magliore, Kimiwan, and Winagami lakes in the Grande Prairie region of Alberta.

Habitat: Migration: Occurs most regularly on larger lakes; also occasionally on small ponds and sewage lagoons. Breeding: The single nest was located beside a shallow acidic lake surrounded by black spruce muskeg.

Distribution: Migration: Has been seen along the Peace River between Farrell Creek and the Halfway River. The species also frequented Charlie, Cecil, German, and Boundary lakes. Occasionally it was seen on the north sewage lagoons in Fort St. John and Lost Lake. Breeding: One nest was found at German Lake. A brood of 21 ducklings with a female was also seen at German Lake 3 August 1987.

Occurrence: Spring: Eight arrival dates (1981 to 1988) ranged from 24 April to 11 May. A peak in numbers generally occurred on Charlie Lake during

the second half of May, often into the fourth week. The single largest count was of 389 ducks on Charlie Lake on 24 May 1986. Summer: Occasionally a flock of 100 to 200 birds remained on Charlie Lake into June. Smaller numbers appeared on several lakes and ponds over summer. Autumn: Birds gradually left the smaller lakes as numbers built on Charlie Lake. The largest autumn flock on Charlie Lake was 50 scoters on 26 September 1982. Seven departure records (1982 to 1988) ranged from 27 October to 8 November.

Breeding: The German Lake nest, containing nine eggs, was found on 15 June 1980 when a hen flushed from it. The nest was constructed of grasses and well-lined with down. It was situated in weeds on the edge of a gas well gravel road about 8 m from an active gas pump in the muskeg close to the lake's edge. Also at German Lake was a hen with a brood of 21 young aged about 19 to 27 days old on 3 August 1987.

Black Scoter

Melanitta nigra

Status: *Casual vagrant.*

Not previously recorded in the North Peace River region.

Occurrence: Two sightings: one on Charlie Lake on 18 October 1987 and two on the lake off Charlie Lake Provincial Park on 2 November 1987. All three were in female-like plumage but may have been immatures.

Long-tailed Duck

Clangula hyemalis

Status: *Uncommon spring and autumn migrant.*

Not recorded by Williams (1932). Cowan (1939) recorded small numbers at Swan Lake, South Peace, in May 1938. Penner (1976) called it an uncommon migrant along the Peace River.

Habitat: Migration: Lakes, rivers, and occasionally ponds.

Distribution: Found mostly on Charlie Lake. It has also been recorded on the north and south sewage lagoons in Fort St. John a few times as well as on Cecil Lake (once) and the Peace River at Taylor.

Occurrence: Spring: Eleven earliest arrival dates (1979 to 1989) ranged from 24 April to 16 May, with eight records between 29 April and 8 May. Flocks were frequently made up of one to seven birds. The largest flocks ranged from 30 to 50 birds, with 74 on Charlie Lake on 12 May 1984. Peak numbers usually occurred between 4 and 8 May. Eight latest spring records (1981 and 1983 to 1989) ranged from 14 May to 2 June, with six dates between 25 May and 2 June. Summer: Other than during the first week of June, the species was not recorded in summer. Autumn: Six autumn arrival dates (1982 and 1984 to 1988) ranged from 29 September to 18 October. Numbers were usually one to seven birds per flock, with 50 birds at Cecil Lake on 8 October 1979, the highest single-site count. Five latest autumn records ranged from 21 October to 7 November. The last Long-tailed Ducks left Charlie Lake upon its freeze-up. As long as there were fairly large areas of open water, there would usually be a Long-tailed Duck or two present.

Comment: The regular occurrence of the Long-tailed Duck in the North Peace River region underlines the importance of Charlie Lake as a migratory stop-over point for waterfowl in British Columbia's northeast.

Bufflehead *Bucephala albeola*

Status: *Common spring and autumn migrant and uncommon summer visitor; breeds.*

In 1922, Williams (1933b) recorded a pair on the Peace River near the Alberta border and found a nest along the Blueberry River north of the North Peace River region. Cowan (1939) found the Bufflehead an abundant nesting species at Swan Lake, South Peace, with pairs on other ponds and lakes in the District, though not at Charlie Lake. Penner (1976) termed it a fairly common nesting species along the Peace River.

Habitat: Migration: Lakes, ponds, sewage lagoons, dugouts, and rivers. Breeding: Woodland ponds, in trembling aspen groves or mixed boreal forest. According to Penner (1976) it also nested around backwaters of the Peace River.

Distribution: Migration: Virtually all bodies of water in the North Peace River region. Breeding: Wooded ponds from Cache Creek and Bear Flat, east to German Lake and Boundary Lake.

Occurrence: Spring: Eight arrival dates (1981 to 1988) ranged from 5 to 24 April, with six records between 5 and 17 April. The Bufflehead was one of the first diving ducks to appear on upland ponds. Spring flocks usually contained fewer than 10 to 15 birds. During May, flocks of 20 to 50 birds (Figure 50) favoured the shallow bay on the east side of Charlie Lake north of Beaton Provincial Park. Males gather into post-breeding flocks as early as late May. For the South Peace Cowan (1939) noted males congregating into flocks on 29 May 1938. In the North Peace River region, a raft of 100 males gathered off Beaton Provincial Park on 3 June 1983. Summer: The earliest large autumn flock was of 200 on Cecil Lake on 24 August 1984. Autumn: Flocks of 50 to 500 gathered on Charlie Lake from early September through October and into early November if the freezing of the lake allowed it. Seven final autumn records (1982 to 1988) ranged from 27 October to 11 November.



Figure 50. Bufflehead is primarily a spring and autumn migrant in the North Peace River region although smaller numbers remain to breed. *Photo by R. Wayne Campbell.*

Breeding: A nest with five eggs was found along the Blueberry River just north of the North Peace River region on 21 May 1922 (Williams 1933b). Twenty-four broods in the North Peace River region ranged from 18 June to 21 July, with 71% between 1 July and 9 July. Brood size range from one to 13 ducklings (1Y-1, 2Y-1, 3Y-1, 4Y-3, 5Y-3, 6Y-7, 7Y-3, 8Y-3, 9Y-1, and 13Y-1), with 54% having five to seven young. Broods larger than 12 are likely the results of amalgamation when one mother chases a second from the pond (Campbell et al. 1990a).

Common Goldeneye
Bucephala clangula

Status: *Common spring and autumn migrant and uncommon summer visitor; breeds.*

Williams (1932) did not record this species (Figure 51). Cowan (1939) found several nesting near Swan Lake, but not at Charlie Lake. Penner (1976) called it a common migrant and summer breeder along the Peace River and its major tributaries.



Figure 51. Common Goldeneye is more common as a migrant than as a breeding species in the North Peace River region. *Photo by R. Wayne Campbell.*

Habitat: Migration: Rivers and lakes as well as ponds. Breeding: Ponds and lakes surrounded by woodlands with trees large enough to contain cavities for nesting. This species requires water clear enough for feeding upon aquatic invertebrates (Eadie et al. 1995).

Distribution: Migration: Most water bodies including Charlie, Cecil, German, and Boundary lakes, the Peace and Pine rivers, and sewage ponds. It was most abundant on Charlie Lake. Breeding: Broods were seen at a swamp north of the Cameron Lakes along Highway 29 south of Hudson's Hope, the pond along Highway 29 west of Cache Creek, Charlie Lake, the north and south sewage lagoons in Fort St. John, and shallow ponds north of the 103 Road bridge on the Beatton River. There were no records of broods for Cecil, German, and Boundary lakes. Blood (1979) stated that it nested along the Peace River.

Occurrence: Spring: Ten arrival records (1977 and 1980 to 1988) ranged from 21 March to 23 April, with seven dates between 27 March and 13 April. The peak of spring migration occurred between 24 April and 12 May, when 50 to 150 birds were encountered on Charlie Lake and the south sewage lagoons in Fort St. John. The largest single-site count was 150 birds at the south end of Charlie Lake on 25 April 1981. Numbers dwindled quickly after mid-May. Summer: Broods were recorded as early as 9 June. It became relatively scarce in August. Autumn: Still scarce in September but numbers increased during October so that by mid-month the species was fairly common on Charlie Lake. Flocks increased to 100+ birds on Charlie Lake prior to the lake freezing in late October or early November. The largest single-site count for Charlie Lake was 1,100 birds on 23 October 1988. Winter: Occasional along the Peace River in small numbers. A typical sighting was of two males at Taylor on 26 December 1987.

Breeding: Dates for 32 broods ranged from 9 June to 19 July. Brood size ranged from two to 16 young (2Y-3, 3Y-6, 4Y-7, 5Y-4, 6Y-1, 7Y-1, 8Y-3, 9Y-2, 10Y-1, 11Y-2, 13Y-1, and 16Y-1), with 53% having three to five young.

Barrow's Goldeneye

Bucephala islandica

Status: *Uncommon to occasionally common spring and autumn migrant and uncommon summer visitor; may breed.*

Williams (1933a) recorded one Barrow's Goldeneye 50 km north of Fort St. John 19 May 1922. He also referred to several records of females that may have been Barrow's. Cowan (1939) found this species to be the most frequent goldeneye at Charlie Lake in June 1938, though it was scarce in the South Peace at the time. Penner (1976) termed it fairly rare in the Peace River valley but speculated that low numbers may breed along the Peace River in the western parts of the Site C impact area.

Habitat: Migration: Most frequent on deeper lakes and sewage lagoons but also occurred on beaver ponds, farm ponds, and shallow lakes. Breeding: Possibly mixed spruce-balsam poplar forests. Broods were reported only on the south sewage lagoons in Fort St. John, which had trembling aspen forests growing on south-facing slopes below the lagoons.

Distribution: Migration and Summer: Most frequent on Charlie Lake, but also seen in the Hudson's Hope area, the Watson Slough area, the sewage lagoons in Fort St. John, Grand Haven (rare), North Pine (rare), Cecil Lake, the mouth of the Halfway River (rare), German Lake (uncommon), and Boundary Lake. Breeding: In this study, probably Barrow's broods were seen only on the south sewage lagoons in Fort St. John.

Occurrence: Spring: Eleven arrival records (1977 and 1980 to 1989) ranged from 10 to 27 April. Spring populations were small, with one to 20 birds per site. The largest single-site count was 50 birds on Charlie Lake on 14 May 1988. There was no obvious peak in spring. Summer: From early June onwards assemblies of mature and first-year males numbering 10 to 60 individuals occurred on Charlie Lake. The largest flock was of 350 males on 8 June 1989. The earliest probable Barrow's brood was seen 28 June. See Breeding. Autumn: This species

was somewhat more abundant in fall than in the spring. From late September until freeze-up (usually around 1 November), flocks of 60 to 200 could occur on Charlie Lake. The largest count was 600 on 30 October 1988, a week before the lake froze. Flocks of 200 to 1,000 unidentified goldeneyes appeared on Charlie Lake in late September and October in 1982 and 1983. These birds were too distant for specific identification; however, any coming close enough for identification were Barrow's.

Breeding: P.W. Martin, in Cowan (1939), found a nest with eggs west of Charlie Lake in a hollow cottonwood [balsam poplar] on 13 June 1938. The female was not present and it was "presumed" to be a Barrow's Goldeneye. The species has not been confirmed breeding in the Dawson Creek region and Phinney (1998) suggests that "breeding evidence may have been overlooked."

Comments: A male Common Goldeneye x Barrow's Goldeneye hybrid was studied at the south end of Charlie Lake on 17 and 26 April 1987.

Hooded Merganser

Lophodytes cucullatus

Status: *Very rare spring migrant and rare autumn migrant.*

Not previously listed for the North Peace River region (Figure 52).

Habitat: Migration: Wooded wetlands.

Distribution: Migration: Wooded shallows at the north end of Charlie Lake, the wooded channel at the south end of the lake, and occasionally on the sewage lagoons in Fort St. John and on Watson Slough. In late autumn this species occasionally appeared in the middle of Charlie Lake.

Occurrence: Spring: Eight records, evenly split between April and May. Earliest arrival was 17 April, the latest was 30 May. The largest single site count was three males at Watson Slough on 23 May 1982. Summer: Observed again as a migrant in mid-August. Earliest arrival was one bird on the south

sewage lagoons in Fort St. John on 15 August 1987. **Autumn:** Most frequent but still very uncommon. Highest single site count was 18 at the north end of Charlie Lake on 22 October 1986. The latest sighting was 5 November.

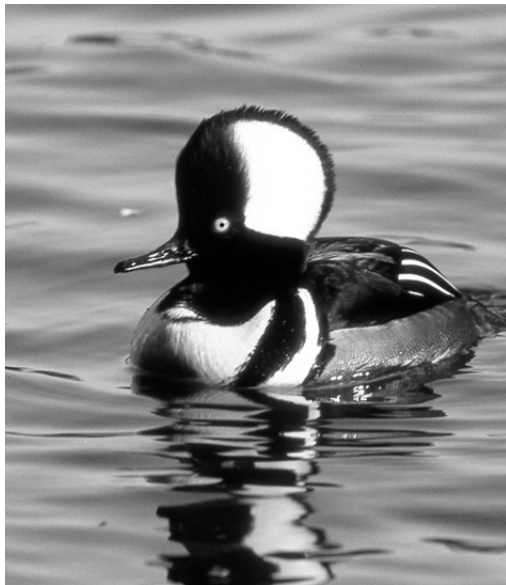


Figure 52. During the early 1980s, the Hooded Merganser extended its range in British Columbia into parts of the North Peace River region on water bodies with clear water and fishes. *Photo by R. Wayne Campbell.*

Common Merganser *Mergus merganser*

Status: *Uncommon spring and autumn migrant and summer resident and casual in winter; breeds.*

Williams (1933b) recorded a male upstream from Hudson's Hope on 26 June 1930. Cowan (1939) also encountered only one, a male on Swan Lake, South Peace, on 16 May 1938. Penner (1976) found the species to be a common summer breeder along the Peace River valley.

Habitat: **Migration:** Clear-water streams and rivers (Figures 33 and 53). In the North Peace River region, the species was restricted to the Peace River

except as a rare migrant on Charlie Lake. **Breeding:** Clear-water streams, rivers, and beaver ponds. In the North Peace River region, only the Peace River seemed clear enough to qualify.

Distribution: **Migration:** Restricted to the Peace River except as a rare migrant to Charlie Lake, with one April sighting at the north sewage lagoons in Fort St. John. **Breeding:** Appeared to breed only along the Peace River, perhaps east to the Alberta border.

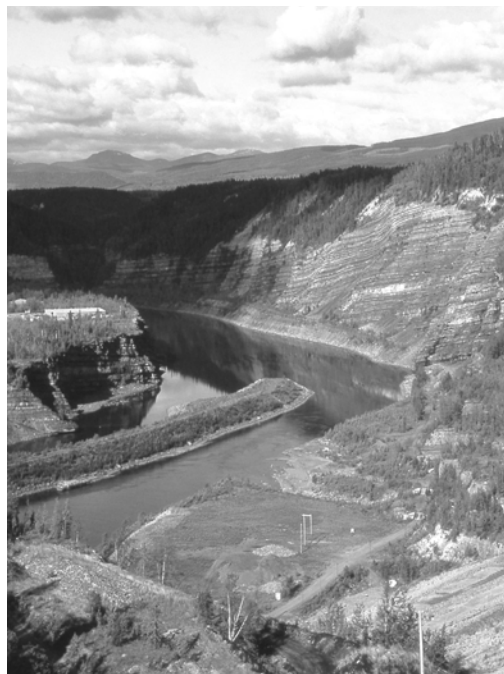


Figure 53. In the North Peace River region, Common Merganser is almost entirely restricted to clear waters of the Peace River system. Further dam developments will limit the presence and distribution of the species in the area. *Photo by R. Wayne Campbell, south end of Williston Lake, BC, 15 June 2003.*

Occurrence: **Spring:** Arrived earlier on the Peace River than on the upland plateau. Seven arrival dates (1981, 1983 to 1985, 1988, and 1989) for the uplands, typically Charlie Lake, ranged from 12

April to 16 May. Seven arrival dates (1979, 1982 to 1984 and 1986 to 1988) for the Peace River valley ranged from 2 March to 14 April, with five dates between 27 March and 5 April. **Summer:** Broods appeared from 21 July to 18 August. **Autumn:** One autumn record for the uplands on 1 November. This merganser departed the Peace River valley probably sometime in late October or November. **Winter:** Three on the Peace River at Hudson's Hope on 11 January 1987 and 2 at Farrell Creek mouth on 23 February 1986. There were also three on the Peace River at Taylor on 22 February 1987.

Breeding: No nests were found. The sightings of four broods ranged from 21 July to 18 August, though all four were well-advanced in age when discovered. Brood size ranged from five to 12 young (5Y-1, 8Y-1, 10Y-1, and 12Y-1).

Comments: Flooding of the Peace River valley between Hudson's Hope and Taylor would dramatically alter, and likely reduce, the breeding range of this species in the North Peace River region (Figure 53).

Red-breasted Merganser *Mergus serrator*

Status: *Rare spring and autumn migrant.*

Not recorded by Williams (1932) or Cowan (1939). Penner (1976) called it an occasional migrant and summer visitor to the Peace River valley.

Habitat: Migration: Lakes, rivers, and rarely sewage lagoons.

Distribution: Migration: Recorded most frequently on Charlie Lake (81% of this study's records). There were two records for the sewage lagoons in Fort St. John, and single records for Cecil, German, and Boundary lakes and Farrell Creek. Likely regularly occurs along the Peace River, but more fieldwork is needed.

Occurrence: Spring: Nineteen records from 25 April through 27 May. No peak for this period. Highest single-site counts were of four birds on Charlie

Lake on 1 May 1983 and 24 May 1986. Summer: No records known in spite of status given by Penner (1976). Autumn: Twelve records from 12 October to 1 November. The highest single-site counts were of flocks of 10 Red-breasted Mergansers on Charlie Lake on 25 October 1987 and 27 October 1985.

Ruddy Duck *Oxyura jamaicensis*

Status: *Common spring and autumn migrant and summer visitor; breeds.*

Unrecorded by Williams (1933b). Cowan (1939) considered it "not common" and found it only at Swan Lake in the South Peace. Penner (1976) noted that it was fairly common on upland lakes adjacent to the Peace River valley.

Habitat: Migration: Most plentiful on shallow lakes such as Boundary or Cecil lakes, and ponds and marshes like the sewage lagoons in Fort St. John and the pond along 251 Road. Breeding: Ponds and shallow lakes with plenty of cattails (Figure 54) and/or bulrushes. It nests in dense marsh vegetation over shallow water (Kaufman 1996).

Distribution: Migration and Breeding: Wetlands throughout the North Peace River region west to the marshes and beaver ponds near Cache Creek bridge along Highway 29. It seldom occurred on Charlie Lake except for the large shallow bay north of Beaton Provincial Park. The species has resorted to the main body of Charlie Lake when other bodies of water were frozen in late October and November.

Occurrence: Spring: Ten arrival dates ranged from 15 to 29 April with eight dates between 22 and 29 April Ruddy Ducks arrived directly on the wetlands where they would breed; as well, flocks of migrants appeared on larger bodies of water. The highest single site spring count was 200 on the Fort St. John north sewage lagoons on 28 May 1988. Summer: Widespread in suitable habitat. Autumn: Seven final departure records (1982 to 1988) ranged from 25 September to 4 November There were no large concentrations. The highest single site count was a loose flock of 33 birds on Charlie Lake on 4

November 1986, just before freeze-up.

Breeding: Dates for 58 broods ranged from 4 July to 25 August, with 53% recorded between 13 July and 7 August. Brood size ranged from one to 12 young (1Y-1, 1Y-3, 3Y-7, 4Y-11, 5Y-10, 6Y-8, 7Y-6, 8Y-6, 9Y-3, 10Y-2, and 12Y-1), with 62% having three to six young.



Figure 54. Ruddy Duck, a common breeding species in the North Peace River region, prefers to nest in cattail marshes, especially supported by dead stems. The species' large, white, granular-surfaced eggs are unmistakable. *Photo by R. Wayne Campbell, Cecil Lake, BC, 26 June 2002.*

GROUSE AND PTARMIGAN

Ruffed Grouse

Bonasa umbellus

Status: *Uncommon resident.*

Williams (1933b) found the Ruffed Grouse (Figure 55) common throughout the Peace River area. Cowan (1939) found it abundant in the South and North Peace River regions. Penner (1976) called it common in the Peace River valley.



Figure 55. Ruffed Grouse is present year-round, usually in mixed woods (see Figures 18 and 20), in the North Peace River region. *Photo by Chris Siddle, North Pine, BC, December 1986.*

Habitat: Year-round: In the Peace River valley, Penner (1976) defined the species' habitat as mixed deciduous forest and tall shrub communities. On the adjacent uplands it favoured similar habitat, especially mixed forest as well as willow thickets bordering forests.

Distribution: The Ruffed Grouse occurred in all wooded areas of the North Peace River region year-round. Broods were seen at Dinosaur Lake picnic site, Charlie Lake, Stoddart Creek (Fort St. John), St. John Creek (near 101 Road), Johnstone Road (Taylor), and Boundary Lake.

Occurrence: Spring: The drumming of males was heard as early as 9 April and continued into June. Summer: Broods were encountered infrequently. Autumn: Most conspicuous in the early autumn when the species was often very tame. Individuals,

presumably inexperienced young birds, wandered into suburban gardens in Fort St. John up to a km from the nearest forest. They were frequently killed by collisions with vehicles along North Peace River region roadways. Winter: Occasionally seen feeding upon trembling aspen buds. Numbers fluctuated from year to year.

Breeding: Cowan (1939) reported a nest with 12 eggs on 13 May 1938 but did not specify a location. Thirteen broods were found, dating from 17 June to 31 August. Brood size ranged from one to 10 young (1Y-1, 3Y-1, 4Y-4, 5Y-2, 6Y-2, 7Y-1, 8Y-1, and 10Y-1).

Spruce Grouse

Falcipennis canadensis

Status: *Rare resident; breeds.*

Williams (1933b) saw Spruce Grouse (Figure 56) at Hudson Hope on 15 July 1929 and in the Peace River Canyon 28 August 1929. Cowan (1939) encountered this species in “upland spruce and spruce-aspen” but not in the stream valleys of the South Peace region. Not reported by Penner (1976).

Habitat: Year-round: White and black spruce and lodgepole pine forests. The species is generally absent from the trembling aspen parkland, except in areas with heavy coniferous forest.

Distribution: Restricted to the northern forested portions of the North Peace River region.

Occurrence: Spring: Williams (1933) collected three specimens of Spruce Grouse at Nig Creek north of Buick Creek on 24 May 1922. Summer: An undisclosed number were collected or seen at Hudson’s Hope on 15 July 1929 and along the Peace River canyon on 28 August 1929 (Williams 1932). A female was seen at Boundary Lake on 28 June 1988 (Mike Toochin pers. comm.). Autumn: Four were seen in the Butler Range north of Hudson Hope on 17 September 1988 (Gerry Paille pers. comm.). Winter: Two males and a female were photographed by Joan Johnston near Milligan Creek on 16 February 1984 (J. Johnston pers. comm.).

Breeding: A nest with four eggs was found along the Beaton River (Williams 1933a).



Figure 56. Female Spruce Grouse is a rare find in the North Peace River region. *Photo by R. Wayne Campbell, near Hudson’s Hope, BC, 2 July 1998.*

Sharp-tailed Grouse

Tympanuchas phasianellus

Status: *Uncommon resident; breeds.*

Williams (1933 a, 1933b) found the Sharp-tailed Grouse common at Fort St. John and the Blueberry River on the north edge of the study area in May 1922. He also found it quite common during the summers of 1929 and 1930 in the “plains country” around Rolla, Taylor, Fort St. John, Hudson’s Hope, East Pine, Sunset Prairie, Arras, and Dawson Creek. Cowan (1939) reported it as sparse around Tupper Creek in the South Peace region but more numerous around Fort St. John and Charlie Lake. Penner (1976) reported it from the breaks and uplands adjacent to south-facing slopes along the Peace River valley. Blood (1979) called this species rare in the Site C dam area in the Peace River valley west of Taylor.

Habitat: Year-round: Nonbreeding: Occurs in grasslands and agricultural fields, especially around the edges of forested draws, shelter belts, border thickets, and copses (Figure 57). Breeding: Upland “breaks” (Penner 1976), hay fields, grain fields, and according to Phinney (1998) clear-cuts. Phinney (1998) also suggests that leks (display grounds) are “only semi-permanent; agricultural practices frequently alter them to such an extent that they are often not used by birds in successive years. New leks are readily adopted; a road in a clear-cut (harvested in 1990) was first used in 1995.” Traditional leks were located in the North Peace River region. One, situated northwest of Charlie Lake on a lightly grazed pasture hill with patches of low rose bushes, was used in successive years.

Distribution: Appeared to be widely distributed in the open country of the eastern half of the North

Peace River region. Scarce and local around forested areas of Hudson’s Hope. Broods observed from km 134 of the Alaska Highway, Halfway River along Highway 29, Grand Haven, and the Clearview area.

Occurrence: Spring: As spring progresses this species becomes harder to find. Summer: Surprisingly few breeding data. No nests were reported. Hens with broods seen from mid-June to mid-August. Autumn: Numbers and sightings peak in October with 23 of the 129 sightings (18%) occurring in the month. Winter: In coldest weather, Sharp-tailed Grouse appeared closer to urban areas, even occasionally in downtown Fort St. John. It is not known if this had to do with food supplies or with the heat “island” created by concentrated human habitations.

Breeding: See Occurrence: Summer.



Figure 57. During spring and summer Sharp-tailed Grouse may be found in habitats that consist of grasslands, trembling aspen copses, and forested draws, often with thickets of saskatoon and wild rose. *Photo by R. Wayne Campbell, near Fort St. John, BC, 23 June 1996.*

LOONS

Red-throated Loon

Gavia stellata

Status: *Rare spring and autumn migrant.*

Not reported previously for the Peace River area.

Occurrence: Eleven records. **Spring:** Five sightings, all of adults swimming and diving, on southern Charlie Lake: one on 23 May 1982, five on 16 May 1983, one on 21 May 1983, three on 23 May 1983, and one on 21 May 1984. **Summer:** One in alternative plumage on 21 August 1986. **Autumn:** One in basic plumage on 18 September 1983, one adult coming out of alternative plumage on 2 October 1983, one adult in alternative plumage on 3 October 1987, one adult in alternative plumage on 10 October 1987, and one (plumage not recorded) on 23 October 1988.

Pacific Loon

Gavia pacifica

Status: *Casual spring migrant, casual summer visitor, and rare autumn migrant.*

Not reported by Williams (1932a) or Penner (1976). Cowan mentioned two birds that were “almost certainly” Pacific Loons at Swan Lake, South Peace, on 21 June 1938.

Habitat: Migration and Summer: Lakes, ponds, and occasionally sewage lagoons.

Distribution: Migration and Summer: Most frequent on Charlie Lake. It has also been seen on Cecil Lake, 251 Road Pond, and the north sewage lagoons in Fort St. John.

Occurrence: **Spring:** Only two sightings: one alternatively plumaged adult on the 251 Road Pond on 10 May 1982 and one on Charlie Lake on 21 May 1983. **Summer:** Two sightings: 67 adults in alternative plumage on Charlie Lake on 6 June 1984 and one on Cecil Lake on 23 June 1986. **Autumn:** Eighteen records ranged from 12 September through 27 October, 13 of which were in October, generally

until about mid-month. The largest single site count occurred on 16 September 1986 when a flock of 162 adults were present on Charlie Lake.

Common Loon

Gavia immer

Status: *Uncommon spring and autumn migrant and summer visitor; may breed on Charlie Lake.*

Williams (1933b) recorded two at Moberly Lake in July 1930. Cowan (1939) saw only one at Swan Lake, South Peace, and none in the North Peace River region. Penner (1976) called it an uncommon migrant on the Peace River and reported a breeding pair at Boudreau Lake in the South Peace.

Habitat: Migration: Virtually all water bodies large enough to allow loons’ take-off and landing. The turbidity of most water bodies in the North Peace River region may restrict loon distribution as the birds may not be able to see prey underwater. Breeding: lakes.

Distribution: Migration: Appeared along the Peace River and on lakes, especially Charlie Lake (see Figure 17). In spring, and also rarely in June, the species occurred occasionally on the sewage lagoons in Fort St. John, the North Pine marshes, a pond along 251 Road, and shallow lakes like Boundary and German lakes. Breeding: May have nested on Charlie Lake.

Occurrence: **Spring:** Eleven early arrival dates (1978 to 1989) ranged from 23 April to 6 May. There appeared to be no clear peak in spring numbers. The highest spring count was of 17 loons on Charlie Lake on 6 May 1986. **Summer:** Individuals appeared at a number of locations. Typical were sightings of single birds at North Pine marshes on 1 June 1985; one at Cecil Lake on 15 June 1987, and two at German Lake on 21 July 1985. Ten adult -plumaged birds were on Charlie Lake on 21 August 1985. **Autumn:** Seven departure records (1982 to 1988) ranged from 13 October to 11 November.

Breeding: Residents of Charlie Lake reported that loons occasionally nest on the lake.

Comments: See Campbell et al. (2008) for a summary of the status and biology of the Common Loon in British Columbia and recent records for the North Peace River region.

GREBES

Pied-billed Grebe *Podilymbus podiceps*

Status: *Uncommon spring and autumn migrant. Uncommon summer visitor; breeds.*

Not recorded by Williams (1932a) or Penner (1976). Cowan (1939) heard this species at Charlie Lake during mid-June 1938.

Habitat: Migration: Almost any water body. Breeding: Shallow wetlands including ponds and lakes with emergent vegetation (Figure 58).

Distribution: Migration: Occurred on most water bodies in the eastern half of the North Peace River region. Breeding: Has nested at North Pine marshes, north sewage lagoons in Fort St. John, 251 Road Pond (southwest of Cecil Lake), Watson Slough, and Boundary Lake.

Occurrence: Spring: Eight records (1981 to 1988) of spring arrival ranged from 6 to 14 May. Other than a few appearing on Charlie Lake or the sewage lagoons in Fort St. John, where they were usually not found later in the season, most pied-bills appeared to arrive directly on the breeding grounds, such as Cecil Lake. There were no spring aggregations. Summer: The largest single site count for early summer was five at Boundary Lake on 10 June 1984. Sightings of chicks ranged from 1 July through 17 July. Migrant adults and/or immatures appeared some summers as early as 30 July at the north sewage lagoons in Fort St. John. Autumn: Five records (1981, 1982, 1984, 1986, and 1988) of latest autumn departure ranged from 22 August to 26 September.

Breeding: Eight records of adults with young. These included an adult with one large chick and an adult with five chicks on Boundary Lake on 11 July 1982. On 11 July 1986, two adults with four half-sized chicks were seen at Boundary Lake. At Watson Slough, two adults with two downy chicks were present on 1 July 1998, as well as two adults with five downy chicks. On the 251 Road Pond, southwest of Cecil Lake, two adults with four chicks were recorded on 4 July 1998.



Figure 58. Typical location of a Pied-billed Grebe nest among living and dead cattails in the North Peace River region. *Photo by R. Wayne Campbell, Cecil Lake, BC, 22 June 2004.*

Horned Grebe *Podiceps auritus*

Status: *Uncommon to occasionally common spring and autumn migrant and uncommon summer visitor; breeds.*

Not listed by Williams (1932a). Cowan (1939) determined that 15 pairs were found on Swan Lake

and pairs also occurred at two other small lakes in the South Peace but nesting was not confirmed. Penner (1976) termed it an occasional migrant along the Peace River.

Habitat: Migration: Mainly deep lakes. Breeding: Ponds (see Figure 40).

Distribution: Migration: Appeared most frequently on Charlie Lake; also to a lesser extent on Cecil Lake, Boundary Lake, German Lake, and Lost Lake. It also appeared on smaller water bodies including the sewage lagoons in Fort St. John. Breeding: Found with young on small ponds around Fort St. John and Cecil Lake, including a pond at the British Columbia Rail Depot, one at the Fort St. John airport, one near the Grand Haven landfill, and one on the 251 Road Pond southwest of Cecil Lake. The species may also have nested at the North Pine marshes and Watson Slough.

Occurrence: Spring: Eight first arrival dates (1982 to 1989) ranged from 23 April to 5 May. Migrants were frequently seen in early May. The largest single site count was 142 on Charlie Lake, off Beaton Provincial Park, on 7 May 1983. The second largest was 65 in the same area on 7 May 1984. Summer: Earliest chicks were seen in late June. Adults and young occupied breeding ponds through August and early September. Autumn: Eight latest autumn records (1981 to 1988) ranged from 10 October to 5 November. The latest sightings came from Charlie Lake, the last lake in the area to freeze. Largest autumn numbers occurred through September and October. The highest single site count was 111 birds on Charlie Lake, off Beaton Provincial Park, on 24 September 1988.

Breeding: One nest with an incubating adult was found on a pond along the 251 Road on 11 July 1983. This date appears to have been later than usual, as adults with chicks were usually encountered from late June onwards. There were seven records of adults with two or three chicks. The earliest such sighting was on 24 June 1987.

Red-necked Grebe

Podiceps grisegena

Status: *Uncommon to fairly common spring and autumn migrant and uncommon and local summer visitor; breeds.*

Williams (1933b) mentioned encountering what was “evidently” this species on the Peace near the Alberta border in 1922 and at Moberly Lake in 1930. Cowan (1939) found 61 adults and several nests at the south end of Charlie Lake in June 1938. Penner (1976) called it an occasional migrant on the Peace River.

Habitat: Migration: Lakes, ponds, and rivers. Breeding: Sheltered, usually shallow lakes with emergent and submerged vegetation as well as extensive surface patches of yellow pond-lily (*Nuphar lutea*).

Distribution: Migration: Occurred on larger water bodies as well as the sewage lagoons in Fort St. John. Breeding: Fairly local. Nested at the south end of Charlie Lake until the early 1980s when construction of a dike eliminated habitat. It also nested at the north end of Charlie Lake, north end of Boundary Lake, on Lost Lake, and on a pond along 251 Road.

Occurrence: Spring: Ten arrival dates (1978 and 1981 to 1989) ranged from 22 April to 4 May. Individuals appeared earliest on small wetlands which thawed before the larger lakes did. Birds appeared on Charlie Lake as soon as it thawed, usually during the last week of April. The largest single site count was 40 on Charlie Lake in the bay just north of Beaton Provincial Park, on 7 May 1984. Penner (1976) presented larger numbers for the Peace River where 150 were present on 5 May and 156 on 6 May 1975, but these counts probably represented observations along the river rather than single site counts. Summer: See Breeding. Autumn: Highest numbers occurred during late August and September. The north end of Charlie Lake was particularly good for Red-necked Grebes, with 25 birds on 7 September and 20 September and 32 birds on 22 October 1986.

Breeding: Two nests on Lost Lake were examined 20 June 1996 (R.Wayne Campbell, pers. comm.). The first contained three eggs near hatching and broken egg shells, and the second nest two eggs and one egg shell. Both were situated in open water among yellow pond-lily leaves (Figure 59). Cowan (1939) found many nests at the south end of Charlie Lake on 8 June 1938. Egg -laying was in progress in some nests, while in others eggs were far advanced in incubation. The nests occurred in a patch of bulrushes less than an acre in size.

A census of Lost Lake southwest of Boundary Lake on 24 June 1984 resulted in observing two sets of adults each attending two chicks. As well there was an adult on a nest. On 11 July 1984, there were 10 adults with a total of eight chicks. During a census of Lost Lake on 11 July 1986, I found 11 adults and at least 12 chicks. On 4 July 1998, I found one adult with no signs of nesting. Breeding records for other lakes included three adults with five chicks at German Lake 11 July 1986, a pair with two chicks on a pond along 250A Road (North Pine) on 16 July 1985, and one adult with two chicks at the north end of Boundary Lake on 15 July 1985. Two adults with two half grown chicks were seen at the north end of Charlie Lake on 17 July 1986 (Campbell and Petrar 1986).



Figure 59. At some locations in the North Peace River region, Red-necked Grebe uses the stems and leaves of the yellow pond-lily as a nesting platform on which to build its nest and lay its eggs. The dark-stained eggs indicate that the clutch is well incubated. *Photo by R. Wayne Campbell, near Goodlow, BC, 20 June 2004.*

Eared Grebe

Podiceps nigricollis

Status: *Common to very common spring and autumn migrant and locally abundant summer visitor; breeds.*

Not recorded by Williams (1933b), Cowan (1939), or Penner (1976). The colonial nester recently expanded its range north into British Columbia's Peace River area. Eared Grebe (Figure 60) was a well-established nesting species by the mid-1970s at Cecil Lake.

Habitat: Migration: Lakes and deep ponds. Breeding: Shallow sewage ponds and lakes with moderate to heavy growth of submerged vegetation as well as some emergent and surface vegetation.

Distribution: Migration: Ponds and lakes from Charlie Lake eastward to the Alberta border. Breeding: Eared Grebe colonies were found at two regular sites on Cecil Lake (Figure 61) and Boundary Lake (Figure 62). Occasionally much smaller numbers also nested on the north and south sewage lagoons in Fort St. John.

Occurrence: Spring: Nine arrival records (1981 to 1989) ranged from 17 April to 3 May, with six records between 22 and 28 April. The bulk of the population arrived after the first few arrivals. For example, the earliest birds in 1986 were two on Boundary Lake on 27 April. On 4 May, 18 birds were present in pairs, and on 11 May, 100 were seen from the south causeway. Summer: The earliest chicks were seen on 24 June 1984 (15 adults with young at Boundary Lake). The latest date for tiny chicks was 11 August 1986 at the north sewage lagoons in Fort St. John. Autumn: Eight autumn departure records (1981 to 1988) ranged from 13 September to 30 October, with five records between 9 and 30 October. The Eared Grebe became scarce after the ten-day period 10 to 20 September. Thereafter, mostly single birds were encountered.

Breeding: Birds formed pairs quickly after their arrival. Nest-building was seen as early as seven days (3 May 1987) after first arrival. The earliest

eggs found were 7 June 1985 but I strongly suspect eggs would have been laid two to three weeks earlier. The latest eggs were found in a nest at the north sewage lagoons in Fort St. John on 19 July 1985.

Nests were usually low, flat mounds of heaped aquatic vegetation in shallow water (Figure 63) or rarely constructed of stems and leaves of pond-lilies (Figure 64). Water depth at one Cecil Lake colony was estimated at one metre. Nests were commonly built within a few metres of each other in colonies. Colony size varied from fewer than 10 nests at the north sewage lagoons in Fort St. John to an estimated 5,000 nests around Cecil Lakes in June 1992. There were usually three to four eggs per nest. Rarely, a nest contained as many as six eggs.

At Cecil Lake, Eared Grebe nest in large groups in bays that provided some shelter from the wind, depending upon its direction. During periods of high water grebes sought out any substrate on which to anchor a nest (Figure 65). Since nests are little more than flat mounds of aquatic plants, wind appears to be a significant factor in swamping nests and causing eggs to wash off them.



Figure 60. Upon arrival at their breeding grounds in the North Peace River region, Eared Grebes must search for appropriate sites that provide a suitable anchor for their nests as well as protection from wind and storms. *Photo by R. Wayne Campbell, Cecil Lake, BC. 20 June 2008.*



Figure 61. When water conditions are favourable, and mats of surface aquatic plants provide a stable substrate on which to build nests, hundreds of Eared Grebes form dense colonies on Cecil Lake, BC, and are quite visible from shore. *Photo by Chris Siddle, 25 June 1988.*



Figure 62. The success of nesting Eared Grebes, even at traditional sites such as Boundary Lake, BC, varies greatly between years and in some years nesting may be abandoned. In 1996, however, they nested successfully at Boundary Lake as shown with 10 pairs on or at nests on 24 June. *Photo by R. Wayne Campbell.*



Figure 63. Three typical nest sites of Eared Grebes at Boundary Lake, BC, anchored by the stems of growing cattail or dense patches of surface aquatic plants. *Photo by R. Wayne Campbell, 24 June 1996.*



Figure 64. At some sites in the North Peace River region, Eared Grebes may place their nests on top of pond-lilies and use stems and leaves as nesting material. *Photo by R. Wayne Campbell, near Goodlow, BC, 20 June 1996.*



Figure 65. During years of unusually high water levels, Eared Grebes at Cecil Lake, BC, may use submerged branches to anchor their nests. *Photo by R. Wayne Campbell, 20 June 2008.*

Western Grebe
Aechmophorus occidentalis

Status: *Rare spring and autumn migrant and rare summer visitor.*

Not recorded by Williams (1933b). Cowan (1939) gives one record of 30 on Swan Lake from 7 to 9 May 1938. Penner (1976) found it as an occasional migrant along the Peace River in May 1975.

Habitat: Migration and Breeding: Lakes and occasionally sewage lagoons.

Distribution: Migration and Summer: The majority of sightings were from Charlie Lake. A few records were from Cecil Lake and the sewage lagoons in Fort St. John.

Occurrence: Spring: Eight arrival records (1980 to 1987) ranged from 1 May to 19 May. Typically spring numbers were small. The largest flocks were 10 birds on Charlie Lake on 6 May 1986 and 21 May 1984. Summer: Did not occur every year. Small numbers (one to three birds) occurred on Charlie Lake and more rarely on Cecil Lake. Autumn: Seven years (1982 to 1988) of latest autumn records ranged from 16 October to 7 November. The largest fall flock was of 14 birds on 7 October 1984 on Charlie Lake.

PELICANS

American White Pelican
Pelecanus erythrorhynchos

Status: *Casual vagrant.*

Not recorded by Williams (1933b), Cowan (1939), or Penner (1976).

Occurrence: Two records. Two pelicans were seen at the confluence of the Pine and Peace rivers on 14 May 1981 (Darren and Brad Culling pers. comm.) and a flock of 10 circled over Boundary Lake on 2 July 1997.

CORMORANTS

Double-crested Cormorant
Phalacrocorax auritus

Status: *Casual vagrant.*

Not recorded by Williams (1933b), Cowan (1939), or Penner (1976).

Occurrence: Three records. An immature was seen at the south end of Charlie Lake on 30 May 1981, an adult and an immature was at the Fort St. John north sewage lagoons on 13 June 1986, and an immature was seen on the Peace River, east of Lynx Creek, on 18 August 1986.

BITTERNS AND HERONS

American Bittern

Botaurus lentiginosus

Status: *Casual migrant and summer visitor; breeding suspected but not confirmed.*

Cowan (1939) recorded the American Bittern (Figure 66) almost daily at Swan Lake (South Peace), during May 1938, but only once (8 June 1938) near the south end of Charlie Lake in the North Peace River region.

Habitat: Migration and Summer. Cattail and bulrush marshes and swamps.

Distribution: Five records (1977 to 1984) from km 8 of the Upper Cache Road (east of the Halfway River), North Pine, Rose Prairie (likely a migrant), and twice at Boundary Lake.



Figure 66. As the North Peace River region becomes better investigated, American Bitterns are beginning to be recorded more often. *Photo by R. Wayne Campbell.*

Occurrence: Spring: No records. Summer: Two were standing in a ranch pasture at km 8 of the Upper Cache Road on 6 June 1984, one was flying over 248A Road marshes near North Pine on 4 August 1979, one was standing on the edge of a gravel road in the early morning at Rose Prairie on 28 August 1980, and single birds were seen at Boundary Lake on 30 June 1980 and 9 July 1981.

Breeding: Swamps and marshes in the area could provide suitable breeding habitat, especially at Boundary Lake.

Great Blue Heron

Ardea herodias

Status: *Rare spring and summer visitor.*

Not recorded by Williams (1933b) or Cowan (1939). Penner (1975) called it an uncommon summer visitor and gives three records of single birds: 31 May 1974 (Peace River), 14 May 1975 (Pine River), and 31 May 1975 (Peace River).

Habitat: Spring and Summer: Creek and river mouths, riverbanks, shallow lakes, and sewage lagoons.

Distribution: This species was most frequently seen along the Peace River at creek and river mouths at Farrell Creek, Halfway River, and Cache Creek. It was also seen at the north sewage lagoons at Fort St. John and Cecil Lake.

Occurrence: Twelve records fall into two groups: adults north of their mapped breeding range in spring and juveniles dispersing from colonies in July and August. Rumours of a small heronry on an island in the Peace River south of Taylor persist in the area but have yet to be confirmed. Spring: Records include two adults at the mouth of the Halfway River on 29 April 1979, one adult at Cecil Lake on 30 April 1989 and one 8 May 1980, one adult at Farrell Creek mouth on 5 May 1979, one adult along the Peace River five kilometres west of Cache Creek mouth on 7 May 1977, and one un-aged bird flying over north Fort St. John on 13 May 1988. Summer: single juveniles were recorded at the north

sewage lagoons in Fort St. John on 17 August 1984 and 21 August 1987 and two juveniles at the same location on 13 and 15 August 1988. Single un-aged birds were observed at Boundary Lake on 12 and 15 July 1999 (Don Cecile pers. comm.).

OSPREY, EAGLES AND HAWKS

Osprey

Pandion haliaeetus

Status: *Casual spring and autumn migrant.*

Not recorded by Williams (1933b), Cowan (1939), or Penner (1976).

Occurrence: Five sightings. One was observed at the south end of Charlie Lake on 4 and 9 May 1982, one flew over Beatton Provincial Park on 7 and 14 May 1983, and one flew over the north sewage lagoons in Fort St. John on 25 September 1988.

Comments: In the 1970s, a pair of Ospreys nested atop a power pole along Highway 29 south of Hudson's Hope near Cameron Lakes. However, the general turbidity of most waters in the North Peace River region probably prevents Ospreys from being able to spot fish clearly, hence the rarity of this species in the avifauna.

Bald Eagle

Haliaeetus leucocephalus

Status: *Uncommon spring and autumn migrant and summer visitor and rare winter resident; breeds.*

Williams (1933b) recorded two adults collected near the confluence of Cache Creek and the Peace River on 3 and 8 August 1930 and stated that the species was fairly common around Moberly Lake. Cowan (1939) recorded one at Swan Lake (South Peace region) on 5 May 1938. Penner (1976) called it a common breeding resident throughout the Peace River valley, and Blood (1979) stated that three nest sites could be found in the Sites C and E dam areas of the Peace River (the river valley from Hudson's Hope to the Alberta border).

Habitat: Migration: Occurred around marshes, ponds, or lakes and rivers. It has also been seen at shallow wetlands quick to thaw in the spring. Bald Eagles rested in nearby trees and waited to prey on migrant ducks. Breeding: Generally found around lakes and along rivers, with large trees and enough seclusion that the birds may nest undisturbed.

Distribution: Migration: Small numbers (usually <10 birds) were frequently recorded at the mouth of the Halfway River and around wetlands in the southeast part of the North Peace River region from Charlie Lake and the North Pine wetlands east to Boundary Lake (Figure 67). Breeding: An estimated six to 10 pairs nested along the Peace River from near Hudson's Hope to the Alberta border. Nest sites occasionally were located on an island in the Peace River just west of the mouth of Farrell Creek, on the north bank of the Peace River about one kilometre east of the mouth of the Halfway River, on an island in the Peace River opposite Old Fort, and on the west side of Cecil Lake. Two nests along the Peace River opposite Dry Creek may also have belonged to the Farrell Creek pair. In addition, nests were reported at Mile 20 and Mile 43 of the Peace River by Thurber Consultants. Another nest was located near the confluence of the Pine and Peace rivers (John Manley pers. comm.), and somewhere along the north shore of Charlie Lake. As well, a large nest at Boundary Lake probably belonged to the pair of Bald Eagles usually present around the lake. Winter: Rare along the Peace River from Hudson's Hope to the mouth of the Halfway River. Very rare in upland areas such as the Blueberry River near Buick Creek.

Occurrence: Spring: Since resident birds were present along the Peace River, arrival dates were calculated using only North Pine and Cecil Lake sightings. Eight arrival dates (1977 and 1983 to 1989) ranged from 4 to 23 April, with five dates between 4 and 17 April. Spring arrivals coincided with thawing of marshes and lakes. The shallowest marshes with their flocks of staging ducks attracted the first Bald Eagles to the uplands. In the Peace River valley, the largest single-day spring count was 11 eagles (five adults and six immatures) along

the Peace River from Lynx Creek to Bear Flat on 27 March 1983. In the uplands, the highest count was four eagles (three at Charlie Lake and one near North Pine) on 24 April 1988. Spring migration appeared to be over by the end of April. **Summer:** Juveniles have been seen with parents along the Peace River on 21 and 26 July. The single largest count was 11 eagles (three adults, three immatures, three juveniles, and two un-aged) along the Peace River between Farrell Creek and the Halfway River on 21 July 1992. **Autumn:** Small numbers remained around Charlie and Cecil lakes through late October and into early November. **Winter:** Small numbers wintered along the Peace River between Hudson's Hope and Taylor, and probably downstream from Taylor as well. One to three birds comprised single day winter counts.



Figure 67. Most Bald Eagle nests in the North Peace River region occur in mature riparian mixed woods along the Peace River. *Photo by R. Wayne Campbell, 29 June 1999.*

Breeding: Nest trees were usually located on a river island or along a lakeshore in a large, mature tree. The bulky stick nests were situated about 10 to 15

m above ground in the top of a large balsam poplar, with flight paths unobscured by branches. Nest trees were living and dead. Eagle pairs remained in the general vicinity of the nest throughout the year. An adult in the nest was seen as early as 23 February 1986 near the mouth of Farrell Creek. There were no observations of young in any nest due to canopy cover. An adult with two recently fledged juveniles was seen at Farrell Creek on 21 July 1992 and 26 July 1985. Also, on 21 July 1992, closer to the mouth of the Halfway River, another adult was seen with a juvenile which still showed traces of down on its shoulders.

Comments: Blood and Anweiler (1994) summarized conservation concerns for the Bald Eagle in British Columbia. Although the Bald Eagle, its nests, and eggs are protected in British Columbia by the provincial Wildlife Act, human disturbance at nest sites remains a problem, especially in remote areas like the North Peace River region where the public must be responsible for policing its own conduct. Most people do not realize that disturbance around a nest site may cause eagles to desert a nest, depending upon the season and the birds' habituation to humans. When food resources are scarce, as they may be at times along the Peace River, any disturbance of eagles may have a negative impact upon their energy balance. On the other hand, some human activities, like hunting, occasionally create feeding opportunities, such as game carcasses, for scavenging.

North Peace River region Bald Eagles are known to feed upon waterfowl, including those crippled by duck hunters. Lead shot, now illegal, may have poisoned eagles feeding upon dead or crippled waterfowl in the past. Lead poisoning from ingestion of shot is the most frequent form of toxicosis in southwestern British Columbia (Langelier et al. 1991 cited in Blood 1994).

Protection of riparian vegetation is crucial to the conservation of Bald Eagles because the species usually nests in large trees near bodies of water. The Site C dam would flood portions of the Peace River valley and would have an immediate negative effect upon several pairs, and drown much valuable year-round feeding habitat.

Northern Harrier

Circus cyaneus

Status: *Uncommon migrant and summer visitor; breeds.*

Williams (1933b) recorded the harrier several times in various locations from Swan Lake north to the Blueberry River. Cowan (1939) found it to be the “most abundant raptor” in the Peace River district. Penner (1976) classed it as a fairly common summer resident in the Peace River valley.

Habitat: Migration: Open areas including shores of large and small wetlands, agricultural fields, shrubby expanses, clear cuts, and seismic and transmission corridors. Breeding: Cattail and bulrush marshes (Figure 68), overgrown fields with patches of low shrubs, and possibly clear cuts and large transmission corridors with wetlands.

Distribution: Migration: Recorded across southeastern open agricultural areas of the North Peace River region. It is less commonly seen in migration over mixed forests to the west. Migration routes in the northern half of the region are not known. Breeding: Pairs, and presumably breeding, occurred at most wetlands in the North Peace River region including Charlie Lake, Cecil Lake, the 248A Road marshes, German Lake, and Boundary Lake. The status of this species in the Buick Creek area is not well known. It may also breed in wide clear cuts in northern forested regions.

Occurrence: Spring: Nine first spring arrival dates (1980 to 1988) ranged from 31 March to 14 April, with six dates between 4 and 12 April. The peak of spring migration occurred during the third and fourth weeks of April, when it was possible to see five to 10 harriers within a drive of about 50 km through the North Pine, Cecil Lake, or Boundary Lake areas. Males usually arrived before females, though not every year. For example, on 12 April 1985 the first harriers seen around Fort St. John were two females, followed by three males later the same day. Summer: Juveniles appeared independent of adults as early as early August. By mid-August harriers were more generally distributed across the

uplands and not restricted to wetlands though the largest numbers were still evident in the vicinity of wetlands. Southward migration usually commenced in mid-August. Autumn: Migration continued through September, with numbers declining through early October. A few were seen into early November some years. Ten final autumn departure dates (1975, 1979, 1980, and 1982 to 1988) ranged from 4 October to 7 November with five dates between 4 and 9 October and four between 27 October and 7 November.



Figure 68. Northern Harriers build their nests of coarse grasses and plant stems in a variety of wet and dry situations including bulrush marshes. *Photo by R. Wayne Campbell.*

Breeding: Late spring courtship displays and prey exchanges between pairs have been seen near most wetlands in the North Peace River region, indicating a fairly widespread breeding distribution where suitable habitat existed. A nest found on 10 June 1988 on the east side of Charlie Lake about 0.5 km north of Beaton Provincial Park contained five eggs (one pipped) and one downy chick. The nest was a low heap of dead fine grasses 10 m inside young woodland of aspen and a few alders adjacent to farm fields in a thin strip of young mixed riparian woodland and lakeshore. In the South Peace, but within about 25 km of Fort St. John in the Del Rio forestry area south of the Moberly River, Mark Phinney (1999) found a nest with five eggs on 8 June 1999. On 24 June when the nest was re-visited, one tiny chick and 4 eggs were found.

Sharp-shinned Hawk

Accipiter striatus

Status: *Rare spring migrant and summer visitor and uncommon autumn migrant; breeds.*

Williams (1933b) encountered one along the Blueberry River on 21 May 1922 and noted the species as “common” at Sunset Prairie, South Peace, at the end of August 1930. Cowan (1939) recorded two in the Dawson Creek-Tupper Creek area during May 1938. Penner (1976) regarded it as an uncommon summer resident along the Peace River valley.

Habitat: Migration: Migrants were seen flying over or perching in almost any habitat, but most frequently around woodland edges, in brushy fields, or frequenting the vegetated margins of marshes. Breeding: Habitat requirements are poorly known but breeding evidence was found in a grove of young lodgepole pine and trembling aspen on a grain farm.

Distribution: Migration: Widely distributed across the entire North Peace River region. Breeding: Recently fledged young were seen at Goodlow and a female was on territory in Beatton Provincial Park.

Occurrence: Spring: Rare in spring migration. There were 16 sightings for April and May versus 136 sightings for the period August and September. Five first arrival dates (1982 to 1985 and 1988) ranged from 14 April to 7 May. No peak in spring movement was clearly evident. Summer: Two recently fledged young were seen 21 July. The first appearances of southward-bound Sharp-shinned Hawks occurred from 31 July to 23 August. During most years sightings of one to two birds per day were recorded about mid-August. Sightings of three birds per day were made on nine occasions (1980 to 1988), ranging from 20 August to 16 September. The highest daily count was five hawks (from several locations) on 16 August 1987. Autumn: Seven dates of latest autumn departure (1981 and 1983 to 1988) ranged from 15 September to 18 October, with four dates between 20 September and 3 October.

Breeding: During the first half of May 1982, a female was seen a few times in a stand of mature white spruce at Beatton Provincial Park. This bird was considered to be on territory. The only definite evidence of breeding was of two recently fledged but dependent juveniles accompanied by an adult, in a woodlot of lodgepole pine and trembling aspen along 103 Road west of Clearview School, Goodlow, on 21 July 1987. Both juveniles had tails only half normal length and were quite noisy.

Cooper's Hawk

Accipiter cooperii

Status: *Very rare spring and summer visitor.*

Not recorded by Cowan (1939). Williams (1933a) mentioned two “doubtful” records, one for 12 May, 1922 on the British Columbia/Alberta border and the second for 16 May 1922 at Fort St. John. Penner (1976) recorded one in the Peace River valley but gave no site, date, or other details.

Occurrence: Six records. Spring: One record: an adult was flying over Peace Island Park, Taylor, on 28 May 1983. Summer: Five records: an adult was seen at km 10 of the Upper Cache Road on 15 June 1986, an immature was present at the north sewage lagoons in Fort St. John on 24 August 1986 (also seen by Jack Bowling, Joan Johnston, and Mike Force, pers. comm.), an immature was observed at Peace Island Park Road on 20 August 1987 (also seen by Tony Greenfield, pers. comm.), an adult female was flying over Boundary Lake on 19 June 1988 (also seen by Gerry Ansell, Mike Bentley, Tony Greenfield, Mike Toochin, and Sharon Toochin, pers. comm.), and an un-aged bird was seen at Taylor Landing Provincial Park on 12 June 1990 (R. Wayne Campbell pers. comm.).

Northern Goshawk

Accipiter gentilis

Status: *Rare to uncommon resident and irregular migrant; breeds.*

Williams (1933b) had four records for the Peace River block. Cowan (1939) saw the species twice, including an adult at Charlie Lake on 10 June 1938.

Penner (1976) termed it an uncommon summer resident in 1975 in the Peace River valley.

Habitat: Year-round. Frequents most forest types. During the non-breeding season it was often seen around edges of forest, muskeg, and sometimes brushy thickets amid agricultural fields. While breeding, the species has been recorded in associations of white spruce stands amid mature trembling aspen woods forest near water. It also frequented riparian wooded edges of white spruce, black spruce, and trembling aspen.

Distribution: Year-round. Found throughout the entire North Peace River region. This large accipiter was most frequently encountered in spring and summer around large wetlands such as Cecil and Boundary lakes where waterfowl appeared to be an important part of the hawk's diet. In late winter and early spring it was occasionally seen soaring over forests and breaks along the Peace River valley from Fort St. John to Hudson's Hope.

Occurrence: Northern Goshawk population varied dramatically from year to year. The number of observations per year in the North Peace River region from 1980 to 1988 totaled 135 sightings, with highs of 33 records in 1982, 35 in 1983, and 20 in 1984, and lows of four to nine records per year for 1985 through 1988. The years 1982 through 1984 accounted for 88 records (65% of all sightings), while only four records were made for all of 1985. Usually only one goshawk was seen per day. The highest counts were three birds on 7 March 1982 in the North Pine and Montney areas, and three birds on 27 November 1983 between St. John Creek and Rose Prairie. Spring: An adult was soaring above Mile 110, Alaska Highway on 24 March 1984 and over km 10 of the Upper Cache Road on 18 May 1980. An adult chased a female Northern Harrier flying over the 248A Road marshes near North Pine 25 April 1980 and an adult killed a Green-winged Teal at Cecil Lake on 1 May 1980. A territorial pair protested near a nest on 16 April 1979 at Stoddart Creek in Fort St. John. Summer: An adult was flushed from a Mallard corpse at Beatton Provincial Park on 5 June 1984. Two were seen at

Johnstone Road, Taylor, on 5 July 1982. Autumn: An immature was at Fort St. John on 10 October 1988, and adults were observed at Boundary Lake on 1 November 1981 and at Clayhurst ferry, Peace River, on 1 November 1981. Winter: An adult soared over the breaks near the Halfway River mouth along Highway 29 on 19 February 1984 and an adult was seen along 140 Road northwest of Charlie Lake on 30 January 1983.

Breeding: Aside from the territorial pair at Stoddart Creek on 16 April 1979, which had a nest in very similar habitat, another pair nested in Beatton Provincial Park in 1982. The nest was situated at the base of the crown in a main crotch of a living aspen about 16 m from the ground. The nest was slightly larger than that of an American Crow but smaller than that of a Red-tailed Hawk. The nest tree grew over a narrow woodland path between the surrounding mature aspen forest and a dense stand of old growth white spruce. An adult was incubating on 12 June and did not shift from the nest or vocalize when I was present, but on 22 June the female immediately left the nest and repeatedly dove at my head, driving me from the forest.

Comments: The Northern Goshawk may be the most commonly shot raptor in the North Peace River region mainly because it attacks poultry in rural areas. It is also shot for other reasons. During the third week of August 1977, an immature was shot when it persisted in attacking domestic cats in a wooded yard near Charlie Lake (Ed Zolinski pers. comm.). Another immature took up residence in the same yard on 5 September but the hawk's fate was not known. Northern Goshawks were also accidentally caught, and crushed in traps set for fur-bearing mammals (William Johnston pers. comm.).

Because of its aggressive nest defense, Northern Goshawk can be dangerous to hikers who unknowingly approach a nest. A teaching colleague was attacked from behind as he was carrying his infant son through the woodlands near the Halfway River in May or June of 1983. He was severely lacerated on the scalp and neck after being struck by a "strafing" raptor. The initial impact knocked his glasses off, rendering him even more defenseless,

and he was struck several times more as he tried to protect his son and locate his glasses. Eventually he had to seek emergency medical attention. Although he felt his avian attacker was a “Peregrine Falcon”, it was much more likely that it was a Northern Goshawk (Arliss Packer pers. comm.).

Broad-winged Hawk
Buteo platypterus

Status: *Rare migrant and summer visitor; breeds.*
Unrecorded by Williams (1933b), Cowan (1939) and Penner (1976).

Habitat: Migration and Breeding: Continuous forests, both mixed and deciduous, with openings and water nearby.

Distribution: Recorded mostly in the vicinity of Boundary Lake, Charlie Lake, and Johnstone Road (Taylor) with one sighting near Rose Prairie and another 20 km south of Buick Creek.

Occurrence: Spring: Seven earliest arrival dates (1981 to 1988) ranged from 27 April to 17 May. The largest number of birds involved in a single sighting was two adults at km 5 of Johnstone Road on 13 May 1982 (Greg Saxon pers. comm.). There was a cluster of six sightings from Charlie Lake in late April and early May (1981 and 1988) mostly from the west side of the lake and from Beatton Provincial Park. Summer: A territorial pair of adults circled over the forest north of the Charlie Lake golf course on 27 July 1988. Adults with juveniles were seen in mid-August. The species may depart the North Peace River region as early as August. An adult was seen at the Boundary Lake airfield 20 August 1986. Autumn: One record. A dark-phase bird was seen along the Mile 73 Road about 20 km south of Buick Creek on 27 September 1980, the latest departure date for the region.

Breeding: No nests (Figure 69) were found but a territorial pair was present north of the Charlie Lake golf course on 27 July 1988. Two adults, with two recently fledged young, were seen in the forest edge near Boundary Lake on 13 August 1986. An adult

and a dependent juvenile were also seen 6 km north of Rose Prairie on 13 August 1987.

Comments: Of 21 adults recorded in the North Peace River region, four (19%) were dark morphs, a form considered rare and most frequently seen in the extreme northwest of the Broad-winged Hawk’s breeding range in North America (Goodrich et al. 1996).



Figure 69. An old Broad-winged Hawk nest (centre top) in a trembling aspen forest. *Photo by R. Wayne Campbell, west of Fort St. John, BC, 23 June 1996.*

Swainson’s Hawk
Buteo swainsoni

Status: *Casual vagrant.*

Unrecorded by Williams (1933b) and Cowan (1939). Penner (1976) gave four records for 1974 (26 May to 18 June) of single birds flying over the south-facing slopes of the Peace River valley.

Habitat: Prairie grasslands and agricultural fields with copses.

Distribution: Individuals have only been recorded south of Beaton Provincial Park, near North Pine, and southwest of Cecil Lake.

Occurrence: Three records. Spring: An adult light-morph bird was found in a burned stubble field near North Pine on 9 May 1987. Summer: Two dark-morph and one light-morph bird were seen in agricultural fields along 271 Road, south of Beaton Provincial Park, on 3 June 1983 (Tom Plath and Mike Force pers. comm.). Autumn: A dark-morph adult was spotted southwest of Cecil Lake on 11 September 1983.

Comments: This species also occurs sparingly in the Peace River country of adjacent northwestern Alberta (Semenchuk 1992).

Red-tailed Hawk
Buteo jamaicensis

Status: *Common spring and autumn migrant and uncommon summer visitor; breeds.*

Williams (1933b) and Cowan (1939) found the Red-tail in “scattered pairs” throughout the area. Penner (1976) termed it a fairly common migrant and summer breeder along the Peace River.

Habitat: Migration and Breeding: Open areas such as fields and grasslands interspersed with groves or structurally similar features (after Preston and Beane 1993). In the North Peace River region the species was seen around mixed woodland edges next to farms, sewage lagoons, ponds in trembling aspen groves, and natural grasslands (“breaks”) on south-facing slopes/banks of the Peace and Beaton rivers (Figure 70).

Distribution: Migration and Breeding: Widely distributed throughout the North Peace River region.

Occurrence: Spring: Ten spring arrival dates (1976 and 1980 to 1988) ranged from 29 March to 19 April, with six dates between 3 and 12 April.

The peak of spring migration took place during the second and third weeks of April. Highest daily count was 14 birds (including 10 *harlani* types) in the North Pine-Rose Prairie-Montney area on 12 April 1986. Summer: Nesting pairs were scattered throughout area. Autumn: Eight departure dates (1980 and 1982 to 1988) ranged from 9 September to 31 October, with five dates between 28 September and 11 October. Peak of *harlani* types (all dark birds) passed through from mid-September to early October. Earliest appearing *harlani* type was seen 28 August.



Figure 70. Red-tailed Hawk frequents a wide variety of habitats during migration but favours mature pure and mixed woodlands, and infrequently cliff faces, where nests have been found. *Photo by R. Wayne Campbell, east of Fort St. John, BC, 8 June 2005.*

Breeding: Little data. One pair nested in a broken-off white spruce in a stand of spruce at Stoddart Creek (near Fort St. John) in April and May 1980. Another pair nested in a balsam poplar on the edge of a trembling aspen grove near the 248A Road marshes near North Pine on 20 Apr 1984.

Comments: As in most of British Columbia, summer Red-tailed Hawks appeared in a wide variety of different plumages from very white, little marked Krider’s type, through typical “Western” types to the very dark Harlan’s type. Intermediate types also occurred. Very white birds are more common in the North Peace River region than in southern areas of British Columbia.

Rough-legged Hawk

Buteo lagopus

Status: *Common spring and autumn migrant and rare winter visitor.*

Unrecorded by Williams (1933b) and Cowan (1939), whose investigations were carried out in spring and summer. Penner (1976) called it a rare migrant to the Peace River valley.

Habitat: Migration and Winter: Grasslands and agricultural fields (Figure 71).



Figure 71. During autumn migration, agricultural fields in the vicinity of North Pine, BC, attract foraging Rough-legged Hawks where they often perch on hay bales. *Photo by R. Wayne Campbell, 24 October 1991.*

Distribution: Migration and Winter: Widely distributed throughout the North Peace River region. Most frequently seen in farming areas.

Occurrence: Spring: Nine arrival dates (1980 and 1984 to 1989) ranged from 8 March to 14 April with six dates between 29 March and 12 April. Two February records probably represent wintering birds. Peak numbers occurred from 5 to 23 April with a high count of 31 in the North Pine area on 12 April 1988. Ten spring departure dates (1980 to 1989) ranged from 22 April to 10 May. In most years all birds had usually departed by the end of April, but in some years stragglers were still present in May. Autumn: Seven arrival dates (1981 to 1986 and 1988) ranged from 11 September to 7 October, with

five dates between 22 September and 7 October. In the North Peace River region, autumn counts were lower than spring counts. The highest count was of eight hawks between Fort St. John and Rose Prairie on 26 October 1985. Winter: A bird seen at Cecil Lake in December 1983 and February 1984 overwintered.

Comments: Gary S. Davidson (pers. comm.) reports that over-wintering individuals became more common around Fort St. John in the first decade of the twenty-first century.

Golden Eagle

Aquila chrysaetos

Status: *Uncommon spring and autumn migrant, summer visitor, and rare winter visitor; breeds.*

Not mentioned by Williams (1933b). Cowan (1939) stated that Golden Eagles were seen every few days during May 1938 at Tupper Creek and Swan Lake. Penner (1976) referred to this species as “occasional” to the Peace River valley and speculated that it nests on isolated cliffs in the area.

Habitat: Migration: Open areas in general as well as hillsides, river valleys, marshes, and wet fields where migrant waterfowl concentrated. Breeding: Along river valleys, especially those with vertical cliffs.

Distribution: Migration: Throughout the North Peace River region especially from the Upper Cache Road and Halfway River areas east across farmlands to Alberta. In spring, birds were attracted to wetlands. Breeding: Nesting at Bear Flat and Tea Creek ravine southwest of Grand Haven and likely elsewhere in cliffs along the Peace and Beatton rivers.

Occurrence: Spring: No arrival dates due to the presence of over-wintering birds. Winter: Seventeen records between 1981 and 1988 with no pattern of movement discerned.

Breeding: A few landowners living above the north bank of the Peace River valley knew of traditional

Golden Eagles eyries and took pride in preventing casual observers from disturbing the nests.

There are two breeding records. A nest built atop a steep ravine on the east side of Tea Creek was visited on 15 Jun 1983. It contained two downy chicks estimated to be four weeks old. In mid-July an eagle was still in this nest and the other fledgling was nearby but incapable of sustained flight (Brian Petrar pers. comm.). On 22 June 1996, this nest was revisited and contained a single half grown chick (R. Wayne Campbell pers. comm.; Figure 72). Campbell questioned the landowners and was told that the nest was well known locally and had been used for at least 60 years. In the spring of 1995 the adults raised two young.

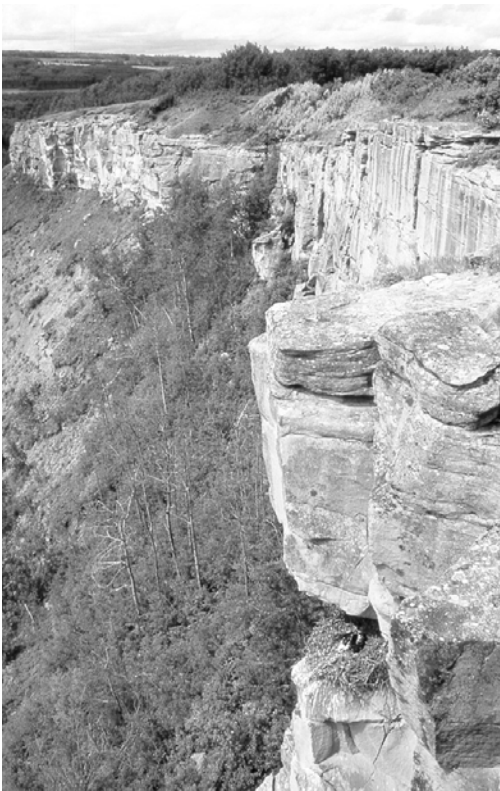


Figure 72. A well-feathered Golden Eagle nestling (lower right) in its stick nest on a cliff ledge near Tea Creek, BC. *Photo by R. Wayne Campbell, 22 June 2006.*

The second nest was on a south-facing cliff slope above Bear Flat (Figure 73). It contained a chick estimated to be about nine weeks old on 27 July 1983. In 1986 this nest held at least one tiny chick on 3 June, but was unused when the nest was checked in July 1997 and 1998.



Figure 73. The Golden Eagle nest site at Bear Flat, BC, is located on a cliff ledge (top right) and has been active since at least 1973. *Photo by R. Wayne Campbell, 18 June 1996.*

Comments: Late autumn and winter Golden Eagles will feed upon animal carcasses. On 11 November 1982, an adult fed on an unidentified ungulate carcass with 25 Common Ravens and two Black-billed Magpies along the Upper Cache Road. On 1 November 1986, at Two Rivers, a Golden Eagle breakfasted upon a buck Mule Deer (*Odocoileus hemionus*) that Gerry Paille (pers. comm.) had shot the evening before. The bird ate two to three pounds before flying off at Paille's approach.

FALCONS

American Kestrel

Falco sparverius

Status: *Uncommon to common spring and autumn migrant and uncommon summer visitor; breeds.* Williams (1933b) found the American Kestrel to be the commonest raptor in the Peace River Block "and very evenly distributed." Cowan (1939) found it widely distributed but "not abundant." Penner (1976) termed it a common summer resident along the Peace River valley.

Habitat: Migration: Open country, including agricultural and farm fields, open roadsides, natural grasslands, clear-cuts, and alpine tundra. In spring, it was often attracted to south-facing slopes and similar areas where snow melted earliest. Breeding: Edges of woodlands, usually associated with large snags which contain cavities for nesting. It also inhabited burned over areas and wooded copses in farm country.

Distribution: Migration: Generally distributed throughout open country in the North Peace River region. Breeding: Probably nested throughout the North Peace River region with broods seen at Taylor, the mouth of the Halfway River, and the old 103 Road over the Beatton River.

Occurrence: Spring: Ten earliest arrival dates (1976 and 1980 to 1988) ranged from 3 to 19 April, with eight sightings between 13 and 19 April. Roadside counts revealed that spring peaks in migration occurred between 20 April and 8 May. Summer: Nests containing chicks were present from mid-June to early July. Numbers increased through late July and August. Peaks in southbound migrants occurred between mid-August and mid-September. Autumn: The species was often scarce after mid-September. For example, in 1988, six were encountered along 103 Road between Fort St. John and Boundary Lake on 26 September. Ten latest departure dates (1976, 1979, 1980, and 1982 to 1988) ranged from 21 September to 20 October, with five dates between 1 and 11 October.

Breeding: Four nests (Figure 74) and six broods of recently fledged young were found. All nests were in dead snags, either on the edge of woodland or isolated in a clearing. Three of the cavities were old Northern Flicker nest holes. Active nests ranged from 14 June to 7 July. The earliest fledged brood was encountered on 8 July. Fledged broods were encountered most regularly between 11 and 30 July. Fledged brood sizes included two young (three broods), three young (one brood), and four young (two broods). Broods were often located in riparian areas where old-growth balsam poplars were evident. Presumably these gnarled giants had provided nest cavities.



Figure 74. American Kestrel responds favourably to nest box programs and may utilize the same site for many years. Photo by R. Wayne Campbell, Watson Slough (Bear Flat), BC, 28 June 2002.

Merlin

Falco columbarius

Status: *Uncommon migrant and summer visitor; breeds.*

Williams (1933b) mentioned one bird at Fort St. John on 7 July 1930. Cowan (1939) mentioned two sightings for the South Peace region. Penner (1939) called the Merlin an uncommon summer resident which breeds in the Peace River valley.

Habitat: Migration: Found in both open and wooded country. It frequents sewage lagoons and wetlands as well as agricultural fields and hedgerows. Breeding: Mixed forests along the banks of the Peace River (see Figure 21) as well as stands of spruce around Fort St. John, including at least one city park and woodland surrounded by open agricultural fields.

Distribution: Migration: This small falcon was recorded mostly from farming country around

Fort St. John east to the Alberta border. It was also found from Lynx Creek east to Clayhurst, and north along the Alaska Highway to Nig Creek. **Breeding:** Recently fledged young were seen east of Cecil Lake. Nests were reported by others from the Peace River downstream from Hudson's Hope, at Taylor, and Fort St. John.

Occurrence: Spring: Ten arrival dates (1980 to 1989) ranged from 26 February to 23 April, with six dates between 30 March and 17 April. Most Merlins appeared in mid-to-late April with the return of passerines upon which they prey. Summer: Fledglings were seen in mid-July. Merlins became more widespread and numerous, beginning in mid-August, and appeared around wetlands where they pursued shorebirds, and also around woodland edges and fields where they chased passerines. Autumn: Seven autumn departure dates (1980, 1982, and 1984 to 1988) ranged from 21 August to 29 October, with four dates between 15 and 26 September.

Breeding: Nested in the Peace River valley (Penner 1976, Blood 1979). Young were taken from nests at Taylor by high school boys for falconry in the late 1970s (Larry Thompson pers. comm.). A pair nested each year in a small stand of white spruce at Matthews Park, Fort St. John, during the 1980s (Mary Lee Webster and David Whiting pers. comm.). A recently fledged family of four juveniles, still possessing rounded wingtips, was seen at a aspen grove between Cecil Lake and Goodlow on 16 July 1983.

Comments: While most Merlins appeared to belong to the dark *columbarius* race, 24 of 75 observations where specific identification was made were of pale birds resembling *richardsonii*.

Merlins were observed chasing flocks of Lapland Longspurs on a number of occasions including 4 May 1985 near Beaton Provincial Park and 15 September 1984 at Nig Creek.

Peregrine Falcon

Falco peregrinus

Status: *Rare spring and autumn migrant; formerly a summer visitor and bred.*

Williams (1933b) noted a pair at "The Gates" on the Peace River upstream from Hudson's Hope on 1 July 1930 and another pair along the river near what is now the Clayhurst Bridge on 5 July 1930. Cowan (1939) recorded this species once at Swan Lake (South Peace region). Penner (1976) did not find it in the Peace River valley during 1975 fieldwork. Blood (1979) reported one on 14 July 1977 (location not given) for the Site C dam impact area.

Habitat: Migration: Mostly seen over lakes and wetlands where ducks and shorebirds congregated. Less frequent over fields in pursuit of migrant flocks of Lapland Longspurs. **Breeding:** Typically frequents and breeds in the interior of British Columbia along rivers with adjacent tall cliffs for nesting or on cliffs or crevices in large river islands.

Distribution: Migration: Eleven records. Recorded at Cecil Lake, Boundary Lake, 248A Road marshes near North Pine, north sewage lagoons in Fort St. John (most sightings, 45%), and over fields at 121 and 246 roads a few kilometres northwest of Fort St. John.

Occurrence: Spring: All nine spring records occurred between 23 April and 24 May. An adult chased Lapland Longspurs at 246 and 121 roads northwest of Fort St. John on 5 May 1985. Two appeared at the north sewage lagoons in Fort St. John on 23 April 1988. An adult was at Cecil Lake from 5 to 13 May 1982. Autumn: Two records. A migrating immature was seen over the north sewage lagoons in Fort St. John on 26 September 1988 and an adult was seen at Boundary Lake on 5 October 1985.

Prairie Falcon

Falco mexicanus

Status: Casual in spring and summer.

Previously unlisted for the North Peace River region.

Occurrence: Four sightings. One attacked an aggregation of waterfowl on a run-off pond about 0.25 km east of the junction of 252A and 259 roads, North Pine, on 25 April 1985, a male was flying along canyon cliffs in the Beatton River on 12 May 1988 (R. Wayne Campbell and Fred Harper pers. comm.), and individuals were identified near the north sewage lagoons in Fort St. John on 27 May 1989 and 7 July 1991.

RAILS AND COOTS

Yellow Rail

Coturnicops noveboracensis

Status: One record for the period 1975-1989.

Not previously listed for the North Peace River region.

Occurrence: A single bird was heard at Boundary Lake on 10 June 1989 (Wayne C. Weber pers. comm.) and confirmed by the author. It was vocalizing a "song" like tapping stones: *tap, tap, tap-tap-tap*. It continued calling for most of the evening. This constituted the first provincial record for this species.

Comment: Yellow Rails were discovered in the 1990s to occur rarely in summer at Swan Lake, South Peace, as well as the Del Rio area northeast of Chetwynd.

Sora

Porzana carolina

Status: Uncommon migrant and summer resident; breeds.

Williams (1933b) recorded one along the Pine River in August 1930. Cowan (1939) found it abundant at Swan Lake (South Peace region) and

also found a pair near Charlie Lake. Penner (1976) didn't mention it for the Peace River valley.

Habitat: Migration: Wetlands and marshes (Figure 75). Breeding: Sedge meadows and marshes as well as dense, marshy vegetation around dugouts, ponds, sewage ponds, and lakes.



Figure 75. Sedge marshes scattered throughout the North Peace River region are the preferred nesting habitat for Sora. Photo by R. Wayne Campbell, 1 June 1998.

Distribution: Migration and Breeding: Found in a variety of large and small wetlands throughout the North Peace River region.

Occurrence: Spring: Eleven arrival sightings (1977, 1978, and 1980 to 1988) ranged from 28 April (unusually early) to 17 May, with seven records between 3 and 14 May. The Sora, judging from vocalizations, appeared to become widespread from mid-to-late May. Summer and Autumn: Birds migrating at night were heard calling over Fort St. John during the first half of June. Soras were seldom recorded after the first week of September. Eight autumn departure records (1977 and 1982 to 1988) ranged from 25 August to 18 September.

Breeding: Chicks were seen on five occasions between 5 July and 3 August. An adult was watched collecting nest material (blades of sedges) at the north sewage lagoons in Fort St. John on 14 June 1987.

American Coot
Fulica americana

Status: *Common to occasionally very common migrant and common summer visitor; breeds.*

Williams (1932a) stated that a resident reported coots from ponds near Cache Creek. Cowan (1939) assigned no status but seemed to have found the coot a relatively common bird at Swan Lake (South Peace region). Penner (1976) found it only as an occasional migrant along the Peace River.

Habitat: Migration: Ponds, or rivers and lakes. Breeding: Fairly shallow ponds or lakes with emergent marsh vegetation. It conceals its floating nest among tall emergent marsh plants such as cattails and bulrushes (Figure 76).



Figure 76. At Cecil Lake, BC, American Coot prefers to nest in stands of dead cattail and frequently uses isolated tussocks to construct its nest. *Photo by R. Wayne Campbell, 22 June 2004.*

Distribution: Migration: Occurred throughout the North Peace River region. Breeding: Nests and /or broods were found along Highway 29 near Cache Creek, Charlie Lake, Fort St. John, North Pine, Cecil Lake, German Lake, and Boundary Lake.

Occurrence: Spring: Ten arrival records (1977 and 1980 to 1988) ranged from 10 to 28 April, with seven records between 10 and 20 April. Numbers built quickly after arrival with flocks reaching their maximum sizes about mid-May. At the north sewage lagoons in Fort St. John, for instance, six coots were found 16 April 1988 increasing to 80 birds on 21 April. Summer: Broods were in evidence from early July through the first half of August. Autumn: Numbers usually peaked during September or October. The largest concentrations occurred on Cecil Lake, Boundary Lake, Charlie Lake, and the north sewage lagoons in Fort St. John. The three largest single site counts were 1,000 coots at Cecil Lake on 5 September 1987, 500 at Cecil Lake on 2 September 1978, and 400 at Boundary Lake on 5 October 1986. Six final autumn departure dates (1982 and 1984 to 1988) ranged from 6 October to 5 November.

Breeding: At Cecil Lake a floating nest anchored to a small tussock of cattail (Figure 76) contained three eggs on 27 May 1976, the earliest date. Because both parents attend the chicks and at times “split” the brood between them, only broods attended by two adults are presented here. There were 33 such broods noted from 1 July to 13 August. Broods varied from one to 10 chicks (1Y-5 (Figure 77), 2Y-7, 3Y-8, 4Y-5, 5Y-6, 7Y-1, and 10Y-1) with 61% having two to four young.



Figure 77. Adult American Coot feeding a three-day old chick. *Photo by R. Wayne Campbell, Cecil Lake, BC, 4 July 2005.*

Comments: Of interest was a flock of 50 American Coots densely packed together to form a prominent “raft” swimming down the Peace River past the mouth of the Halfway River on 24 April 1982. The birds had massed together when frightened by a passing immature Bald Eagle. This predator-avoidance rafting is commonly seen on Okanagan Lake when Bald Eagles appear. Individual birds within the raft flock flap their wings rapidly, causing the mass of birds to appear as one large organism.

CRANES

Sandhill Crane *Grus canadensis*

Status: *Fairly common but local spring migrant, uncommon to occasionally common autumn migrant and casual summer visitor; may breed.*

Not recorded by Williams (1933b). Cowan (1939) recorded cranes (Figure 78) on 8 and 10 May 1938 at Swan Lake (South Peace region). Penner (1976) called it an uncommon migrant along the Peace River valley.



Figure 78. Part of the Sandhill Crane migration in North America passes through northeastern British Columbia and can be observed each year in the North Peace River region. *Photo by R. Wayne Campbell.*

Habitat: Migration: Frequents farm fields and shallow marshes. In autumn, crops like swathed barley attracted passing birds which can consume appreciable quantities of grain.

Distribution: Migration: Scattered records. The species occurred from the Peace River in the south to Nig Creek in the north, and from Hudson’s Hope

east to the Alberta border. Summer records are only from Boundary Lake.

Occurrence: Spring: Six arrival dates (1980 to 1982, 1985, 1988, and 1989) ranged from 24 April to 9 May. The passage of northbound migrants was completed by mid-May. Penner (1976) recorded cranes in the Peace River valley from 4 to 14 May. Spring migration was light with few birds seen. The largest numbers reported were two flocks totaling 60 birds seen on the eastern edge of Fort St. John on 24 April 1988 (Bruce Cummings pers. comm.). Summer: Two records for Boundary Lake: a bird on 6 June 1982 and two adults on 14 June 1985 (Colin Butt pers. comm.). It is suspected to have nested north of Cecil Lake but details were not confirmed (John Elliot pers. comm.). Autumn: Appeared in the first half of September. Six autumn arrival dates (1979, 1982, 1984 to 1986, and 1988) ranged from 8 to 19 September. Sandhill Cranes appeared in much larger flocks in autumn. The three largest single site counts were 2,000 around Cecil Lake on 19 September 1985 (Andy Wiens pers. comm.), 1,000 at a farm north of Cecil Lake on 18 September 1988 (Wayne Friesen pers. comm.), and 500+ at Nig Creek farms on 15 September 1984. Residents of Nig Creek reported that over 1,000 had been present about 8 September. A day of heavy crane flights occurred on 19 September 1985. Four hundred were reported at Baldonnel (William Sutton pers. comm.), 100 were seen over Fort St. John (Joan Johnston pers. comm.), and hundreds were estimated in flock after flock at Boundary Lake (Rich Peterson pers. comm.). Eight autumn departure records (1977, 1981, 1982, and 1984 to 1988) ranged from 16 September to 2 November, but the later date represented a straggler. Most cranes had usually departed by mid-October.

PLOVERS

Black-bellied Plover *Pluvialis squatarola*

Status: *Rare to occasionally uncommon spring migrant and uncommon autumn migrant.*

Previously unlisted for the North Peace River region.

Habitat: Migration: Most commonly found around sewage lagoons, where it occurred on dried mud flats or in the surrounding fields. The species was also occasionally encountered in dry fields around Fort St. John, among grass tussocks and mud flats at Boundary Lake, and a pebbly embankment and the gravel pan at the bottom of a drained pond at Charlie Lake. It was recorded once on a patch of burned grass, habitat favoured by American Golden-Plovers in spring.

Distribution: Migration: Seen only in the southeast of the region, mostly at the north and south sewage lagoons in Fort St. John with scattered records from Charlie Lake, Cecil Lake, and Boundary Lake.

Occurrence: Spring: Eight records of earliest arrival (1977, 1980, 1982 to 1986, and 1989) ranged from 11 May to 29 May, with five records between 14 and 23 May. Spring numbers were small, averaging two birds per sighting. The largest spring flock was of five birds in a disked field near the north sewage lagoon in Fort St. John on 17 May 1985. In 1981, 1987, and 1988, Black-bellied Plovers (Figure 79) were not recorded in May. Four spring departure dates (1980, 1983, 1984, and 1986) ranged from 25 May to 6 June. Summer and Autumn: A bird with a crippled foot provided the only June record later than 6 June, the previous latest departure date. It lingered at the north lagoons from 18 to 30 June 1987. Eight southbound arrival dates (1977, 1980, and 1983 to 1988) ranged from 10 July to 14 September. There were only two July records in total. There were four early arrival dates for August: 7 August to 28 August. About 36 percent of all records (*e.g.*, 31 of 86) were from September. The species was most commonly detected during the summer and autumn of 1986 when I had taken a leave of absence which permitted time to check the north lagoons on an almost daily basis. The two largest southbound flocks were seen at this time: 22 birds on 22 September 1986 and 34 birds on 15 August 1986, both at the north lagoons. Eight final dates (1980 and 1982 to 1988) ranged from 18 September to 21 October, with five dates between 2 and 21 October.



Figure 79. Previously not recorded for the Peace River region of British Columbia, Black-bellied Plover is now an uncommon spring and autumn migrant through the North Peace River region. *Photo by R. Wayne Campbell.*

American Golden-Plover
Pluvialis dominica

Status: *Uncommon to occasionally common spring migrant and uncommon to occasionally fairly common autumn migrant.*

Numbers vary from year to year, depending, perhaps, upon weather and possibly other factors. Not previously mentioned for the North Peace River region.

Habitat: Migration: In spring, this species was seen in fields, especially those recently burned. The species frequently congregated in such places, sometimes with Pectoral and Baird's sandpipers. In spring and autumn, it also favoured fields where earthworms were found as well as ploughed and disked fields. It was also recorded on dry mud flats and fields around sewage lagoons, and among grass tussocks and mud along shallow lakeshores. Sometimes birds were seen on school playing fields, especially in autumn.

Distribution: Migration: Generally occurred in the Fort St. John area. It was also seen at Charlie Lake, and rarely in the Montney and North Pine areas and was occasionally found at Cecil Lake and Boundary Lake.

Occurrence: Spring: Ten arrival dates (1980 to 1989) ranged from 8 May to 19 May, with eight dates between 8 and 12 May. Spring numbers were variable from year to year, with single site counts as low as one bird, to highs of 160 in 1981, 55 in 1985, and 50 in 1989. Spring departure records (1980 and 1982 to 1989) ranged from 12 to 30 May, with five records between 21 and 30 May. Summer: There are two late June and two mid-July sightings, all of apparent adults. Autumn: Five records of earliest “fall” arrival (1984 to 1988) ranged from 20 August to 3 September. Early sightings were of one to five birds per site. Although records are few, there was a possible autumn peak in numbers in mid-September when flocks of 15 to 40 birds were seen, all at the north sewage lagoons in Fort St. John, in the autumns of 1986 and 1988. Eight departure sightings (1980 and 1982 to 1988) ranged widely from 7 September to 2 October. During the autumn of 1986, when I was enjoying a leave of absence from work, I saw American Golden Plovers on 19 occasions from 15 August to 2 October around Fort St. John, especially at the north and south sewage lagoons. The final sighting that year was of two adults and a juvenile at the North Peace Secondary School playing fields on 2 October 1986.

Semipalmated Plover
Charadrius semipalmatus

Status: *Uncommon spring and autumn migrant.*

Not recorded by Williams (1933b). Cowan (1939) described it as present in small numbers or pairs at Tupper Creek. Penner (1976) listed the Semipalmated Plover (Figures 80 and 81) as a migrant along the Peace River valley.

Habitat: Migration: Mud flats at sewage lagoons, sandy and pebbly lakeshore, and in one case a dry school field.

Distribution: Migration: Most records came from the sewage lagoons in Fort St. John and the shores around Boundary Lake. It occurred very frequently at the south end of Charlie Lake, but that site was drained in the early 1980s. Occasionally the species occurred on beaches elsewhere around the lake.

Other sites where it was seen at least occasionally include a pond along Highway 29 near Cache Creek, the North Pine marshes, Cecil Lake, backwaters along the Peace River at Taylor, and Fort St. John. In the western part of the area, sightings came from the Peace River about one km east of Lynx Creek.

Occurrence: Spring: Ten arrival dates (1980 to 1989) ranged from 26 April to 9 May, with seven dates between 26 April and 4 May. North Peace River region arrival dates match well with those given for Alberta: 27 April to 7 May (Pinel et al. 1991). The species was frequently seen throughout May. From 1975 to 1990, there are only six records of spring flocks larger than 10 birds. The largest single location record is of 100 plovers at the north sewage lagoons in Fort St. John on 24 May 1986. Nine spring departure records (1980 and 1982 to 1989) ranged from 28 May to 9 June. There was one sighting for 15 June 1986. Summer: Eight southbound arrival dates (1982 to 1988, 1991, and 1998) ranged from 21 June to 16 July. In late June, small numbers were observed occasionally, but not every year. Birds did not appear regularly until early or mid-July. The species was slightly more numerous in autumn than in spring. The two largest flocks were 64 birds at Cecil Lake on 21 August 1980 and 100 birds at the North Pine marshes on 20 August 1978. Eight last dates of autumn departure (1980 and 1982 to 1988) ranged from 2 to 21 September. In Alberta, most birds leave by mid-September (Pinel et al. 1991).



Figure 80. In spring, Semipalmated Plover passes through the North Peace River region as an uncommon migrant in full breeding plumage. *Photo by R. Wayne Campbell.*



Figure 81. In late summer and early autumn, Semipalmated Plover is an uncommon migrant in the North Peace River region and passes through in its less spectacular non-breeding plumage. *Photo by R. Wayne Campbell.*

Comments: See Campbell et al. (2004) for a summary of the status and biology of the Semipalmated Plover in British Columbia and recent records for the North Peace River region.

Killdeer

Charadrius vociferous

Status: *Uncommon to occasionally common spring and autumn migrant and summer visitor; breeds.*

Williams (1932) considered the Killdeer (Figure 82) rare in the Peace River Block. Cowan (1939) found only two pairs at Tupper Creek and stated that it apparently nested at Charlie Lake. No status was assigned. By the 1970s, it was reported more frequently. Penner (1976) found it a common summer resident in the Peace River valley.

Habitat: Migration and Breeding: Marshes, fields adjacent to water, sewage lagoons, lakeshores, open river banks, open areas around ponds, and farm yards.

Distribution: Migration and Breeding: Widespread across the agricultural areas in the southern half of the region. Breeding: Nests were found at the north sewage lagoons in Fort St. John and Boundary Lake. Unfledged chicks were observed at km 7 of the Upper Cache Road, Charlie Lake, the north

and south sewage lagoons in Fort St. John, and Boundary Lake.

Occurrence: Spring: One of the first migrants to arrive in the North Peace River region. Eleven early arrival dates (1976, 1977, and 1980 to 1988) ranged from 22 March to 14 April. Only once was a very large single flock observed in early spring: 200 birds on the ice of Cecil Lake on 30 April 1989. All other spring records were of one to 23 birds. Peak passage probably occurred in late April and early May. Summer: Sightings of tiny chicks ranged from 5 June to 20 July. Numbers of Killdeer increased in late June when over 20 were sometimes found at the north sewage lagoons in Fort St. John. Aggregations of 20 to 40 birds were sometimes seen from early to mid-August. Autumn: Killdeer became rarer as September passed, but a few lingered into October during warm autumns. Nine latest departure dates (1980 to 1988) ranged from 6 September to 19 October.

Breeding: Two nests were found. The north lagoons nest held four eggs on 6 and 20 June 1983. The Boundary Lake nest held four eggs on 10 June 1989. Both nests were located on the sides of little-used roadways. There were nineteen sightings of chicks, usually attended by one or two adults. These ranged from 5 June to 20 July for tiny chicks. Back-dating suggests that clutches were initiated from the second week of May to the third week of June.



Figure 82. Killdeer is the only plover that breeds in the North Peace River region. *Photo by R. Wayne Campbell.*

STILTS AND AVOCETS

American Avocet

Recurvirostra americana

Status: *Very rare spring vagrant.*

Previously not mentioned for the North Peace River region.

Occurrence: Nine records between 5 and 28 May, all from the sewage lagoons in Fort St. John except for two birds at Cecil Lake on 6 May 1988 (R. Wayne Campbell pers. comm.). This shorebird was first seen at the north lagoons on 23 May 1983. The largest count was 19 on 11 May 1988.

SANDPIPERS, PHALAROPES AND ALLIES

Spotted Sandpiper

Actitis macularius

Status: *Common spring and autumn migrant and summer visitor; breeds.*

Williams (1933b) called Spotted Sandpiper

(Figure 83) the commonest shorebird in the Peace River Block. Cowan (1939) called it abundant at least in migration at Swan Lake, South Peace. Penner (1976) called it a very common migrant and summer breeding resident in the Peace River valley.

Habitat: Migration and Breeding: Occupies almost all habitats near water (Oring et al. 1997) including lakeshores, river banks, sewage lagoons, streams, and ponds. It also nested in edge habitat including gravel bars, grassy margins, edges of clearings, edges of trails, and roads through woodlands.

Distribution: Migration and Breeding: Widely distributed across the North Peace River region.

Occurrence: Spring: Nine first arrival dates (1980 to 1988) ranged from 8 to 14 May. Spotted Sandpipers became widespread from mid-May onwards. There was one sighting of a flock of 11 migrants along the shore of Charlie Lake on 19 May 1987. Cowan (1939) reported the species became abundant at Swan Lake on 30 May when 100 birds in flocks of five to 20 were seen feeding on the east shore. Summer: See



Figure 83. Spotted Sandpiper is the most widely distributed shorebird in British Columbia including the North Peace River region. *Photo by R. Wayne Campbell, near Fort St. John, BC, 18 June 2004.*

Breeding. Autumn: Eight last dates of departure (1980 to 1988) ranged from 3 to 28 September.

Breeding: Seventeen nests were found from 1976 to 1992. Fourteen full clutches (Figure 84) were found between 2 and 20 June. Five nests found by Cowan (1939) at Charlie Lake between 8 and 10 June 1938 also fall within this window, each containing four eggs. The latest full clutch in the North Peace River region was found was 7 July. The eggs hatched the next day. Fifteen nests held four eggs, one nest had only one egg, and the final nest held three sandpiper eggs and one Brown-headed Cowbird egg (see Siddle 2008). Broods of tiny downy young were encountered from 28 June to 20 July. Of fifteen broods, seven were of one chick, two were of two chicks, and six were of three chicks. Nests were located in both open and edges of forested sites. Three nests were in grass and forbs on the edges of dikes at the north sewage lagoons, five were along trails and an abandoned roadway in deciduous woodland, three were in grasses in a field, and one was in a dandelion patch on a gravel bar at the mouth of a creek. All nests were associated with water that was five to 50 metres away from the nest.



Figure 84. Most Spotted Sandpiper nests found in the North Peace River region contained a full complement of four eggs. *Photo by R. Wayne Campbell, near Hudson's Hope, BC, 8 July 1999.*

Solitary Sandpiper

Tringa solitaria

Status: *Uncommon spring and autumn migrant and local uncommon summer visitor; probably breeds.*

First encountered in the Peace Block by Williams (1932) who found individuals at Fort St. John on 16 May 1922, and two birds about 10 miles south of Hudson's Hope on 25 July 1929. Cowan (1939) called the Solitary Sandpiper (Figure 85) an abundant migrant at Swan Lake, South Peace. Penner (1976) listed it as a spring migrant for the Peace River valley.

Habitat: Migration: Puddles (even on forest trails), melt-water ponds in fields, ditches, bogs, wooded swamps, muskegs, shallow lakeshores and sewage ponds. It often occurred at smaller water bodies than most other shorebirds, but appeared in extensive wetlands near other species at the height of its migration. Breeding: Muskegs, wooded swamps, and beaver ponds.



Figure 85. Nests, and even newly hatched chicks, of Solitary Sandpiper are difficult to find so breeding for the North Peace River region remains to be confirmed. *Photo by R. Wayne Campbell, Johnson Creek, BC, 22 June 2003.*

Distribution: Migration: Occurred throughout the North Peace River region. Likely has nested at German Lake, Boundary Lake, at Mile 115 (Alaska Highway) and Highway 29 west of Cache Creek bridge. Breeding: Probably also nested at water bodies in the northern half of the North Peace River region.

Occurrence: See Figure 86 for migration phenology (dates of occurrence and period of passage) and relative abundance. **Spring:** Ten arrival dates (1980 to 1989) ranged from 26 April to 9 May, with seven dates between 29 April and 6 May. It arrived singly, not in flocks. The Solitary Sandpiper was first encountered by Cowan (1939) on 7 May 1938 at Tupper Creek, South Peace. It became widespread, though nowhere plentiful, toward the end of the first week and through the second week of May. In the North Peace River region, birds also appeared at this time at sites like the muskegs around German Lake where they probably nested. Spring departure sightings (1980 to 1988) for individuals passing through the North Peace River region ranged from 14 to 25 May. **Summer:** One of the very first shorebirds to re-appear after presumably breeding; migrants may be found as early as mid-June. Seven “fall” arrival dates (1980, 1982, and 1984 to 1988)

ranged from 18 June to 13 July, with four dates between 18 June and 7 July. Numbers sometimes increased rapidly in late June in favoured sites like the north sewage lagoons in Fort St. John. A drawdown of a sewage cell there in June 1987 led to a high concentration of birds from 24 June to 18 July. Daily counts ranged from two to 30 birds, with the four highest counts eight birds (24 June), thirty birds (27 June), twenty-five birds (29 June), and 14 birds on 18 July. **Autumn:** Southbound migration peaked between 11 and 26 August. Eight latest records (1979, 1980, 1982, and 1984 to 1988) ranged from 26 August to 20 September, with seven dates between 26 August and 5 September.

Breeding: Likely breeds but definitive evidence is lacking. Displaying or agitated pairs in muskeg habitats suggest pair bonding and likely breeding. Adults were seen in display flight at German Lake

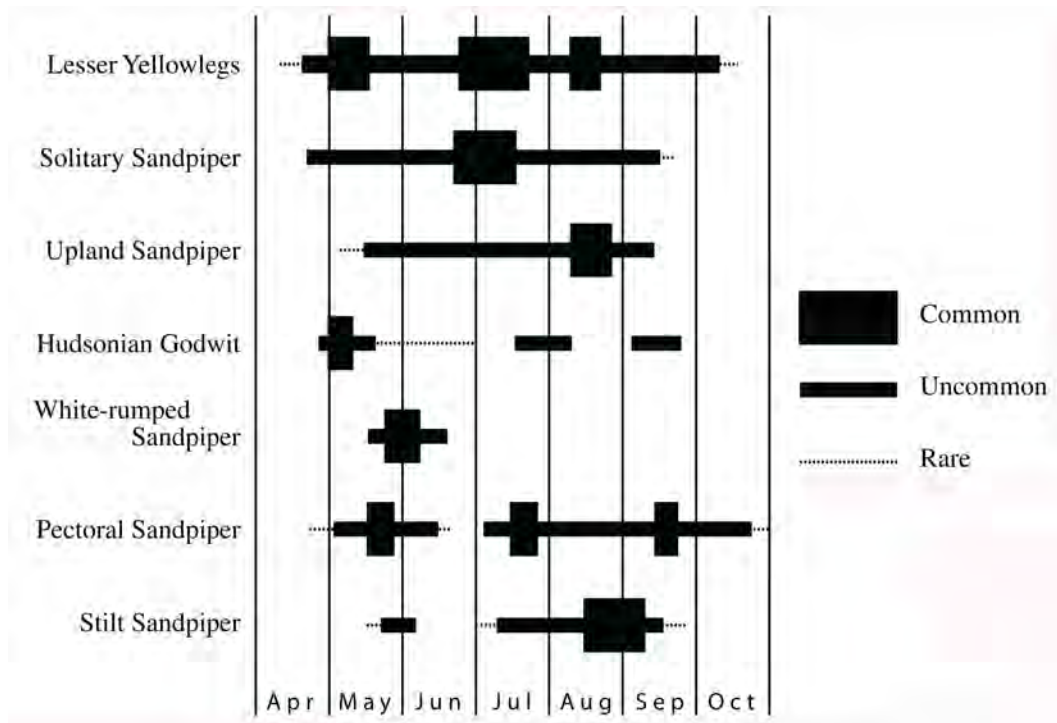


Figure 86. Phenology and relative abundance for seven common shorebirds which occur in the vicinity of Fort St. John, BC. Reprinted from Siddle 2005.

on 11 June 1989, at Boundary Lake on 10 June 1984 and 23 June 1985, at Mile 115 on 23 June 1984, and at ponds near Cache Creek on 11 June 1983.

Comments: Illegal waste oil dumping at the north and south sewage lagoons in Fort St. John probably killed some birds. One very badly oiled individual was at the sewage lagoons in Taylor on 29 August 1982.

Greater Yellowlegs *Tringa melanoleuca*

Status: *Rare to occasionally uncommon spring and autumn migrant; possibly breeds.*

Cowan (1939) found several pairs at Swan Lake, South Peace, when he arrived in early May 1938. Although he expected them to breed, all had moved on “within a day or two after May 27.” Migrating flocks were also noted. Apparently the Greater Yellowlegs was more common at least at that locality than it is today. Penner (1976) listed it as occurring as a migrant along the Peace River on the strength of Cowan’s report.

Habitat: Migration: A wide variety of shallow water habitats such as ponds, river shores, lake shore, marshes, wooded swamps, sewage lagoons, and run-off ponds in fields. Breeding: Beaver ponds and wooded ponds.

Distribution: Migration: Widespread. It is seen at Hudson’s Hope and Farrell Creek, km 10 of the Upper Cache Road, Cache Creek at Highway 29, Charlie Lake, North Pine, Cecil Lake, and Boundary Lake. The species is observed most frequently at the north and south sewage lagoons in Fort St. John. Breeding: Possibly in the Hudson’s Hope area.

Occurrence: Spring: Eleven arrival dates (1977, 1979, 1980, and 1982 to 1989) ranged from 10 April to 5 May, with seven records between 10 and 24 April. These occurrences varied in frequency from year to year. From 1983 to 1988, April and May occurrences varied from lows of one sighting in 1986 and 1987 to highs of 13 sightings in 1985, with an average of six spring records per year.

The highest single site count was of 12 birds on 19 April 1985 at the north sewage lagoons in Fort St. John. No peak was obvious. Spring departure dates (1983 to 1985 and 1988) ranged from 11 to 25 May. Summer: Early June sightings are few. Autumn: Migration appeared to begin in late June or early July. Five “fall” arrival dates (1984, 1986 to 1988, and 1997) ranged from 20 June to July 14. Numbers of birds per site were very small, usually one or two birds. Four autumn departure records (1985 to 1988) ranged from 23 August to September 19.

Breeding: Two sightings from the North Peace River region suggested at least occasional nesting within the region. On 16 May 1976, a very aggressive, agitated adult repeatedly attacked observers at a small pond on the south side of the Peace River opposite Hudson’s Hope. Also, on 22 May 1983, a pair was seen at a beaver pond along Highway 29 about one km west of the bridge across Cache Creek.

Willet *Tringa semipalmata*

Status: *Accidental.*

Previously unmentioned for the North Peace River region.

Occurrence: One record. A Willet appeared on the beach at Beatton Provincial Park (Charlie Lake) on 18 and 19 May 1984. A photograph of the bird appears as Figure 106 in Campbell et al. (1990a).

Lesser Yellowlegs *Tringa flavipes*

Status: *Common spring and late summer to autumn migrant and uncommon summer visitor; breeds.*

Cowan (1939) called the Lesser Yellowlegs (Figure 87) an abundant breeding bird throughout the Peace District. Penner (1976) listed it as uncommon in the Peace River valley.

Habitat: Migration: Shallows and muddy edges of run-off pools in fields, some ditches, and even roadways in wet weather, sewage lagoons, marshes,

ponds, shallow lakeshores and shallows along the Peace River. **Breeding:** Wooded farm ponds, beaver ponds, swamps, sewage lagoons, and shallow lakes.

Distribution: **Migration:** Widespread, wherever suitable habitat existed. **Breeding:** Confirmed breeding at Cecil Lake and the sewage lagoons in Fort St. John. Agitated adults during the breeding season have been seen near Hudson's Hope, along the Upper Cache Road, at German Lake, and Boundary Lake.

Occurrence: See Figure 86 for migration phenology and relative abundance. **Spring:** Ten earliest arrival dates (1980 to 1989) ranged from 17 to 27 April, with six dates between 20 and 26 April. Spring migration usually peaked during the first two weeks of May. Single site high counts ranged from 200 to 1,000 birds and included the following counts at a shallow bay at the northwest corner of Cecil Lake, a prime location: 400 birds on 8 May 1980, 500 on 10 May 1982 and 1,000 on 4 May 1981. Spring migration diminished rapidly after mid-May but continued with small numbers (10 to 40 birds per site) until about the last week of May. Very small numbers of summer visitors or nonbreeders remained at most sites through late May and June. **Summer:** Five first arrival dates of southbound birds ranged from 21 to 30 June. These arrivals usually became most obvious at the north or south sewage lagoons in Fort St. John where yellowlegs numbers suddenly increased from 10 to 40 or more birds. The most dramatic first "autumn movement" count was of 150 yellowlegs at the north lagoons on 29 June 1986. Counts of 100 to 400 often occurred in late June or early July and represented an early peak of adults migrating south. Large numbers, from 100 to 200 birds also occurred between 10 and 25 July and 10 and 22 August. Juveniles mainly comprised the latter range. The largest single site counts after early July were 400 at Boundary Lake on 20 July 1992, 275 at the north lagoons on 25 July 1987, and 1,000 along the east side of Cecil Lake on 16 August 1977. In most years, 10 to 30 birds per site were frequently encountered through the fourth week of August. **Autumn:** In some years numbers dwindled

quickly in very early September, as in 1988 when 30 were at Beatton Provincial Park on 3 September, but only one to six birds were seen per site thereafter until final departure on 26 September. Seven last autumn departure dates (1982 to 1988) ranged from 8 September to 21 October, with four dates between 22 September and 21 October.

Breeding: Two records. On 4 July 1980, a pair of agitated adults with a week-old chick were seen on the west side of Cecil Lake in an area of grain fields where trembling aspen forest with scattered white spruce bordered cattle pastures. On 11 July 1983, another pair with a chick of similar age was seen at the north sewage lagoons. The lagoon complex was surrounded by grain fields but trembling aspen swamps were within 0.5 km.



Figure 87. The Lesser Yellowlegs is a common migrant and local summer visitor in wetland habitats throughout the North Peace River region. *Photo by R. Wayne Campbell, Kiskatinaw River, BC, 21 June 2006.*

Upland Sandpiper
Bartramia longicauda

Status: *Rare spring and mid-summer migrant; probably breeds.*

Not recorded by Williams (1933b). Cowan (1939) called Upland Sandpiper (Figure 88) a scarce breeding resident around Tupper Creek, South Peace. Not recorded by Penner (1976).



Figure 88. Although locally distributed in the North Peace River region, Upland Sandpiper often calls from fence posts, telephone poles, and wires when on territory. *Photo by R. Wayne Campbell, near Hudson's Hope, BC, 15 June 1996.*

Habitat: Migration: Open fields, roadside edges through open habitat. On 8 May 1985, Upland Sandpipers appeared with American Golden-Plovers on recently burned-off agricultural fields. Breeding: Fallow fields in a state of open and brushy early succession.

Distribution: Migration: In spring migration this species occurred in the eastern half of the North Peace River region, near Stoddart Creek due north of Fort St. John, the 248A Road marshes near North Pine, and twice in fields along 101 Road near 244B and C roads north of Fort St. John. High counts for migrants were three with American Golden-Plovers along 101 Road on 8 May 1985. Summer: More widespread and frequent in summer than in spring. Southbound migrants were recorded from 25 miles east of the Mile 73 Road, Beatton Provincial Park, the junction of 267 and 121 roads northwest of Fort St. John, the north and south sewage lagoons in Fort

St. John, Mile 49 (Alaska Highway), 112 Road south of North Pine, Cecil Lake, and Goodlow. All these records were from open, usually agricultural country. Breeding: Presumed, but very local. Family groups or pairs have been seen a few kilometres south of the bridge at Clayhurst, a few kilometres north of the community of Clayhurst, and in a fallow pasture along 229 Road about three kilometres north of 103 Road in the Goodlow area.

Occurrence: See Figure 86 for migration phenology and relative abundance. Spring: Only seven records, all in May. Four records of early arrival (1985 to 1988) ranged from 8 to 13 May. Territorial courting birds have been found along 229 Road, Goodlow on 15 May 1988. No records of obvious migrants later than 17 May in the North Peace River region. Summer: Southbound migrants passed through the North Peace River region as early as mid-July. First "fall" arrival dates (1987, 1988, and 1992) ranged from 16 to 21 July but migration was sparse. The best year was 1987 with four sightings. Migration was noticeable again in mid-August. The year with the highest counts was 1987 with nine separate August sightings. The highest single site count was five birds on 14 August 1988 at the north sewage lagoons in Fort St. John. Six dates of autumn departure (1982 and 1984 to 1988) ranged from 20 August to 9 September.

Comments: The Upland Sandpiper has recently been found breeding near Chetwynd, south of the study area (Campbell 2004) and southwest of Dawson Creek (R. W. Campbell pers. comm.).

Whimbrel

Numenius phaeopus

Status: *Very rare late spring migrant.*

Not reported by Williams (1933b). Cowan (1939) hypothesized that curlews reported from Bear Flat prior to his Peace River visit in 1938 were Whimbrels. Not reported by Penner (1976).

Habitat: Migration: Mudflats bordering sewage lagoons, ploughed fields, and wet dirt roads during rain storms.

Distribution and Occurrence: Three records. Spring. One bird was at the south end of Charlie Lake on 25 May 1980 following three days of rain, five paused for an hour at the north sewage lagoons in Fort St. John on 28 May 1983, and five were at the same site on 24 May 1989. Summer: Four records. One was at the north sewage lagoons on 2 June 1989, one was at Charlie Lake on 17 June 1981, one was on a muddy farm field near the North Pine marshes on 21 June 1984, and two were at the north sewage lagoons on 24 June 1988.

Hudsonian Godwit

Limosa haemastica

Status: *Rare to uncommon local spring and autumn migrant.*

Not reported by Williams (1933b). Cowan (1939) collected one bird at Tupper Creek, South Peace on 8 May 1938. On the basis of this record, Penner (1976) listed this species as a possible migrant in the Peace River valley.

Habitat: Migration: Edges of mudflats and shores of shallow lakes, ponds, marshes, and sewage lagoons. Often feeds by wading and probing the submerged bottom. Also has been seen to roost in daytime with ducks on a large ice pan on Charlie Lake during spring break-up.

Distribution: Migration: Local in the southeast portion of the region. It occurred most frequently at the north sewage lagoons in Fort St. John but also at Charlie Lake, Cecil Lake, and Boundary Lake, as well as the south sewage lagoons in Fort St. John. There was a single sighting at North Pine.

Occurrence: See Figure 86 for migration phenology and relative abundance. Spring: Nine arrival dates (1980, 1981, and 1983 to 1989) ranged from 26 April to 8 May, with seven dates between 29 April and 4 May. Earliest birds sometimes appeared singly but more likely in flocks of three to 18 birds. These birds represented not only the earliest arrivals but also “the peak” of spring movement since they were usually members of the single largest flock. There was usually only one such flock per season, followed by

a trickle of individuals or very small flocks of two to eight birds thereafter. Such an early flock typically stayed one to three days, as in May 1986 when a flock of 26 arrived at the north sewage lagoons in Fort St. John on 2 May and stayed through 4 May. Seven last spring departure dates (1980 and 1983 to 1989) ranged from 7 to 25 May, with five dates between 7 and 17 May. Excluded from these periods are individuals that lingered for a week or longer in late May and through June. Summer: During June 1986, a godwit was present at the north lagoons off and on all month. As with a godwit at Boundary Lake seen on 30 June 1980, the 1986 bird may have been attempting to over-summer, or may have been a late spring migrant. It was last seen 24 June 1986. Three records of early southbound arrivals (1982, 1986, and 1987) ranged from 14 to 20 July. These birds were adults, showing signs of molt. The largest such flock was of 18 godwits, which arrived at the north lagoons 14 July 1982. On 15 July 1986, Campbell and Petrar (1986) recorded nine at the north lagoons. In 1987, seven appeared at the north lagoons on 20 July. Twelve were present on 25 July and one remained until 27 July. It appeared that the July movement of adults was finished quite quickly. Three at the north lagoons on 8 August 1982 were not aged but may have been adults in late passage. Autumn: There were four sightings of Hudsonian Godwits in September at the north lagoons. All were juveniles. Six appeared on 2 September 1984, one was seen on 11 September 1986, and a final bird was present on 25 and 26 September 1988.

Marbled Godwit

Limosa fedoa

Status: *Casual spring migrant.*

Not previously listed for the North Peace River region.

Occurrence: Two records. One was at Cecil Lake on 7 May 1980 and three were feeding at the north sewage lagoons in Fort St. John on 7 May 1988.

Ruddy Turnstone
Arenaria interpres

Status: *Casual spring and autumn migrant.*

Not previously listed for the Peace River area.

Habitat: Migration: Beaches and causeways around lakes and sewage lagoons.

Distribution: Migration: Recorded at the south end of Charlie Lake and Beatton Provincial Park, the south sewage lagoons in Fort St. John, and Boundary Lake.

Occurrence: Spring: Two records. Two adults were seen at the south end of Charlie Lake during a three-day rainstorm on 24 May 1980 and one adult was at the same site on 28 May 1990. Summer: Three records. An adult was feeding on the beach at Beatton Provincial Park (Charlie Lake) on 22 and 23 August 1986, a basic-plumaged adult was at the south end of Charlie Lake on 23 August 1976, and a juvenile was at the south sewage lagoons in Fort St. John on 28 August 1985. Autumn: One sighting: an un-aged bird at Boundary Lake on 9 September 1986.

Sanderling
Calidris alba

Status: *Very rare spring migrant and rare to occasionally uncommon autumn migrant.*

Not previously listed for the North Peace River region.

Habitat: Migration: Beaches and rocky breakwaters around lakes, as well as along shores and mudflats of sewage lagoons. It seems to favour lakeshores more than most shorebirds do.

Distribution: Migration: Recorded at Charlie Lake and the north and south sewage lagoons in Fort St. John.

Occurrence: There were 49 records for the 23-year period 1976 to 1998. Spring: Not seen every year. For the period 1980 to 1989, the species was

recorded each spring except in 1981 and 1983. It was most often encountered from mid-to-late May. Ten records ranged from 17 to 30 May. In Alberta, where Sanderling is a regularly recorded transient, migrants pass through from 30 April to 10 June with a peak in late May (Pinel et al. 1991). Summer and Autumn: There were three June sightings, with the latest seen on 13 June. There were four July sightings ranging from 17 to 26 July, which probably represent the return of southbound adults. The largest July assembly was seven birds at the north sewage lagoons in Fort St. John on 17 July 1986 (Campbell and Petrar 1986). Thirty-two of 49 records occurred between 18 August and 22 September. This period probably represents the passage of juveniles. During September 1986 surveys at the north sewage lagoons, all Sanderlings (n = 41) were juveniles. Assemblies ranged from one to 16 birds (16 September) and were seen on 13 of 17 total surveys. Five last dates of autumn departure (1980, 1982, 1984, 1986, and 1987) ranged from 5 to 22 September.

Semipalmated Sandpiper
Calidris pusilla

Status: *Common to very common spring and autumn migrant.*

Cowan (1939) called it a common migrant. Penner (1976) listed it as a migrant along the Peace River valley.

Habitat: Migration: Mudflats and shores as well as muddy patches between tussocks of grass around edges of ponds, lakes and sewage lagoons

Distribution: Migration: Most frequent in wetlands of the southeastern quarter of the North Peace River region where suitable foraging habitat occurred, especially around Charlie Lake, the North Pine marshes, the sewage lagoons in Fort St. John, Cecil Lake, and Boundary Lake.

Occurrence: Spring: Ten arrival dates (1980 to 1989) ranged from 30 April to 8 May, with seven dates between 30 April and 4 May. Cowan (1939) did not record this species until 23 May (1938)

at Dawson Creek. Identifying a peak in spring migration is complicated due to the occasional absence of shorebird habitat as a result of high water levels submerging mudflats and muddy shorelines. Also, the sudden appearance of habitat, as when a sewage cell is emptied, may cause dozens of birds to concentrate where the previous day they were absent. However, in spite of these situations, a peak generally appeared during the fourth week of May. On 24 to 26 May 1980, a cold front accompanied with heavy rains passed through, which resulted in 400 Semipalmated Sandpipers being present at Charlie Lake. The sudden draining of a cell at the north sewage lagoons in Fort St. John on 24 May to 26 May 1986 uncovered mud that was soon covered by 500 birds. The last birds to pass through in the spring occurred in very late May or early June. Cowan (1939) gave 4 June 1938 as a departure date for Tupper Creek. **Summer:** The first southbound sandpipers appeared in late June or early July. Seven first southbound arrival dates around Fort St. John ranged from 24 June to 10 July. Southbound migration peaks occurred during the second week of July and again during the second and third weeks of August. The three largest counts were 367 birds on 14 July 1982, 320 birds on 9 July 1987, and 150 birds on 7 August 1988, all at the north sewage lagoons. Numbers dwindled rapidly after the fourth week of August. **Autumn:** Six autumn departure dates (1980 to 1988) ranged from 1 to 16 September.

Western Sandpiper

Calidris mauri

Status: *Casual spring migrant and rare mid-to-late summer/autumn migrant.*

Previously unreported from the North Peace River region.

Habitat: **Migration:** Mud flats and muddy shores of lakes and sewage lagoons.

Distribution: **Migration:** This species was found most regularly in small numbers of up to seven birds at the sewage lagoons in Fort St. John. It was also seen very rarely at Charlie, Cecil, and Boundary lakes.

Occurrence: **Spring:** Four May records ranged from 24 to 28 May. **Summer:** One June record of seven birds between 8 and 23 July. These sandpipers were seen most frequently in August, where 45% of all records (17 of 38) were made. It was usually encountered singly, but the largest count was seven birds at the north sewage lagoons on 12 August 1987. **Autumn:** Nine September records spanned the period 2 to 16 September.

Least Sandpiper

Calidris minutilla

Status: *Common spring and mid-summer/autumn migrant.*

Cowan (1939) called the Least Sandpiper (Figure 89) an abundant migrant. Penner (1976) listed it for the Peace River valley based upon Cowan's publication.

Habitat: **Migration:** Frequents mud flats and the edges of shallow ponds, lakes and rivers as well as mud margins around marsh vegetation. Occasionally it occurred along beaches at Charlie Lake.

Distribution: **Migration:** Most frequently recorded at the north and south sewage lagoons in Fort St. John, and less commonly at Boundary Lake, Cecil Lake, Charlie Lake, and the marshes along 248A Road near North Pine. Western-most sighting were from Lynx Creek along the Peace River.

Occurrence: **Spring:** Ten earliest arrival dates (1980 to 1989) ranged from 26 Apr to 9 May, with eight dates between 26 Apr and 4 May. Spring numbers were generally fewer than 10 birds per site. The largest single-site spring count was of 50 Least Sandpipers at the north lagoons on 24 May 1984. Eight spring departure dates (1982 to 1988) ranged from 22 to 29 May. **Summer:** As with many migrant shorebirds, Least Sandpipers appeared in late June when it was not clear to if they were north or southbound birds. Typical of such records is one or two birds at Charlie Lake on 29 Jun 1981. **Autumn:** Six records of southbound migration arrival dates ranged from 7 to 28 July. Autumn counts were substantially higher than spring. Groups of 10 to 15

birds were frequent. The highest count was of 100 at the 248A Road marshes on 17 Aug 1978. Two peaks occurred in autumn: the first during the two weeks of July and the second in mid-August. Seven latest autumn departure dates (1982 to 1988) ranged from 2 to 16 September.



Figure 89. Least Sandpiper passes through the North Peace River region as a common migrant each year, foraging mainly along shores of wetlands. *Photo by R. Wayne Campbell.*

White-rumped Sandpiper

Calidris fuscicollis

Status: *Rare to uncommon spring migrant and accidental in summer.*

Cowan (1939) collected a male at Tupper Creek, South Peace, on 29 May 1938, the first record of this species for the province. Penner (1976) listed the White-rumped Sandpiper as occurring in the Peace River valley on the strength of Cowan's record.

Habitat: Migration: Muddy or sandy shores of shallow ponds or lakeshores. It favours mudflats at sewage lagoons but has occurred around large mud puddles and gravel dikes during violent rainstorms at Charlie Lake (25 and 26 May 1980). The species has fed on insects and small aquatic life along the water's edge. Also waded just offshore almost belly deep in water (6 June 1976 at Charlie Lake).

Distribution: Migration: Most frequently encountered at the north sewage lagoons in Fort St. John. There were also several sightings for the south sewage lagoons as well as Charlie Lake.

Occurrence: See Figure 86 for migration phenology and relative abundance. Spring: Eight first arrival dates (1980, 1981, 1983 to 1986, 1988, and 1989) ranged from 18 to 28 May. North Peace River region arrival dates are consistent with Alberta data for 1971 to 1980, which show the species occurring on migration between 5 May and 17 June (Pinel et al. 1991). North Peace River region records are of single birds or small flocks. The highest numbers occurred in very late May. The two largest flocks were 12 birds at the south sewage lagoons on 31 May 1985 and 11 at the north sewage lagoons on 28 May 1990. The highest number recorded on a single day was 16 birds on 28 May 1985, with 12 at the south lagoons and four on the shore of Charlie Lake just north of Beaton Provincial Park. Five departure dates (1983 to 1986 and 1988) ranged from 27 May to 16 June. Summer: Two adults in breeding plumage were seen at the north sewage lagoons on 17 July 1986 (Campbell and Petrar 1986).

Comments: The North Peace River region is the only location in British Columbia where the White-rumped Sandpiper regularly occurs.

Baird's Sandpiper

Calidris bairdii

Status: *Common spring and autumn migrant.*

Cowan (1939) recorded a single bird at Tupper Creek, South Peace. Penner (1976) used this record to include Baird's Sandpiper in his list of possible shorebird migrants along the Peace River.

Habitat: Migration: Often frequented drier sites at sewage lagoons, such as grassy or weedy flats behind the muddy shores. Occasionally it occurred on lawns and playing fields and foraged on pebbly beaches and mud flats.

Distribution: Migration: Somewhat more widespread than many shorebirds. The majority of records came from the sewage lagoons in Fort St. John and the south end of Charlie Lake (generally before the grassy marsh was drained). However, it was also been seen on beaches and lawns around Charlie Lake, the 248A Road marshes near North

Pine, Cecil Lake, Boundary Lake, a pond in eastern Fort St. John, the fields along the northeast edge of Fort St. John, and a backwater of the Peace River at Taylor.

Occurrence: Spring: Eleven arrival dates (1977 and 1980 to 1989) ranged from 23 April to 9 May, with six dates between 26 April and 5 May. North Peace River region arrival dates match well with those of 12 to 29 April given for southern Alberta (Pinel et al. 1991). Spring numbers generally ranged from one to 20 birds per site. The highest single-site count was 38. There was no well-defined spring peak. Most birds departed by the final day of May. Summer: A few Baird's Sandpipers lingered until mid-June. The latest records were 16 and 18 June, which could just as well have been early southbound migrants. Definite southbound migrants usually began to appear by late June or early July. Seven summer arrival dates (1982 to 1988) ranged from 21 June to 13 July. Summer numbers were slightly larger than spring numbers. Peak single-site numbers for summers of 1986 to 1988 (all at the north sewage lagoons in Fort St. John) were 24 on 10 August 1986, 84 on 18 July 1987, and 60 on 10 August 1988. Autumn: Six last dates of autumn departure (1980, 1982, and 1984 to 1988) ranged from 2 to 19 September. There were also two mid-October records for 1986. This range matches with the species' departure from Alberta where most have departed by mid-September, with a few recorded as late as the end of October and early November (Pinel et al. 1991).

Pectoral Sandpiper

Calidris melanotos

Status: *A common spring and autumn migrant.*

Cowan (1939) called the Pectoral Sandpiper an abundant migrant in the South Peace. Penner (1976) mentioned it as having been identified once during fieldwork in 1975 along the Peace River valley.

Habitat: Migration: Occurred in migration on the muddy margins and mudflats of ponds, lakes, and rivers, as well as short grass fields away from wetlands. It has occurred on sandy beaches at Charlie Lake. In spring it is found in flocks on lawns,

and even grassy roadsides especially during rain which softened the soil. Occasionally Pectoral Sandpipers occurred with American Golden-Plovers in dry fields, especially those that had been recently burned off.

Distribution: Migration: The Pectoral Sandpiper was most often seen in the eastern half of the North Peace River region. The north and south sewage lagoons in Fort St. John, Boundary Lake, Charlie Lake, and Cecil Lake were all important stopover areas. Many birds were also seen in spring in fields around Fort St. John. The western-most sighting was of birds at km 7 of the Upper Cache Road on the east side of the Halfway River.

Occurrence: See Figure 86 for migration phenology and relative abundance. Spring: The Pectoral Sandpiper usually arrived in the North Peace River region during the first week of May. Ten arrival dates (1978 and 1980 to 1988) ranged from 26 April to 9 May, with six dates between 3 and 5 May. North Peace River region arrival dates match well with those given for Alberta: 25 April to 10 May (Pinel et al. 1999). There were two peaks: the first between 5 and 13 May and the second between 24 and 30 May. The second peak contained the largest single-site numbers. These ranged between 130 and 300 birds per site; the largest count was 500 at the north sewage lagoons in Fort St. John following the draining of a holding cell which uncovered an extensive muddy bottom. Occasionally spring migrants were observed flying over Fort St. John without stopping to feed and rest. These flocks of 20 to 50 birds were seen flying fast and high heading to the northwest during the day. Two such dates were 12 May 1985 and 8 May 1988. Summer: After the late May peak, numbers dwindled very rapidly. There are thirteen June records, all before 17 June. The highest was 22 birds on 1 June 1986. The first southbound birds appeared as early as early July. Nine "fall" arrival dates (1981 to 1988 and 1997) ranged from 4 July to 16 July with just over 100 individuals often seen each day at the north sewage lagoons during the second half of July. Autumn: The largest autumn assembly was of 250 birds at the north sewage lagoons in Fort St. John on 24 September 1988. Eight last dates of

autumn departure (1980 to 1988) ranged from a very early 14 September to 31 October. Five dates ranged between 9 October and 27 October. In 1986, the north lagoons were checked almost daily from 3 to 27 October. Pectoral Sandpipers were present on 11 of 13 dates with counts ranging from two to 13 birds per day. The Pectoral Sandpiper was one of the last shorebirds to leave the North Peace River region before freeze-up.

Sharp-tailed Sandpiper
Calidris acuminata

Status: *Rare autumn migrant.*

Not previously reported in literature for the area.

Habitat: Migration: Foraged at weedy edges and mud flats of sewage ponds.

Distribution: Migration: Recorded seven times at the north sewage lagoons in Fort St. John and once at the south lagoons.

Occurrence: Autumn: A total of eight records (1986 to 1988) ranged from 7 September to 12 October with a highest single site count of two birds at the north sewage lagoons in Fort St. John on 12 and 13 September 1987 and on 9 October 1988.

Comments: Sharp-tailed Sandpiper is likely a rare, but annual migrant, which passes through the North Peace River region in very small numbers. It is invariably associated with Pectoral Sandpipers.

Dunlin
Calidris alpina

Status: *Rare spring and late summer/autumn migrant.*

Cowan (1939) found a male in the South Peace on 2 June 1938. Penner (1976) listed the species as a migrant along the Peace River valley based upon Cowan's record.

Habitat: Migration: Sewage lagoons and muddy shores of ponds and lakes.

Distribution: Migration: Recorded only at the north sewage lagoons in Fort St. John (six sightings) and the south end of Charlie Lake (two sightings).

Occurrence: Spring: Five records from 23 April to 29 May. Maximum number recorded at one time was two birds from 23 to 25 April. Summer: One record: one at the north sewage lagoons in Fort St. John on 17 July 1986 (Campbell and Petrar 1986). Autumn: Two records, both from the north sewage lagoons: a juvenile from 4 to 13 September 1987 and one bird from 8 to 16 October 1986.

Stilt Sandpiper
Calidris himantopus

Status: *Rare to uncommon spring migrant and common mid-summer/autumn migrant.*

Not previously reported for the Peace River area.

Habitat: Migration: Shallow water along the shores of sewage lagoons, ponds, and lake shores. Juveniles were also seen feeding in the shallow surf along a beach at Beatton Provincial Park. During spring and autumn, birds were observed wading belly deep just offshore to feed.

Distribution: Migration: The majority of records came from the north and south sewage lagoons in Fort St. John. It was also found west at a pond along Highway 29 near Cache Creek, the 248A Road marshes near North Pine, the beach along the east side of Charlie Lake at Beatton Provincial Park, the south end of Charlie Lake (marsh now drained), and Boundary Lake.

Occurrence: See Figure 86 for migration phenology and relative abundance. Spring: Eight first arrival dates (1980 and 1983 to 1989) ranged from 21 to 28 May. Spring abundance varied from year to year. In the springs of 1987 and 1988, only one bird was seen on one to two days; however, in 1985 there were over 20 birds over the period of a week. The largest single-site count was 20 birds at the south end of Charlie Lake on 24 May 1980 during a cold rainstorm which caused various shorebirds to

suspend migration for a short time. Six departure dates (1980, 1983, 1985, 1986, 1988, and 1989) ranged from 26 May to 1 June. Summer: Five first southbound arrival dates (1982 and 1985 to 1988) ranged from 7 to 13 July. These were adults which continued to appear throughout July. The latest sighting of adults (two) occurred on 7 August 1988 at the north lagoons. Six first southbound arrival dates for juveniles ranged from 7 to 20 August. Juveniles appeared in larger numbers than adults. The peak of juvenile movement was from mid-August through early September. The largest single site count was of 133 birds at the north lagoons on 22 August 1987. Autumn: Small numbers (usually < 10) remained at the lagoons from about 9 September to the end of the month. Four final departure dates (1984 and 1986 to 1988) ranged from 13 to 26 September.

Buff-breasted Sandpiper
Tryngites subruficollis

Status: Very rare spring and late summer/autumn migrant.

Not previously recorded in the North Peace River region.

Habitat: Migration: Birds recorded in May 1980 occurred on a wet gravel and earth dike around puddles during a cold three-day rain storm in May 1980. All other birds fed on the top of the dike around sewage cells or on dry mudflats in the cells themselves. The species was found near vegetation including short grass, foxtail barley, and dried mats of aquatic vegetation (see Fig 148 in Campbell et al.1990).

Distribution: Migration: The May 1980 sightings were from the south end of Charlie Lake. The others are from the north sewage lagoons in Fort St. John.

Occurrence: Spring: All four sightings occurred between 24 May and 30 May. Five adults gathered at the south end of Charlie Lake on 24 May 1980, one adult was at the same spot the next day, an adult was at the north sewage lagoons on 27 May 1987, and two adults were at the north sewage lagoons on 20 May 1983. Summer: A juvenile was seen at the

north sewage lagoons on 27 August 1985. Autumn: A juvenile was at the north sewage lagoons 14 September 1986.

Ruff
Philomachus pugnax

Status: *Casual transient.*

These are no previous records for northeastern British Columbia.

Occurrence: Two records: a female Ruff was photographed (Figure 90) at the north sewage lagoons in Fort St. John on 25 and 26 May 1986 and a juvenile male was at the same site on 2 October 1986.

Comments: The North Peace River region sightings are the first interior sightings for British Columbia (Campbell et al. 1990).



Figure 90. This female Ruff, known in Europe as the reeve, was the first confirmed record for interior British Columbia. *Photo by Chris Siddle, Fort St. John, BC, 25 May 1986.*

Short-billed Dowitcher
Limnodromus griseus

Status: Rare spring migrant and rare to occasionally uncommon mid-summer/autumn migrant.

Cowan (1939) noted that pairs occasionally stopped at Tupper Creek during May 1938. He felt it might breed but had no evidence. Penner (1976) listed it as a migrant in the Peace River valley.

Habitat: Migration: Favours ponds, marshes, and sewage lagoons where mud flats and muddy areas in shallow water occurred.

Distribution: Migration: Found only in the wetlands in the southeast of the study area such as the north and south sewage lagoons in Fort St. John, Charlie Lake (south end and the beach at Beaton Provincial Park), Cecil Lake, and Boundary Lake.

Occurrence: Spring: Three arrival dates (1983, 1988, and 1989) ranged from 5 to 9 May. Highest spring single-site count was of two birds. Such counts were made on a few occasions at the north sewage lagoons between 9 May and 25 May. Summer: Four sightings of early arriving southbound adults (1984 and 1986 to 1988) ranged from 29 June to 10 July. Four early southbound arrival dates (1985 to 1988) for juveniles ranged from 3 to 20 August. Juveniles appeared in higher numbers than did adults. Single-site counts of juveniles ranged from one to 18 birds per count during August and September at the north sewage lagoons in Fort St. John. Autumn: Departure dates (1984 to 1988) ranged from 18 August to 21 September. During autumn 1986, when the north lagoons were visited several times a week, individual Short-bills lingered until mid-September. In Alberta, this species may stay until late October in some years (Pinel et al 1991).

Long-billed Dowitcher
Limnodromus scolopaceus

Status: *Uncommon to common spring migrant and common to very common mid-summer/autumn migrant.*

No dowitchers (Figure 91) were recorded by Williams (1933b). Not recorded by Cowan (1939) or Penner (1976).

Habitat: Migration: Shallow water along the edges of ponds, marshes, lakes and sewage ponds.

Distribution: Migration: Most frequent in southeast wetlands of the region. Sightings have come from beaver ponds along Highway 29 near Watson Slough, Charlie Lake, the North Pine marshes, the

north and south sewage lagoons in Fort St. John, Cecil Lake, and Boundary Lake.

Occurrence: Spring: Ten first arrival dates (1980 to 1989) ranged from 1 to 9 May. Spring numbers generally peaked about mid-May. The five highest counts were 44 birds at the north sewage lagoons in Fort St. John on 5 May 1988, 50 birds at Cecil Lake on 12 May 1983, 50 birds at the north sewage lagoons on 19 May 1983, 57 at the north sewage lagoons on 13 May 1983, and 70 birds at Cecil Lake on 8 May 1980. Nine spring departure dates (1980 and 1982 to 1989) ranged from 17 May to 4 June, with five dates between 25 and 29 May. Summer: Eight first southbound arrival dates (1981 to 1988) ranged from 27 June to 13 July. Adults returned to the North Peace River region first. The largest single site counts, all at the north sewage lagoons, fell within this period: 364 adults on 25 July 1987, 261 birds on 17 July 1987, and 250 birds 14 July 1982. Three earliest southbound arrivals of juveniles (1986 to 1988) ranged from 10 to 16 August. Juveniles quickly increased in number and dominated the dwindling numbers of adults by the end of August. Autumn: Juvenile numbers peaked in early September and again in late September or early October. The three largest single site counts of juveniles were 197 birds on 7 September 1987, 150 birds on 26 September 1988, and 104 birds on 3 September 1986, all at the north sewage lagoons. Eight latest autumn departure records (1979, 1980, and 1983 to 1988) ranged from 29 September to 27 October, with six records between 11 and 27 October.



Figure 91. Although neither Short-billed nor Long-billed Dowitcher was reported in the Peace River region by field biologists through the 1970s, both species occur regularly as migrants in the North Peace River region. *Photo by R. Wayne Campbell.*

Wilson's Snipe
Gallinago delicata

Status: *Common spring and late summer/autumn migrant and summer visitor; breeds.*

Cowan (1939) assigned no status but indicated that the then "Common" Snipe (Figure 92) was frequent as a migrant and breeding species at Swan Lake and nested at Tom's Lake and Charlie Lake. Penner (1976) called it a fairly common summer resident in the Peace River valley during field investigations of 1975.



Figure 92. In late spring and early summer, male Wilson's Snipe often calls from fence posts near wetlands. *Photo by R. Wayne Campbell.*

Habitat: Migration: Wet meadows and shores of most wetlands as well as beaver ponds, bogs and fens, marshes in trembling aspen parkland, sewage lagoons, shallow lakeshore, and damp fields. In August the species was even found along damp forest trails but within 50 m of a field or lakeshore. In bad weather it sought out ditches beside highways and other marginal habitat. Breeding: One nest was discovered in a tussock of sedge in wet sedge meadows. In Del Rio south of the Moberly River, the snipe favoured wet areas on clear cuts (Phinney 1999).

Distribution: Migration: Occurred throughout the North Peace River region. Breeding: More local than during migration but likely occurred in suitable habitat throughout the North Peace River region.

Occurrence: Spring: Eleven arrival records (1976 and 1980 to 1989) ranged from 11 to 28 April with eight dates between 20 and 26 April. The 11 April 1976 record, a winnowing bird at Stoddard Creek, was nine days earlier than any other spring record. In the South Peace, Phinney (1998) gave an early arrival of 18 April in 1991. Wilson's Snipe was usually widespread and frequent within a day or two of its arrival, remaining most common through the first nine or 10 days of May. The highest single-site count was of fourteen on 6 May 1983 at the sewage lagoons in Fort St. John. Pair formation (group flights) was frequently seen in late April. On 24 April 1977, flights of three to four birds over the 248A Road marshes were probably males pursuing females as described by Tuck (1972). Winnowing displays were common at this time. Summer: Southbound migration became evident from mid-August onwards. The highest single-site count was 41 birds at the north lagoons on 25 August 1987. Autumn: Eight final departure dates (1980 and 1982 to 1988) ranged from 14 September to 20 October, with five dates between 28 September and 20 October.

Breeding: A nest with three eggs (see Figure 93) was found in the top of a sedge tussock in a sedge meadow near Watson Slough on 4 May 1980. Phinney (1998) found three nests (17 May 1991, 23 May 1993, and 7 June 1995) in the South Peace, all containing four eggs and situated in grassy roadside ditches. On 9 July 1983, four snipe were flushed from sedges at a beaver pond about one kilometre west of Cache Creek. Two were chicks barely able to fly, making them about two weeks old (Tuck 1972). On 15 July 1986, two recently hatched chicks were seen in the middle of 103 Road about 1.7 km east of Fort St. John. One had been crushed by a vehicle but the other was unharmed and was placed in a ditch by the observers (Campbell and Petrar 1986). A parent flew overhead.



Figure 93. Wilson's Snipe nests are difficult to spot unless an incubating adult is accidentally flushed from its nest. *Photo by R. Wayne Campbell.*

Comments: An observation of five birds in a compact flock migrating due northwest over Cecil Lake at 2039 hours on the clear night of 9 May 1983 is noteworthy. In the South Peace, at Swan Lake, Cowan (1939) flushed 15 snipe on 10 May 1938 after a night of "a big migration".

Wilson's Phalarope
Phalaropus tricolor

Status: *Common spring and autumn migrant and uncommon summer visitor; breeds.*

Cowan (1939) noted pairs of Wilson's Phalaropes (Figure 94) at Swan Lake. Penner (1976) listed it as a migrant along the Peace River valley on the strength of Cowan's account. During the 1990s, local populations appeared to decline rapidly.

Habitat: Migration and Breeding: Shallow wetlands such as prairie sloughs and small lakes, beaver ponds, and sewage ponds. In the 1980s, it was found nesting in the short grass along gas and oil lease roadways (Figure 95).

Distribution: Migration and Breeding: Locally distributed. The species occurred only in the southeast portion of the study area. It has not been found north of North Pine. In the west, it has been seen at km 5 of the Upper Cache Road and regular (at least formerly) at ponds along Highway 39 at Cache Creek.

Occurrence: Spring: Ten arrival dates (1980 to 1989) ranged from 1 May to 16 May with eight between 1 and 6 May. These dates were earlier than the arrival date of 23 May given by Cowan (1939). North Peace River region spring dates are closer to arrival dates for southern Alberta of 25 April to 5 May (Pinel et al. 1991). Population peaks (1983 to 1985) were represented by assemblies of 35 to 100 birds at the north lagoons in Fort St. John in very late May. Summer: Female flocks appeared in early June. For example, 86 females and 40 males were counted at the north lagoons on 9 June 1987. Thereafter females became scarce with six females last seen on 22 June 1987 at that site. This pattern was more-or-less repeated at Boundary Lake in June 1987. The last adult males were recorded in the fourth week of July. The largest numbers of juveniles congregated at the north and south lagoons from the last week of July through the first half of August. In 1987 and 1988, flock sizes of juveniles ranged from seven to 56 birds. After mid-August and to final departure dates, Wilson's Phalaropes became scarce. Autumn: Five autumn departure dates (1984 to 1988) ranged from 22 August to 3 September.



Figure 94. Adult male Wilson's Phalarope on nest incubating a full clutch of four eggs. *Photo by R. Wayne Campbell, Boundary Lake, BC, 23 June 2004.*

Breeding: Copulation was seen as early as 8 May and as late as 24 May. Thirteen nests were located (1983 to 1988). Earliest eggs (see Figures 95 and 114) were found on 24 May 1985 at the south sewage lagoons in Fort St. John. This nest had two eggs, an incomplete clutch. Ten nests with full clutches (*e.g.*, four eggs, see Colwell and Jehl 1994) were found between 28 May and 24 June. Downy chicks were seen between 6 and 23 July. Juveniles were seen from 9 July to 28 August. All 13 nests were straw-lined depressions situated on the ground of dikes or little used roadways. Most were situated in sparse grasses 14 to 24 cm high.



Figure 95. Nest with four eggs (lower left) built in short grasses precariously close to the edge of an active access road to an oil and gas pump jack station at Boundary Lake, BC. The following year the road allowance area had been widened and one of the largest breeding colonies of Wilson's Phalaropes in British Columbia was abandoned. *Photo by R. Wayne Campbell, 23 June 2004.*

Red-necked Phalarope

Phalaropus lobatus

Status: *Common spring and mid-summer/autumn migrant.*

Not listed by Cowan (1939) or Penner (1976)

Habitat: Migration: Large and small lakes, as well as ponds and sewage lagoons. Occasionally individuals were seen ashore.

Distribution: Migration: All records came from the southeast corner of the North Peace River region, most commonly Charlie Lake and the north and south sewage lagoons in Fort St. John. The species also occurred less commonly on Cecil Lake, German Lake, Boundary Lake, the North Pine marshes, and once on ponds along Highway 29 near Cache Creek.

Occurrence: Spring: Nine arrival dates (1980 and 1982 to 1989) ranged from 6 to 24 May, with six dates between 6 and 17 May. In Alberta, the spring passage occurred mainly in early May (Pinel et al. 1991). Numbers peaked during the fourth week of May with the largest single site numbers from 10 to 75 birds. The largest count was 100 birds at north sewage lagoons in Fort St. John on 24 May 1985. Nine dates of latest spring departure (1980 and 1982 to 1989) ranged from 26 May to 16 June, with six dates between 29 May and 7 June. Summer: Ten earliest "fall" arrival dates (1982 to 1988, 1991, 1997, and 1998) ranged from 5 July to 21 July. Largest numbers occurred in August. The peak was 600 at Charlie Lake on 21 August 1986. Autumn: Seven latest departure dates (1982 to 1988) ranged from 2 to 19 September. Most September flocks were between five and 30 birds with the highest single-site count of 62 at the south lagoons on 6 September 1986.

GULLS AND TERNS

Sabine's Gull

Xema sabini

Status: *Rare spring and late summer/autumn migrant.*

Cowan (1939) collected a male at Tupper Creek, South Peace, on 2 June 1938. The species was unrecorded by Penner (1976). Campbell et al. (1990b) reported one between Hudson's Hope and the Halfway River on 18 June 1977.

Habitat: Migration: Large lakes and sewage lagoons.

Distribution: Migration: Ten sightings: all but two were at Charlie Lake, the others at the north sewage lagoons in Fort St. John.

Occurrence: Spring and early Summer: Three records between 27 May and 4 June indicating a late spring passage. It has been seen twice in small flocks: six adults at the north end of Charlie Lake on 27 May 1982 and five adults off Beaton Provincial Park, Charlie Lake on 3 June 1983. A single adult was spotted among a flock of 71 Franklin's Gulls at the north sewage lagoons in Fort St. John on 4 June 1986. Summer: A single record of an adult at Charlie Lake on 6 August 1986. Autumn: Six records ranged from 1 to 19 September. All were adults except for a juvenile at the north lagoons on 19 September 1986 and an immature at the south end of Charlie Lake on 15 September 1985. The highest single-site count was of five or six adults at the north end of Charlie Lake on 12 September 1987.

Bonaparte's Gull

Larus philadelphia

Status: *Common spring and autumn migrant and summer visitor.*

Cowan (1939) called this species abundant at Swan Lake, South Peace, and although he did not encounter it at Charlie Lake in June 1938, he was told that it did occur there during migration. Penner (1976) listed it as a common migrant along the Peace

River during the 1973 to 1975 surveys.

Habitat: Migration and Summer: Rivers, large and small lakes, sewage ponds, and ponds.

Distribution: Migration and Summer: Most widespread during the first half of May when it could be encountered along the Peace River, on most larger lakes, and occasionally on smaller ponds along 250A Road in North Pine and both sets of sewage lagoons in Fort St. John. From June through September it occurred mostly on Charlie Lake, with several records from the north sewage lagoons and a few from Cecil Lake, German Lake, Boundary Lake, and the Peace River between Hudson's Hope and the Halfway River. It was fairly widespread during October although most records were from Charlie Lake.

Occurrence: Spring: Eleven earliest arrivals (1979 to 1989) ranged from 28 April to 7 May. The peak of spring migration occurred during the first half of May, when flocks of 100 to 1,000 adults were usually present on Charlie Lake. Summer: Most adults had moved out of the area by June. In late May and June, flocks of non-breeding birds appeared. Typically 10 to 400 were found on Charlie Lake from late May to mid-July. In mid-July flocks of adults suddenly appeared. Earliest arrival dates for southbound adults (1981 to 1983, 1985, 1987, and 1988) ranged from 17 to 27 July. Numbers peaked in late July and early August. These flocks typically numbered between 1,000 and 2,500 birds, with adults in the vast majority during late July. For example 2,400 birds at Charlie Lake on 22 July 1982 were estimated to be 95% adults. The first juveniles began to appear with adults about the fourth week of July. By mid-to-late August, juveniles outnumbered adults. A flock at Charlie Lake on 21 August 1986 totaled 650 birds with 70% of them juveniles. Autumn: Large flocks remained on Charlie Lake well into October. Numbers dwindled through October in warm autumns. Elsewhere, much smaller numbers were encountered at the north and south sewage lagoons in Fort St. John, over Cecil Lake, at Boundary Lake, and along the Peace River. On 27 September 1987, a flock of 30 birds was seen migrating upstream on

the Peace River at Bear Flat. Ten dates of autumn departures (1977, 1979, 1980, and 1982 to 1988) ranged from 13 to 31 October.

Little Gull
Larus minutus

Status: *Accidental.*

Not listed by Williams (1933b), Cowan (1939) or Penner (1976) and not previously recorded for the interior of British Columbia (Campbell et al. 1990b).

Occurrence: One first-year bird was seen at the south end of Charlie Lake on 9 June 1983 by Mike Force, Doug Kragh, Tom Plath, Colin Butt, and Linda Koch. Other observers saw the bird until 13 June. It was photographed on 9 June (Figure 96) in company with 85 Bonaparte's Gulls.

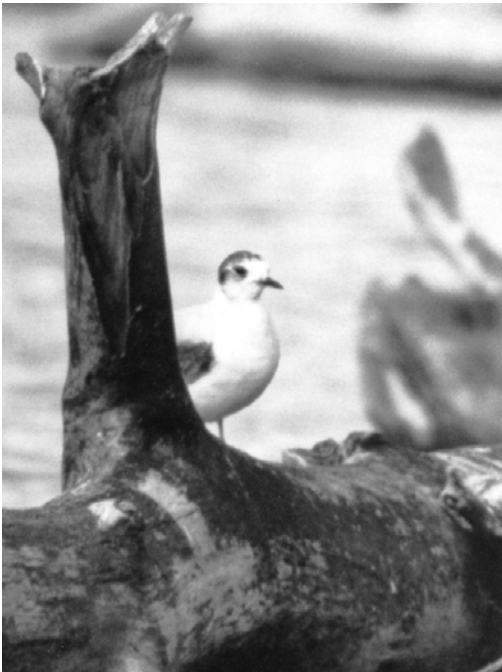


Figure 96. British Columbia's first interior record of a Little Gull was photographed at Charlie Lake, B.C. Photo by Chris Siddle, 9 June 1983. BC Photo 856.

Franklin's Gull
Larus pipixcan

Status: *Common spring and summer transient and uncommon autumn transient.*

This species (Figure 97) was first recorded in the Peace River District when two were collected at Swan Lake on 7 June 1938 (Cowan 1939). It is listed by Penner (1976) as a casual visitor to the Peace River valley.

Habitat: Spring to Autumn: Lakes and nearby open areas such as dikes, beaches, fields, parking lots, sewage lagoons, and landfills. During a rainstorm on 5 June 1984, seven adults were seen flying low over a paved street in Fort St. John snatching insects off the wet pavement.

Distribution: Spring to Autumn: Most frequently encountered around Charlie Lake and Fort St. John but occasionally seen at Cecil and Boundary lakes.

Occurrence: Spring: Arrival was irregular. The ten earliest arrival dates (1980 to 1989) ranged from 23 April to 31 May. Peaks in numbers were also irregular, sometimes occurring in late May. Earliest spring arrivals were often single adults although occasionally up to 70 or more birds were seen, as on 14 May 1984 at Charlie Lake. The largest spring flock was at least 500 adults flying and resting on Charlie Lake on 28 May 1985. Summer: Peaks also occurred sometimes in mid-to-late June as in 1981 and 1988. Three notable records were of 400 birds on Charlie Lake on 16 June 1988, 450 at the Grand Haven landfill on 21 June 1996 (R. Wayne Campbell pers. comm.), and 270 at the south end of Charlie Lake on 1 July 1998. These flocks were eclipsed, however, by a single flock of 1,500 gulls at the north sewage lagoons in Fort St. John on 6 July 1997. All were in adult plumage except about five percent that were first-year birds. August records of large flocks were uncommon; therefore 200 birds at Charlie Lake on 27 August 1982 were noteworthy. Autumn: Eight final dates of autumn departure (1980 to 1988) ranged from 20 August to 26 October. All final records were of single birds, four of them in their first autumn of life.



Figure 97. In late afternoon during the summer Franklin's Gull leave traditional foraging areas and form large flocks circling in the air prior to departing to evening roost sites. *Photo by R. Wayne Campbell, Fort St. John, BC, 23 June 1996.*

Mew Gull

Larus canus

Status: *Uncommon to occasionally common spring migrant (sporadic from year to year), rare to uncommon summer visitor, and uncommon autumn migrant.*

Not recorded by Williams (1933b). Cowan (1939) called the Mew Gull a common migrant at Tupper Creek in the South Peace. Penner (1976) termed it an uncommon migrant along the Peace River valley.

Habitat: Migration: Lakes, rivers, and sewage lagoons. Penner (1976) noted that migrants occasionally loafed on gravel bars along the Peace River.

Distribution: Migration: Somewhat local even in migration. Recorded along the Peace River from Hudson's Hope to Old Fort due south of Fort St. John. The species also gathered around Charlie Lake and Boundary Lake. It appeared at both the north and the south sewage lagoons in Fort St. John and on a wet field at Mile 50.5 of the Alaska Highway. The species was very uncommon on Cecil Lake, at the Grand Haven landfill, and at German Lake.

Occurrence: Spring: Twelve arrival dates (1978 to 1989) ranged from 25 April to 19 May, with nine dates between 29 April and 6 May. The peak occurred from 1 to 14 May with 40 to 300 birds in flocks at this time. The largest single-site count was from the south end of Charlie Lake with 305 adults present on 6 May 1982. The spring passage was brief. Eight departure dates (1980, 1982 to 1987, and 1989) ranged from 12 to 27 May. Summer: Rarely, one or two birds, usually immatures, visited the sewage lagoons or larger lakes in June or July. June 1982 was typical, with a third-year bird seen in Fort St. John on 1 June and at Charlie Lake on 5 and 28 June. Adults appear, post-breeding presumably, from mid-to-late July, though not in all years. Five early "fall" arrivals (1982, 1983, 1985, 1988, and 1992) ranged from 17 to 23 July. Numbers were small, usually one to 30 birds. The largest single-site count was 35 adults at the south end of Charlie Lake on 23 July 1982. Migrants probably also used the Peace River as a migratory route. On 26 July 1985, a flock of 30 adults flew along the Peace River between Bear Flat and Old Fort. During the 1980s, sometimes a few juveniles appeared in August. The earliest was at Beaton Provincial Park on 29 July 1983. The single-site high count was of five juveniles and an adult along the Peace River at Lynx Creek on 18 August 1986. Autumn: A scattering of records of adults and immatures into early September most years. Eight latest departure dates (1980 to 1982 and 1984 to 1988) ranged from 27 August to 12 October.

Ring-billed Gull

Larus delawarensis

Status: *Uncommon spring and autumn transient and summer visitor.*

Not recorded by Williams (1933b). Cowan (1939) recorded one Ring-billed Gull (Figure 98) at Tupper Creek on 26 June 1938. Penner (1976) does not list it for the Peace River valley.

Habitat: Migration and Summer: Lakeshores, sewage lagoons, and landfills. Also roosts/loafs around playing fields, on mall roofs, and in parking lots.

Distribution: Migration: Charlie Lake and Fort St. John including the Grand Haven landfill and both north and south sewage lagoons. It was less often seen at Taylor, Cecil Lake, and Boundary Lake.

Occurrence: Spring: Ten earliest arrival dates (1980 to 1989) ranged from 21 April to 21 May, with six dates between 30 April and 11 May. Forty-four of 108 total records were from the spring period but numbers fluctuated with each season. Peaks (30 or fewer birds) generally occurred from late May through the first half of June. The largest spring flock was 30 adults at Charlie Lake on 27 May 1989. Summer: Occurred irregularly in small numbers. There were 24 records for June and only eight for July. Typically, June and July birds were immatures summering at lakes. For example, one first-year, two second-year, and 14 sub-adults were seen at Charlie Lake on 16 July 1987. Single-site peak count was 60 at the Grand Haven landfill on 21 June 1996 (R. Wayne Campbell pers. comm.) Autumn: Numbers were small with 30 being the largest single-site count at Grand Haven landfill on 24 August 1988. Latest departure dates (1985, 1987, and 1988) ranged from 12 to 27 October. However, Ring-billed Gull was sporadic in autumn with none seen after August in 1980 and September 1986.



Figure 98. Most Ring-billed Gull records for the North Peace River region are from the landfill site at Grand Haven, BC. Many of the records are of sub-adults shown in this photograph with the dark tail band. *Photo by R. Wayne Campbell.*

California Gull *Larus californicus*

Status: *Rare spring and summer transient.*

This species was unreported until Penner (1976) termed it a fairly common migrant and occasional summer resident in the Peace River valley. Phinney (1998) upgraded it to a fairly common migrant and summer visitor to the South Peace but mistakenly stated that the California Gull had been first recorded in the Peace River area in 1981 and 1985.

Habitat: Spring and Summer: Lakeshore, landfills, sewage lagoons, and wet fields.

Distribution: Spring and Summer: Most records (13) were from the south end of Charlie Lake. The species also occurred three times at the Grand Haven landfill, four times at the south lagoons in Fort St. John, three times at a wet field at Mile 50 of the Alaska Highway, and once at the north sewage lagoons. It is very likely that further fieldwork will find this species to be more widely distributed along the Peace River and adjacent wetlands than the 1980 to 1989 data suggest.

Occurrence: Twenty-two records were from 1980 to 1989. Spring: Eight arrival dates (1980, 1981, 1983, 1984, and 1986 to 1989) ranged from 28 April to 22 May, with five dates between 4 and 18 May. Phinney (1998) gives the earliest spring arrival for Dawson Creek as 21 April. Most North Peace River region spring and summer records were of one to five birds. The largest flock of 43 adults was counted at the south end of Charlie Lake on 18 May 1984. Summer: Most of the nine June sightings were of single birds. The largest single-site number was five at the south sewage lagoons in Fort St. John on 24 June 1985. There were also two July and one August sightings. Autumn: No records.

Herring Gull
Larus argentatus

Status: *Uncommon to occasionally common spring migrant and uncommon summer and autumn transient and migrant.*

Cowan (1939) stated that Herring Gull was common on both Charlie Lake and Swan Lake. Penner (1976) called it an uncommon but regular migrant along the Peace River valley.

Habitat: Migration and Summer: Frequents fields, lakes, rivers, sewage lagoons and landfills.

Distribution: Migration: Likely migrates most regularly along the Peace River from the Alberta border to Hudson's Hope. It occurred frequently around Charlie Lake as a migrant and summer visitor. Also was occasionally found in fields, farms and sewage lagoons around Fort St. John, as well as the landfill at Grand Haven both as a migrant and summer visitor.

Occurrence: Spring: Earliest arrival dates (1981 to 1989) ranged from 17 April to 5 May. The peak of spring movement was 160 birds counted between Fort St. John and Charlie Lake along the Alaska Highway on 4 May 1983. In 1982 and 1983, there was an obvious decrease in the numbers of gulls (presumably migrants) during the second week of May. In most years small numbers remained in the North Peace River region after migrants had passed. Summer: Most age-classes were encountered but immatures and sub-adults pre-dominated the summer visitors. Flocks of 20 or more were frequent summer "loafers" at the south end of Charlie Lake prior to the in-filling of the marsh at Stoddart Creek's outlet. Numbers fell to one to five birds along the lakeshore following the in-filling. At the Grand Haven landfill, up to 15 birds have been seen (*e.g.*, 21 June 1996; R. Wayne Campbell pers. comm.). Autumn: Seven final autumn dates (1980, 1982, and 1984 to 1988) ranged from 24 August to 31 October, with four dates between 24 September and 11 October. Most autumn records were of one to four birds per site with the largest count being seven birds at the mouth of Lynx Creek on 18 August 1986.

Thayer's Gull
Larus thayeri

Status: *Casual.*
Not previously recorded.

Occurrence: Summer and Autumn: Two records. A third-year bird was photographed at the south sewage lagoons in Fort St. John on 22 and 23 June 1987; a first-year bird was seen at the north lagoons on 11 October 1987.

Glaucous-winged Gull
Larus glaucescens

Status: *Casual summer visitor.*
Not previously listed for the North Peace River region. However, this species has been recorded in mid-September 1958 and on 11 August 1959 at Bear Lake about 25 km northwest of Grande Prairie, Alberta (Salt and Salt 1976).

Occurrence: Summer: Three records: an adult at Charlie Lake on 9 June 1981, an adult at the junction of 271 Road and the Alaska Highway on 8 June 1983, and an adult near the south end of Charlie Lake on 15 June 1983. The latter two records may have been the same individual.

Glaucous Gull
Larus hyperboreus

Status: *Casual summer and autumn visitor.*
Previously not recorded for the North Peace River region.

Occurrence: Summer and Autumn: Three records: a second-year bird was at the south end of Charlie Lake from 21 June to 10 July 1980, an adult was at the north sewage lagoons in Fort St. John on 31 October 1982, and a first-year bird was at Mile 50 along the Alaska Highway near Fort St. John on 2 October 1986.

Caspian Tern

Sterna caspia

Status: *Accidental.*

Penner (1976) gives the only record for the North Peace River region. A single bird was seen along the Peace River 41.7 miles west of the Alberta border on 29 May 1974.

Black Tern

Chlidonias niger

Status: *Common spring and autumn migrant and summer resident; breeds.*

Cowan (1939) called the Black Tern (Figure 99) an abundant breeding resident in the Peace River District with sightings at Tom's Lake, Swan Lake, and Charlie Lake. Blood (1979) stated that migrants commonly fed along the Peace River upstream from Taylor to Hudson's Hope in July.

Habitat: Migration: Lakes, marshes and rivers. The species occurred over more open, deeper lakes during migration, as well as shallow marshes, shallow lakes, and ponds similar to those in the breeding season. Breeding: Shallow lakes, marshes, swamps, and ponds.

Distribution: Migration: Occurred regularly in spring and autumn at Charlie Lake. It was a fairly regular migrant at the north and south sewage lagoons in Fort St. John. An interesting aggregation of 36 adults was seen along the Peace River at its confluence with the Halfway River on 26 June 1985. Breeding: Colonies occurred regularly at the 248A Road marshes near North Pine, Cecil Lake, and Boundary Lake. It may also have nested at German Lake and Lost Lake. One pair was at Watson Slough on 20 June 1976 but breeding was not confirmed.



Figure 99. Adult Black Tern on its nest platform of sedge leaves containing two eggs. *Photo by R. Wayne Campbell, Cecil Lake, BC, 26 June 2007.*

Occurrence: Spring: Ten earliest arrival dates (1980 to 1989) ranged from 16 to 25 May. Numbers generally built quickly and peaked by the final week of May around colonies and over Charlie Lake. The three largest single site counts of 70 to 104 terns occurred between 22 May and 5 June. Summer: Forty-five foraging over Charlie Lake in mid-June 1988 were likely migrants. Five of six final records were between 13 and 26 August. Numbers at colonies after late July were usually fewer than five birds per site. The largest late summer concentration was of four adults and 20 juveniles over Charlie Lake on 11 August 1988. Autumn: One sighting of a straggler on 16 September at the north sewage lagoons in Fort St. John.

Breeding: Cowan (1939) found three nests (see Figure 99) at Tupper Creek, South Peace region, on 24 June 1938. Two nests contained two eggs, while the third contained three eggs. Adults carrying food were seen at the 248A Road marshes on 1 July 1977, 13 June 1983, 9 July 1986, and 21 July 1992. Ten to 12 adults with six juveniles were seen on 21 and 22 July 1981 and 10 adults with five or six juveniles were seen on 22 July 1982 at the south end of Charlie Lake. The latter birds had presumably nested nearby. This colony disappeared with the in-filling of the outlet marsh that autumn. Flying juveniles were at Boundary Lake on 25 July 1982 and similar observations were made there many times in the years that followed. On 9 August 1986, an adult fed a juvenile that was standing on a mud hummock at Boundary Lake, while another adult was followed in clumsy flight by a juvenile.

Common Tern
Sterna hirundo

Status: *Rare late spring, summer and autumn transient.*

Not recorded by Williams (1933a). Cowan (1939) collected one bird at Tupper Creek, South Peace on 26 June 1938. Penner (1976) recorded terns as uncommon migrants in 1975 in the Peace River valley but did not specifically identify them.

Habitat: Spring to Autumn: Deep and shallow lakes, large sewage ponds, and rivers.

Distribution: Spring to Autumn: Sightings were from the Peace River at Hudson's Hope, Charlie Lake, Boundary Lake, and the north sewage lagoons in Fort St. John.

Occurrence: Twenty-four total records from 1977 to 1989. Spring: Six of 24 (25%) sightings occurred in the spring period. Five arrival dates (1983 to 1985, 1987, and 1988) ranged from 24 May to 6 June. North Peace River region arrival dates are a full month later than those given for Alberta (Pinel et al. 1991). This may suggest that Common Terns in the North Peace River region were non-breeders wandering northwest from Alberta colonies. There are too few data to discern a spring peak. Summer: Six records occurred in June and July. The largest single summer count was of five adult types and an immature at the north end of Boundary Lake on 10 June 1984. August was the month of the most sightings, nine of 24 (38%). The high count was 100 at Charlie Lake on 11 August 1977. Other August counts ranged between one and 19 birds. Autumn: Two sightings occurred in September and one in October. Common Terns usually departed the region between 23 August and 2 October.

Arctic Tern
Sterna paradisaea

Status: *Very rare late spring, early summer, and autumn migrant.*

Cowan (1939) collected one at Tupper Creek, South Peace, on 29 May 1938. Penner (1976) recorded terns as uncommon migrants along the Peace River but did not specifically identify them to species.

Habitat: Migration: Lakes and rivers.

Distribution: Migration: Most records were from Charlie Lake with one record from the Peace River about five kilometres west of the mouth of the Halfway River.

Occurrence: Nine total sightings between 1983 and 1988. **Spring:** Appeared over Charlie Lake in very late May or early June. Nine birds were counted at Charlie Lake on 25 May 1983. The earliest record was one bird on 21 May 1984. **Summer:** Three June sightings between 3 and 8 June with the highest count of two birds on 8 June 1983. There were three August sightings: one first-winter bird on the Peace River on 18 August 1986, one at Charlie Lake on 23 August 1986, and two adults at Charlie Lake on 24 August 1984. **Autumn:** One sighting of an adult at the north end of Charlie Lake on 7 September 1987.

Forster's Tern
Sterna forsteri

Status: *Casual vagrant.*

Previously not recorded for the North Peace River region.

Occurrence: Four records. **Spring:** One adult at the Fort St. John south sewage lagoons on 25 May 1985; one sub-adult seen at Charlie Lake 27 May 1989. **Summer:** Two adults and two sub-adults photographed at the south end of Charlie Lake 6 June 1988; two adults at Cecil Lake 9 July 1997.

Comments: See Campbell et al. (2008) for a summary of the status and biology of Forster's Tern in British Columbia and recent records for the North Peace River region.

Parasitic Jaeger
Stercorarius parasiticus

Status: *Casual late summer migrant.*

Previously not recorded for the North Peace River region.

Occurrence: **Summer:** Four records, all single adults from the open waters of south-central Charlie Lake: 22 July 1982, 27 August 1982, 27 August 1984, and 24 August 1986.

PIGEONS AND DOVES

Rock Pigeon
Columbia livia

Status: *Uncommon local resident.*

The Rock Pigeon, formerly known as Rock Dove (Figure 100), was unrecorded by Williams (1933b), Cowan (1939), and Penner (1976).

Habitat: **Year-round:** Grain elevators and surrounding open country.

Distribution: **Year-round:** Records were confined to two areas: the grain elevators at the British Columbia Rail depot in eastern Fort St. John and the highway overpass on the Alaska Highway at Baldonnel between Fort St. John and Taylor. Occasionally the species was seen in Taylor.

Occurrence: **Spring:** High numbers were nine in Fort St. John at the British Columbia Rail depot on 12 May 1984, two at Baldonnel on the highway overpass on 15 May 1982, and four at Taylor on 15 March 1985.

Breeding: Breeding was reported only in the mid-1970s from under the deck of the railway bridge over the Peace River at Taylor (Larry Thompson, pers. comm.).



Figure 100. Although a familiar species, very little is known about the natural history of Rock Pigeon in the Peace River region of British Columbia. *Photo by R. Wayne Campbell.*

Mourning Dove

Zenaida macroura

Status: *Rare spring to autumn transient.*

Williams (1932a) and Cowan (1939) did not record the Mourning Dove. Penner (1976) called it a rare summer visitor.

Habitat: Spring to Autumn: Almost all sightings were of birds feeding along roadsides in agricultural or wooded country. The stretch of highway that passes through semi-open woodlands and breaks along the north side of the Peace River from Ardills' Ranch to Bear Flat seemed particularly favoured, as did 103 Road around the farming community of Goodlow.

Distribution: Spring to Autumn: Records ranged along Highway 29 from east of the Halfway River to Bear Flat, and from the Fort St. John airport east to Cecil Lake, Goodlow, and Boundary Lake. The dove was also seen at Baldonnel, Taylor, and North Pine.

Occurrence: Twenty-nine total records. Spring: One was found at Watson Slough on 8 May 1977, 4 May 1980, 3 May 1981, and 21 April 1984 and a pair on 18 May 1980. One was at the Fort St. John airport on 14 May 1986 and one was seen at Cecil Lake on 3 May 1987. Summer: The following birds were observed: two pairs at the mouth of the Halfway River on 2 August 1982, one bird at Watson Slough on 15 June 1986 and two adults on 9 and 10 August 1977, one at Bear Flat on 27 August 1975, one juvenile at Baldonnel on 18 July 1982, one east of Cecil Lake on 25 June 1988, one at Goodlow on 13 June 1987 and 28 June 1985, and one juvenile at Goodlow on 11 July 1984. Autumn: Three records: one at Watson Slough on 3 October 1982 and one at North Pine on 16 September 1984 and 7 November 1982.

Passenger Pigeon

Ectopistes migratorius

Status: *Extinct.*

Occurrence: Six bones or parts of bones, belonging to one or two Passenger Pigeons were found during archaeological excavations of Fort D'EpINETTE, along the Peace River, east of Fort St. John (Williams 1978).

TYPICAL OWLS

Great Horned Owl

Bubo virginianus

Status: *Common resident; breeds.*

Williams (1933b) saw and collected several from the Peace River Block in 1930, including birds from Fort St. John and Taylor. He surmised that this owl (Figure 101) was "doubtless much commoner than [it] appears." Cowan (1939) found the species to be 'numerous' wherever he and Pat Martin went in the Peace River District. Penner (1976) called it a fairly common resident in 1975 in the Peace River valley.

Habitat: Year-round: Most forest types including young trembling aspen and balsam poplar growth, mature trembling aspen forest with stands of mature white spruce, and mature balsam poplar riparian forest. It hunts the edges of woodlands and hedgerows and will take prey from open fields. In winter, this species is seen sheltering in abandoned buildings in open farm fields. It also frequents wetlands, farmyards, and wooded lakeshores.

Distribution: Year-round: Resident throughout the entire North Peace River region.

Occurrence: Spring: One hooted at 1300 hours from Maurice Creek (across the Peace River from Hudson's Hope) on 16 May 1976. Adult incubated on an old American Crow nest at Mile 58 (Alaska Highway) on 18 April 1982. Two adults and three fledglings were together at the Fort St. John south sewage lagoons on 31 May 1978. An adult incubated

on an old Red-tailed Hawk nest at North Pine along 112 Road on 5 April 1984. Summer: One road-killed along 103 Road at Fort St. John on 10 June 1984. Two juveniles were together along Johnstone Road, Taylor, on 24 July 1981. Two juveniles were at Beatton Provincial Park on 17 August 1986; one of them was stuck in the bottom of a garbage can, possibly after it chased a squirrel. The owl was easy to release. Autumn: One was seen about 12 km east of Hudson's Hope on 9 September 1978. Two were hooting at noon at Charlie Lake on 19 September 1982. Winter: One perched in sunshine at minus 28° C at St. John Creek on 23 December 1984. One *subarcticus* type perched in the window of an abandoned shack near North Pine on 10 December 1983.

Breeding: Eight records (*e.g.*, six nests with one nest used two years in a row) and seven records of “branchers” (young which have walked out of the nest but cannot yet fly) and fledglings (Figure 101). Adults on nests, presumably incubating, were seen as early as 5 April. The earliest that downy young were seen in a nest was 8 May, though that date is misleading since only young large and old enough to be seen above the nest rims were detected. Approximate back-dating from broods of “branchers” about six weeks old at the end of May suggested that eggs may have hatched as early as mid-April.

Of seven broods of “branchers” or fledglings, four had three young each, and the other three broods were of two young each.

Site specific nest sites were as follows: one nest was in a mature white spruce stand in mature trembling aspen forest along a creek, one nest was in an trembling aspen forest adjacent to a mature white spruce stand 200 m from a lake, two were in large balsam poplars at edges of trembling aspen forest (one next to a pond), one was in a trembling aspen at the edge of mixed woodland, one was in a trembling aspen along the edge of a small grove in a farm field, and one was in a natural cavity in a sandstone cliff (Figure 102). Nest heights ranged from 8 m (young trembling aspen) to 20 m (mature white spruce). Nests used by Great Horned Owls included two American Crow nests, two Red-tailed

Hawk nests, one Northern Goshawk nest, and one nest of unknown origin.



Figure 101. Most breeding records of Great Horned Owl are from “branchers” or recently fledged young. *Photo by R. Wayne Campbell.*

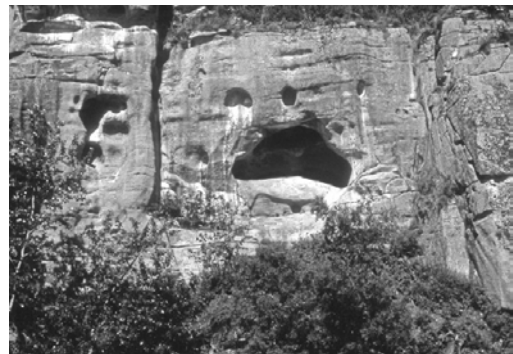


Figure 102. For many years a pair of Great Horned Owls nested successfully in small caverns in eroded sandstone cliffs at Charlie Lake, BC. *Photo by Chris Siddle, July 1980.*

Snowy Owl

Bubo scandiacus

Status: *Rare to uncommon migrant and winter visitor.*

Williams (1933b) saw a preserved wing at Fort St. John in May 1922 and speculated that the Snowy Owl (Figure 103) was “doubtless plentiful” around Fort St. John in winter. Cowan (1939) did not encounter the species since he and Pat Martin visited the region in May and June after owls had departed. However, he surmised that the Snowy Owl was of regular winter occurrence from discussions with local citizens. Not encountered by Penner (1976).

Habitat: Migration and Winter: Open farm fields (see Figures 14 and 15), occasionally edges of trembling aspen groves and muskeg next to large open fields. The species is most often seen perched on high vantage points, including sheds, telephone poles, and haystacks, clods of dirt, trembling aspens, and rarely spruce trees.

Distribution: Migration and Winter: Areas most often used by owls included the open farming areas around Charlie Lake, Buick Creek to Fort St. John, Baldonnel, Two Rivers, Cecil Lake to Boundary Lake, roads branching west and east of 101 Road from Fort St. John, and North Pine to Rose Prairie.

Occurrence: Numbers varied widely from one winter to the next and occasionally the owl passed through as a migrant only, as in the autumns of 1984 and 1985. Spring: Seven final spring sightings (1981 to 1984 and 1986 to 1988) ranged from 7 March to 18 April. Summer: No records. Autumn: Nine autumn arrival dates (1980 to 1988) ranged from 29 October to 27 December, with five dates between 3 and 22 November. Note that December is considered an autumn month in this account because evidence suggests that Snowy Owls are still migrating during December. Winter: Between 1980 and 1989, the winters (January and February) of 1981 to 1982, 1982 to 1983, and 1983 to 1984 were the most productive for finding over-wintering Snowy Owls. From December 1982 to the end of March 1983, 50 sightings were tallied. For the next best winter (1983

to 1984), 38 sightings were recorded for the same months. In contrast, during the winter of 1987 to 1988 only five sightings were made and in 1984 to 1985 no Snowy Owls were found from December through March.

Comments: See Campbell and Preston (2010) for a summary of the status and biology of Snowy Owl in British Columbia and recent records for the North Peace River region.



Figure 103. Snowy Owl migrates through the North Peace River region and in some years remains as a winter visitor. *Photo by Nikki Tyrrell, Fort St. John, BC, 23 December 2006.*

Northern Hawk Owl

Surnia ulula

Status: *Irruptive. Very rare to uncommon spring and autumn migrant and very rare to uncommon winter visitor; may breed.*

Williams (1933a) encountered a pair at Nig Creek on 26 June 1922. Cowan (1939) called it a winter visitor to the Peace River District and mentioned a mummified carcass he had found at Tupper Creek. Not encountered by Penner (1976).

Habitat: Migration and Winter: Appeared in almost any trembling aspen grove-field edge, or patch of black spruce muskeg, as well as the more usual forest edges and meadow habitat. Also seen along highways where roadside weeds and grasses acted as a meadow or clearing. It occurred in re-generating forest burns (Mile 130 of the Alaska Highway) and trembling aspen edges of natural grassland (breaks) on south-facing slopes. Sometimes it frequents corrals or farmyards where mice occur. A rancher near the mouth of the Chowade River would throw mice he had uncovered in a hay pile to an attendant Northern Hawk Owl that waited nearby.

Distribution: Migration: In spring and autumn this species was widely distributed cross the North Peace River region from Hudson's Hope east to Goodlow, and from Buick Creek south to Taylor. Winter: Recorded several times in the Farrell Creek Community Pasture and areas north of it, along the Upper Cache Road, around Buick Creek, and occasionally around Montney, North Pine, Rose Prairie, and Cecil Lake.

Occurrence: Spring: There were eight records between 20 April and 17 May of hawk owls, which in general appeared in locations for only a day or two, and seemed to be migrants. All March records were excluded since they appeared to be wintering birds. A pair frequenting an old forest fire burn site at Mile 130 (Alaska Highway) was seen in early April 1986. A bird about 30 km north of Cecil Lake in early May 1988 may also have been on breeding territory (R. Wayne Campbell pers. comm.). Summer: No records. Autumn: Even during most years when

Northern Hawk Owls did not winter, one or two generally occurred as autumn migrants. The earliest autumn arrival dates (1980 to 1982, 1984, and 1988) ranged from 26 September to 12 November. The month when hawk owls were most frequently recorded in the autumn was November with 13 of 16 (81%) total autumn records. The single largest number counted in an autumn day was four hawk owls on 26 November 1988 along the Upper Cache Road. Winter: Irruptive, depending upon cycles of rodent and Snowshoe Hare (*Lepus americanus*) prey. Also, influence of snow cover on prey availability is critical but is not fully understood (Duncan and Duncan 1998). The Northern Hawk Owl was not present every winter. None were recorded during the winters of 1983 to 1987. Two were seen during the winter of 1980 to 1981, three during the winter of 1981 to 1982, 18 different birds wintered during the winter of 1982 to 1983. Finally six wintered during the winter of 1988 to 1989. The most recorded in a single winter day were 10 birds in the Farrell Creek Community Pasture and the Upper Cache Road area on 16 January 1983. Surveys during the winter of 1982 to 1983 revealed that there were at least another eight birds wintering in the Cecil Lake and North Pine-Rose Prairie areas.

Comments: Northern Hawk Owls are very tolerant of humans and will allow people to approach very closely. Illegal shooting of hawk owls probably occurs fairly frequently in northern British Columbia. The species also occasionally collides with vehicles and is accidentally caught and killed in leg-hold traps (Siddle 1984).

Northern Pygmy-Owl

Glaucidium gnoma

Status: *Casual.*

Penner (1976) reported one in the Peace River valley 41.7 miles west of the Alberta border on 10 June 1974.

Occurrence: The only other record was a single bird seen in willow and trembling aspen saplings in farmland along 271 Road at the southern boundary of Beatton Provincial Park on 20 October 1984. In

Alberta, the Northern Pygmy-Owl occasionally occurs in autumn and winter, which suggests that in some years there is dispersal eastwards out of the Rocky Mountains.

Barred Owl
Strix varia

Status: *Rare resident.*

Not encountered by Williams (1933b) or Cowan (1939). Grant (1966) examined records for northeastern British Columbia and surmised that during the 1940s and 1950s the Barred Owl expanded its range westwards from Alberta along the Peace River into British Columbia. Penner (1976) termed it a fairly common permanent resident in the Peace River valley.

Habitat: Year-round: Appeared to be restricted to mature mixed forest and coniferous forests along the Peace River. The Barred Owl requires rather large tree cavities for nesting, and it is likely that the huge balsam poplars along the river provide nesting sites for it. In Alberta, the Barred Owl prefers mixed woods with large deciduous trees, particularly along lakeshores and stream valleys (Pinel et al. 1991).

Distribution: Year-round: All records indicated the species was restricted to older woodlands along the Peace River.

Occurrence: Spring: Most records occurred in spring when birds were calling. Two were heard along Peace Island Park Road, Taylor on 18 March 1984 and 10 May 1983; one was heard at the same site on 25 March 1985, 13 April 1986, and 14 May 1983; one called at km 5 of Johnstone Road, Taylor on 29 May and 5 June 1982; and one was seen in the woods at the confluence of the Halfway River and Peace River 26 April and 3 May 1981. Summer: One called along Peace Island Park Road on 9 June 1980. Autumn: No records. Winter: One was killed in a leg-hold trap along a trap line near Dry Creek east of Hudson's Hope in February 1981.

Great Gray Owl
Strix nebulosa

Status: *Rare resident.*

Not recorded by Williams (1933), Cowan (1939) or Penner (1976).

Habitat: Year-round: Almost all Great Gray Owl (Figure 104) records were of birds seen at the forest edge next to a clearing (Figure 105), meadow, or roadside. One was seen at a landfill. Forest types included black spruce, muskeg, as well as typical boreal mixtures of white and black spruce, trembling aspen, and pure white birch (*Betula papyrifera* var. *papyrifera*), as well as a mature riparian forest of balsam poplar, white spruce, birch, and trembling aspen.

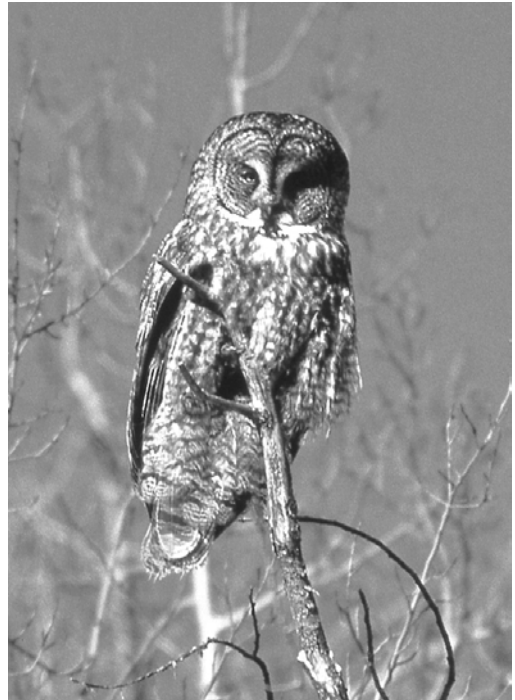


Figure 104. Great Gray Owl is a year-round resident in the North Peace River region and during 25 years of fieldwork only 21 birds were recorded in the study area. Photo by R. Wayne Campbell, Peace River, BC, 12 June 2005.



Figure 105. Forest edges, usually adjacent to clearings of low shrubs and meadows, are favourite hunting perches for Great Gray Owls year-round. *Photo by R. Wayne Campbell, near Goodlow, BC, 23 June 2008.*

Distribution: Year-round: Seven of the 21 records (30%) were from the forested country along the Alaska Highway, from Mile 80 and northwards, just outside the North Peace River region. Five records were from the Farrell Creek Community Pasture atop the plateau north of Highway 29 and west of Farrell Creek. Two records, 13 years apart, were from Wilder Creek next to Highway 29 seven kilometres west of the Alaska Highway. The remaining records were all from sites from Prespatou south to Taylor.

Occurrence: Spring: One was at Wilder Creek at Highway 29 on 24 March 1985, one was at Beaton Provincial Park on 1 April 1989 (Al Wilson pers. comm.), one was at Peace Island Park Road, Taylor, on 2 and 4 April 1982 and six to eight owls were seen along the Alaska Highway from Mile 80 to Mile 143 between 5 and 8 April 1985 (Rhonda Anderson pers. comm.). Summer: Three records: one at Mile 80, Alaska Highway on 14 June 1990 (R. Wayne Campbell pers. comm.), one at Wilder Creek at Highway 29 1 July 1998, and one was photographed at Prespatou landfill during the first week of June 1981 (Neva Low pers. comm.). Autumn: Four records: one was at Mile 15 of the Jedney Road northwest of Wonowon on 25 October 1984 (David Whiting pers. comm.), one was killed in leg-hold trap on a trap line at the Farrell Creek Community Pasture on 26 November 1988 (Bill

Johnston pers. comm.), one was seen near Montney at 275 and 264 roads (Joan Johnston pers. comm.), and one was in Baldonnel along 107 Road on 28 and 29 October 1985 (William Sutton pers. comm.). Winter: One was photographed at the Farrell Creek Community Pasture 19 December 1981 (Joan Johnston pers. comm.). Likely the same bird as present on 19 December 1981 was found killed in a leg-hold trap at the same site on 7 January 1982 (Joan Johnston pers. comm.). One was recorded at Farrell Creek Community Pasture on 26 December 1985 and one was seen along 249 Road near Cecil Lake on 18 December 1981 (Joan Johnston pers. comm.).

Long-eared Owl

Asio otus

Status: *Accidental.*

Not listed by Williams (1933b), Cowan (1939), or Penner (1976).

Occurrence: One apparent adult was seen being harassed by a pair of American Crows in young trembling aspens at Stoddart Creek, Fort St. John, on 8 June 1985.

Short-eared Owl

Asio flammeus

Status: *Variable. Rare to uncommon some years and apparently absent other years; occasionally present in winter; may breed.*

The only record of a Short-eared Owl (Figure 106) is from Williams (1933b).

Habitat: Year-round: Stubble fields (Figure 107), fallow and hay fields, marshes, open country around sewage lagoons, and cleared areas with regenerating weeds and saplings.

Distribution: Year-round: Patchily distributed. There is only one record west of Charlie Lake, at Hudson's Hope. All other sightings are from the vicinity of Charlie Lake and the agricultural country from Fort St. John north to Buick Creek, south to Taylor, and east to Clayhurst.



Figure 106. Short-eared Owl has been recorded in the North Peace River region in every month of the year but its presence each year is unpredictable. (R. Wayne Campbell).

Occurrence: Spring: Six earliest arrival dates (1977, 1980, 1982, 1983, 1985 and 1988) ranged from 12 to 24 April. Usually this species was encountered as a single bird or in a pair but occasionally concentrations occurred such as five seen on 13 April 1988 along one km of 246 Road south of Beaton Provincial Park. Summer: Several sightings of single birds at the North Pine marshes (4 June 1977), Taylor (29 June 1980), Goodlow (25 June 1989), Clayhurst (2 July 1998), and at Fort St. John (6 June 1986). Autumn: Occurrence of the Short-eared Owl was erratic in autumn. In 1981 and 1983 none was seen. However, in 1988 there were two June and one September sighting as well as eight birds on 11 November and two on 18 November. Four latest autumn records range from 17 to 23 November, one of the latest departures for any migratory North Peace River region bird species. Winter: During December 1979, at least six owls were resident along 86th Street on the northeastern edge of Fort St. John. These birds stayed until at least 20 January 1980. The only other winter record was of a bird found recently frozen to death in a Fort St. John backyard on 11 January 1982.



Figure 107. During autumn migration, and in winter, the erratically-appearing Short-eared Owl hunts over stubble fields where Meadow Voles (*Microtus pennsylvanicus*) are available. Photo by R. Wayne Campbell, east of Fort St. John, BC, 13 November 1996.

Boreal Owl
Aegolius funereus

Status: *Very rare.*

Not encountered by Williams (1933b), Cowan (1939), or Penner (1976).

Habitat: Migration: Migrants occasionally pass through un-wooded open areas. A bird was photographed as it recovered from the shock of crashing into a balcony window in the middle of a suburban, almost treeless section of Fort St. John in mid-September. One dead bird was found at the edge of a stand of mixed woods in a municipal park on the northern edge of Fort St. John. Another bird at Cecil Lake had entered a barn and farmyard in a young trembling aspen grove/ farm field habitat. Breeding: Calling birds along the Chowade River were heard in fairly typical mixed forest of white and black spruce, white birch, trembling aspen, and willow. A singing male frequented a regenerating forest fire burn on the east side of Charlie Lake. It sang and hunted from an adjacent 30+ year-old mixed forest of trembling aspen and white spruce. The burn had small open areas and saplings up to seven m tall, as well as a few large diameter snags. The male sang from the entrance of an old Northern Flicker nest hole in a snag. A brood of “brancher” chicks was in a stand of spruce in a clear-cut. The spruce trees were a maximum of 15 m tall (Tony Greenfield pers. comm.).

Distribution: Year-round: Recorded in Fort St. John in September and January. One male was on territory on the east side of Charlie Lake in mid-to-late March. Winter records came from Dry Creek east of Hudson’s Hope, the Chowade River (north of the North Peace River region), the confluence of Black Creek and the upper reaches of the Beaton River, and a single record from Cecil Lake.

Occurrence: Spring: Four records: One to three birds were heard near Andersons’ Ranch northwest of the confluence of the Chowade River with the Halfway River on 23 March 1984, a male sang from an old burn north of Beaton Provincial Park on 22 and 23 March 1987 (Dennis Troutd pers. comm.), a

male was photographed at the same location on 10 March 1988, and one was photographed in a barn at a Cecil Lake farm on 13 March 1989 (Troy Viens pers. comm.). Summer: Two records: four juveniles were found 23 miles northwest of Jedney Road and Mile 126 of the Alaska Highway 3 and 10 June 1984 and one was singing at Mile 103 of the Alaska Highway on 24 and 25 June 1984 (Tony Greenfield pers. comm.). Autumn: One was photographed as it recovered from colliding with a balcony window in Fort St. John mid-September 1985 (Barb Tootell pers. comm.). Winter: One was heard at Andersons’ Ranch on 25 February 1983.

Breeding: Aside from the singing male at Charlie Lake, there was no evidence of breeding activity in the North Peace River region. To the north, four dependent young were discovered by tree-planters along the Jedney Road on 3 and 10 June 1984.

Northern Saw-whet Owl
Aegolius acadicus

Status: *Rare to uncommon spring and summer visitor and casual winter visitor; breeds.*

Unrecorded by Williams (1933b), Cowan (1939), and Penner (1976).

Habitat: Year-round: Found in spring and summer in young and mid-aged trembling aspen forests on the east side of Charlie Lake and along Johnstone Road in Taylor. It has also been recorded in the mature, mixed riparian forest on the flood plain of the Peace River at Taylor. In winter, one roosted in a wooden garage in a trembling aspen forest while another frequented a hay barn also located in aspens.

Distribution: Year-round: May be locally resident but more field work is needed. It is found in spring and summer at Taylor. This includes the only breeding record. The species has been heard and seen in spring on the east side of Charlie Lake. One was singing in mixed forest near the Anderson Ranch about eight km up the Chowade River in the Pink Mountain area on 23 March 1984. This is north of the study area but indicates that this species may be more generally distributed than is currently

shown in literature and databases.

Occurrence: Spring: The earliest dates on which saw-whet owls were heard singing (1984 to 1986 and 1988) ranged from 8 to 25 March. The largest count was four birds heard on a single night on 15 April 1988 (three in the woods on the east side of Charlie Lake and one at Cecil Lake). Summer: A free-flying juvenile was seen along Peace Island Park Road on 27 June 1984 (Tony Greenfield pers. comm.). Autumn: No records. Winter: Two records: one roosted in a garage at Taylor on 29 December 1986 and one lived around a hay barn in Baldonnel from 7 to 9 February and was seen again on 13 February 1988. This owl survived nights when the temperature fell as low as minus 30° to minus 40° Celsius (Ruby MacBeth pers. comm.).

Breeding: The juvenile seen by Tony Greenfield (pers. comm.) was in mature mixed forest.

GOATSUCKERS

Common Nighthawk

Chordeiles minor

Status: *Rare to uncommon spring and autumn migrant and summer resident; probably breeds.*

Williams (1932a) recorded nighthawks on the North Pine River at Beaton River on 27 and 28 May 1922. He also observed the species throughout “the Block” in July and August 1929 and 1930. Cowan (1939) found it abundant and widespread in the Peace District. Penner (1976) called it a common summer breeder throughout the Peace River valley.

Habitat: Migration: Nighthawks forage over most habitats where insects fly. In the North Peace River region these included lakes, marshes, wooded swamps, sewage lagoons, river backwaters and banks, regenerating clear cuts, farm fields, breaks, urban and suburban areas, as well as above mixed forest, trembling aspen groves, and pinewoods. Penner (1976) mentioned nighthawks utilizing the sky above woodland clearings and grasslands in the Peace River valley. Breeding: Open space near shrubs, grass clumps, logs, or boulders and gravel

pans surrounded by small debris.

Distribution: Migration and Breeding: Recorded sparsely throughout the North Peace River region. There is one probable nest record near Goodlow.

Occurrence: Late Spring and early Summer: One of the last migrants to arrive. Eleven arrival dates (1976 to 1978 and 1981 to 1988) ranged from 22 May to 6 June, with eight dates between 28 May and 2 June. Penner’s early arrival date of 8 May is two weeks earlier than expected, and is perhaps erroneous. Campbell et al. (2006) did not include this record in their extensive summary of the species for the province. The largest early summer concentration was a group of 30 over the north end of Charlie Lake on 6 June 1987 (Ed Zolinski pers. comm.). One displayed over a clear cut at the south end of Cecil Lake on 9 June 1984. Eight were over the islands in the Peace River downstream from Bear Flat on 26 July 1985. Late Summer and early Autumn: Two noteworthy records: 10 were foraging over the Peace River at Taylor on 18 August 1982 and one fresh road-kill was found along Old 103 Road north-east of the Fort St. John airport on 9 September 1986. Six final autumn records (1976, 1978, 1980, 1982, 1985, and 1986) ranged from 25 August to 9 September.

Breeding: A Common Nighthawk was flushed from a newly prepared nest scrape near German Lake on 15 June 1980.

Comments: See Campbell et al. (2006) for a summary of the status and biology of the Common Nighthawk in British Columbia and recent records for the North Peace River region.

SWIFTS

Vaux’s Swift

Chaetura vauxi

Status: *Accidental.*

The only record is of a single bird reported in company with 200 swallows on 15 May 1975 seen somewhere along the Peace River (Penner 1976).

HUMMINGBIRDS

Ruby-throated Hummingbird

Archilochus colubris

Status: *Casual.*

Penner (1976) gave two records of single birds in the Peace River valley on 6 and 17 June 1974.

Comments: Although residents often spoke of Ruby-throated Hummingbirds occurring in the North Peace River region, I was unable to confirm the bird's presence from 1975 to 1999. However, recent banding studies have shown that Ruby-throated Hummingbirds occur between Tupper and Charlie Lake. During ten days in a recent summer, Doreen Cubie captured 64 hummingbirds at the feeders of 14 homes. These birds were 53 Calliope, 10 Ruby-throated, and 1 Rufous Hummingbird (Cubie pers. comm.).

Calliope Hummingbird

Stellula calliope

Status: *Rare spring migrant and summer visitor.* The species is apparently extending its summer range northwards over the years of this study.

Not mentioned by Williams (1932a), Cowan (1939), or Penner (1976).

Occurrence: Spring and Summer: Six records: a female at Charlie Lake on 28 May 1981 (Ed Zolinski pers. comm.), a female at Ardills' Ranch off Highway 29 on 29 June 1981 and again on 15 July 1982, a female at Baldonnel that died in a greenhouse on 23 May 1985 (William Sutton donated the corpse to the Cowan Vertebrate Museum at the University of British Columbia in Vancouver as specimen number 14748), a male near Mile 63 of the Alaska Highway on 6 June 1986, and a male on the ski hill along Peace Island Park Road, Taylor, on 1 July 1997.

Rufous Hummingbird

Selasphorus rufus

Status: *Casual spring and summer visitor.* The species was apparently increasing its range during the course of this study.

Not mentioned for the Peace River area by Williams (1932a), Cowan (1939), or Penner (1976).

Occurrence: Two records. A male in Fort St. John on 31 May 1983 (David Constable pers. comm.) and one along Upper Cache Creek Road, east of Halfway River, on 10 July 1999 (Don Cecile pers. comm.).

KINGFISHERS

Belted Kingfisher

Ceryle alcyon

Status: *Very local rare to uncommon spring and autumn migrant and summer visitor; probably breeds.*

Williams (1932) found this species five times during 1930, near the Halfway River, at Moberly Lake, and along the Pine River valley. Cowan (1939) found kingfishers "not abundant" in the South and North Peace River areas. Penner (1976) called it a fairly common summer breeder along the Peace River.

Habitat: Migration: Along fish-bearing water bodies that are relatively transparent. Breeding: Campbell et al. (1990b) summarize Prose's paper (1985) on the characteristics that make habitat suitable for the Belted Kingfisher. Water transparency is vital. The clearer the water, the more a kingfisher is attracted to a site. The many silt-laden streams of the North Peace River region are simply too opaque to be suitable for kingfishers. This point was also made by Cowan (1939). Thus kingfishers are probably restricted to the clearest stretches of the Peace River and a few of its tributaries where the clarity of the water allows the bird to see its prey and where a soil or clay bank allows for the excavation of a nesting hole. As well, individuals have turned up occasionally in upland areas, within 10 km of the Peace River valley. These birds may have been

breeding around local water bodies (Figure 108) or, more likely, nesting along the Peace River.

Distribution: Migration: Recorded in late August and early September from Charlie Lake, St. John Creek, and Cecil Lake, as well as along the Peace River. Breeding: Adults were recorded along the Peace River from Hudson's Hope to the Alberta border. There was a single record for the Blueberry River in the extreme north of the study area

Occurrence: Spring: Eight arrival dates (1976, 1978 to 1982, 1984, and 1987) ranged from 11 April to 8 May. Penner (1976) gives a spring arrival date of 28 April. Summer: Only a few records. Three birds were seen along the Beaton River near its confluence with Stoddart Creek on 26 July 1982; this was the highest single-site count. Migrants began to appear in upland sites in August. Autumn: Most widespread at this time. One was at the north end of Charlie Lake on 7 September 1987. Latest autumn sighting was one off Beaton Provincial Park on 18 September 1982.



Figure 108. The nest burrows of Belted Kingfisher have been found in cliffs surrounding clear lakes as well as along the banks of rivers, but nesting has yet to be confirmed. *Photo by R. Wayne Campbell, Halfway River, BC, 7 July 2003.*

WOODPECKERS

Yellow-bellied Sapsucker

Sphyrapicus varius

Status: *Common spring and autumn migrant and summer resident; breeds.*

Williams (1933a) encountered this species (Figure 109) from Fort St. John north to the Blueberry River in 1922. Cowan (1939) called it the most abundant woodpecker in the Peace District. Penner (1976) termed it a fairly common summer breeder in the forests along the Peace River.



Figure 109. Yellow-bellied Sapsucker breeds only in northeastern British Columbia where it favours mature trembling aspen forests. *Photo by R. Wayne Campbell, near Hudson's Hope, BC, 27 May 2004.*

Habitat: Migration and Breeding: Mixed and deciduous forests. More plentiful in mature trembling aspen forests where aspens of 15 cm or more in basal diameter formed the dominant element of the forest (Cowan 1939). Also occurs less commonly in younger second-growth mixed and deciduous forests.

Distribution: Migration and Breeding: Occurred throughout the lower elevation forests of the entire North Peace River region.

Occurrence: Spring: Ten arrival records (1980 to 1989) ranged from 26 April to 10 May, with six dates between 29 April and 3 May. Sapsuckers become plentiful soon after first arrival. Records of four to eight birds per site were not unusual during the first two weeks of May. Summer: Adults with fledglings were frequently encountered during the first half of July. Autumn: Eight final fall records (1981 to 1988) ranged from 3 to 17 September.

Breeding: Nest excavation began soon after arrival. For example, a male was excavating a nest cavity near Beatton Recreational Area on 6 May 1986; only five days after the first sapsucker had been recorded in the North Peace River region for the year. Cowan (1939) noticed a bird excavating on 15 May 1938 at Tupper Creek, South Peace, and stated that egg-laying commenced about 26 May.

Twelve nests were found in the North Peace River region. Tree species were recorded for 11 of them. All except one were live trembling aspen and one tree was dying. Nest hole heights (n=12) ranged from three to 10.6 m above ground with eight holes 5.4 m and above. Nests obviously containing young (either adults bringing food or noisy nestlings) ranged from 17 June to 9 July (n=7). The earliest fledglings were encountered on 1 July 1997.

Comments: Mature and old-growth trembling aspen forests are critical habitats for Yellow-bellied Sapsuckers' in the North Peace River region. These forests are currently under heavy logging pressure. Sapsuckers are a key species in forest ecology. Their old nest cavities provide nesting and roosting sites for several other bird and mammal species including Tree Swallows, Black-capped Chickadees, Boreal Chickadees, Red-breasted Nuthatches, House Wrens, Mountain Bluebirds, Red Squirrels, (*Tamiasciurus hudsonicus*) and Least Chipmunks (*Tamias minimus*). As well, their sapsucker "wells" attract many other species of insects, birds, and mammals.

Downy Woodpecker *Picoides pubescens*

Status: *Uncommon resident; breeds.*

Not recorded by Williams (1933a). Cowan (1939) saw only two at Swan Lake and called the species extremely scarce. Penner (1976) considered it an uncommon resident along the Peace River.

Habitat: Year-round: Mature trembling aspen forest, mature and young mixed forests (Figure 110), willow edges along young trembling aspen groves, treed town sites and farmyards, and the edges of a variety of woodland types, including brushy draws and thickets of breaks. In winter, it frequents bird feeders in residential areas and garbage dumps.



Figure 110. Mature to young mixed forests of trembling aspen attract both Downy and Hairy woodpeckers to Beatton Park, BC, each year. *Photo by R. Wayne Campbell, 23 June 1996.*

Distribution: Year-round: Occurred throughout the North Peace River region.

Occurrence: Spring: Typical records: Three were fighting at km 1 of the Old Hudson's Hope Road at Bear Flat on 20 April 1987; two were in Beatton Provincial Park on 9 May 1987; a pair was seen at Fort St. John on 16 March 1986; and one at North Pine on 7 April 1984. Summer: Typical records: One at Hudson's Hope on 25 August 1978, one at Watson Slough on 18 July 1985, two juveniles at Beatton Provincial Park on 12 July 1983, one at Peace Island Park Road, Taylor on 20 August 1987, and one at Cecil Lake on 9 July 1982. Autumn: Typical records: One at Beryl Prairie on 17 November 1978, one at Bear Flat on 8 September 1986, and one investigating siding on houses along 116 Avenue in Fort St. John on 1 November 1986. Winter: Typical records: One frequented a feeder at the southeast corner of Charlie Lake all December 1975 (Ed Zolinski pers. comm.). One bird at Baldonnel on 30 January 1982 (Greg Saxon pers. comm.). One at Farrell Creek 3 January 1983. **Breeding**: Two records: A female brought food to noisy nestlings in a birch snag at Mile 1 of Johnstone Road on 12 June 1980 and two juveniles were seen in Beatton Provincial Park on 12 July 1983.

Hairy Woodpecker
Picoides villosus

Status: *Uncommon resident; breeds.*

Williams (1933a) recorded it from three locations in the Peace. Cowan (1939) described it as scarce but widely distributed. Penner (1976) called it fairly common along the Peace River.

Habitat: Spring and Summer: Mature mixed and deciduous forests (see Figure 110). The species also frequented mature balsam poplar, riparian forests, and a mature balsam poplar forest burn. Penner (1976) stated that it occurred in "the more mature mixed and deciduous forest types" along the Peace River. Autumn and Winter: In late autumn and winter individuals appeared in more open habitats such as brushy wooded field edges and in town among buildings and at bird feeders in town and residential areas.

Distribution: Year-round: Found throughout forested areas and seasonally in urban and residential areas of the North Peace River region.

Occurrence: Spring: Typical records: One feeding on dog biscuits outside house at Baldonnel on 30 April 1977 and two at Andersons' Ranch along the Chowade River on 23 March 1984. Summer: Typical records: a juvenile female was at Hudson's Hope on 7 July 1998, four were along Peace Island Park Road, Taylor, on 9 July 1997, and one was at Boundary Lake on 20 August 1987. Autumn: Typical records: four were together at Bear Flat on 8 September 1986 and a female was investigating siding on houses along 116th Avenue in Fort St. John on 1 November 1986. Winter: Typical records: one at Lynx Creek on 19 February 1984, one was investigating window frames along 115th Avenue in Fort St. John on 20 January 1985, three were at a feeder on the north side of Stoddart Creek on 27 December 1986 (Ruth-Ann Darnell pers. comm.), and two were at the landfill in Taylor on 29 January 1984.

Breeding: Copulation was seen 6 May 1985 at the Beatton Recreational Area. Noisy nestlings were found at Johnstone Road, Taylor, on 29 May 1982; at Beatton Provincial Park on 4 June 1988; and along Peace Island Park Road on 4 June 1989. The May nest was located 17 m up a trembling aspen. The 1986 nest was 8 m up a big aspen. The 1989 nest was 14 m up a mature balsam poplar. A juvenile was foraging on the ground at Beatton Provincial Park on 13 July 1983.

American Three-toed Woodpecker
Picoides dorsalis

Status: *Rare resident; breeds.*

Williams (1933a) recorded one along the Blueberry River on 20 May 1922. Not recorded by Cowan (1939). Penner (1976) called it an uncommon resident along the Peace River and cited three records in 1974 and 1975.

Habitat: Year-round: Mature and old-growth white spruce forests and large stands of white spruce within mature mixed forests. The species may require dead

and dying trees (Figure 111) to obtain wood-boring beetles, a principal food. North of the study area, along the Sikkani Chief River, Greenfield (1998) noted all sightings to be in spruce “whether dead, dying, or alive.” There was one record from black spruce muskeg within a young trembling aspen forest near Charlie Lake.



Figure 111. Different age stands of dead or dying trees, especially spruce, attract foraging American Three-toed Woodpecker throughout the North Peace River region. *Photo by R. Wayne Campbell, North of Fort St. John, BC, 18 June 1986.*

Distribution: Year-round: Likely occurred throughout the heavily forested parts of the North Peace River region.

Occurrence: Spring: A male was excavating a nest hole at Stoddart Creek, Fort St. John, on 17 April 1977; a female was seen at km 5 of Johnstone Road,

Taylor, on 28 May 1983; and a female was foraging in a patch of stunted black spruce in muskeg along 277 Road, north-east of Charlie Lake. Summer: A male drummed on a tree along Peace Island Park Road, Taylor, on 12 June 1988 and two were found on the south bank of the Peace River east of the mouth of Lynx Creek on 26 July 1985. Autumn: Two were at Beaton Provincial Park on 20 September 1981; one was at Stoddart Creek in Fort St. John on 22 October 1983; and a male on 21 November 1982, the latter site during minus 30° C weather. Winter: A male was at Baldonnel on 21 December 1981 (Greg Saxon pers. comm.) and a male was drumming with a female nearby at Beaton Provincial Park on 26 February 1983.

Breeding: Only two records but probably more common. A male was seen excavating what was probably a nest site in April 1977 and a male was feeding a juvenile at Beaton Provincial Park on 3 July 1997.

Black-backed Woodpecker

Picoides arcticus

Status: *Very rare resident; may breed.*

Not recorded by Williams (1933a), Cowan (1939) or Penner (1976).

Habitat: Year-round: Recent forest fire burns attract this species to forage on outbreaks of wood-boring insects. It is also found in mature boreal forest, primarily among spruce. Found three times in a climax stand of white spruce with some fallen trees on which the birds were foraging.

Distribution: Year-round: Five records: Three of these at Stoddart Creek in Fort St. John, one at the mouth of the Halfway River, and one at Mile 130, Alaska Highway, in a forest fire burn.

Occurrence: Spring: Male in poplar burn at the mouth of the Halfway River on 30 April 1978. Summer: Male in burn, Mile 130, Alaska Highway, on 23 June 1984. Autumn: Female at Stoddart Creek in Fort St. John on 2 November 1975, male on 8 September 1985, and a male on 9 October 1986.

Northern Flicker

Colaptes auratus

Status: *Uncommon to fairly common spring and autumn migrant and summer visitor; breeds.*

Williams (1933a) found the flicker (Figure 112) to be “scattered sparingly” over the Peace District. Cowan (1939) found it not abundant but widely distributed in the eastern part of the Peace River District. Penner (1976) termed it a common summer breeder along the Peace River.

Habitat: Migration and Breeding: Deciduous and mixed forest openings, and open areas with scattered trees, muskegs, forest edges, beaver ponds, burns, south-facing breaks, farms, and suburban settings. Cowan (1939) felt that since trembling aspens were generally too small for nest hole construction and spruce was not generally used, the flicker was largely confined in its nesting to balsam poplar areas. Too few nests were found in the North Peace River to verify this statement.

Distribution: Migration and Breeding: Widely distributed throughout the North Peace River region.

Occurrence: Spring: Ten arrival records (1980 to 1989) ranged from 14 April to 7 May, with eight records between 20 April and 30 April. Of interest is a flock of 30 flickers seen along 103 Road in Fort St. John on 6 May 1988. Summer: During the third or fourth weeks of August flickers became locally frequent with small flocks noted. Peace Island Park (Taylor) with its open poplar forest and dense understory of red-osier dogwood (*Cornus stolonifera*) attracted flickers which feed upon the fruit. For example, 10 were encountered there on 24 August 1987. Autumn: Eight final autumn records (1981 to 1988) ranged from 7 to 29 September.

Breeding: Nest excavation was seen in the South Peace as early as 15 May (Cowan 1939). A nest at 10 m in a deciduous snag at Stoddart Creek in Fort St. John, contained small young on 14 June 1980. The female removed fecal sacs. An adult was carrying a fecal sac at km 6.5 of the Upper Cache Road on

9 June 1984. Records of recently fledged young began in early July. An adult was followed by two begging fledglings on 3 July 1981 along Johnstone Road, Taylor. Two adults and two fledglings were at km 3 of Johnstone Road on 8 July 1984. A recently fledged bird was seen along Peace Island Park Road on 9 July 1997 as was another on 112 Road south of North Pine 5 July 1998.

Comments: Northern Flicker (Figure 112) is treated as a species with no differentiation between the subspecies “Yellow-shafted” Flicker (*C. a. auratus*) and “Red-shafted” Flicker (*C. a. cafer*).



Figure 112. Most records of flickers in the North Peace River region are “Yellow-shafted” but “Red-shafted” and birds with intermediate plumage are also present. *Photo by R. Wayne Campbell.*

Pileated Woodpecker

Dryocopus pileatus

Status: *Rare resident; probably breeds.*

Not recorded by Williams (1932). Cowan (1939) did not encounter this species but reported that a pair had been seen by resident Ted Morton at Bear Flat during January 1939. Penner (1976) called it an uncommon resident along the Peace River Valley.

Habitat: Year-round: Almost entirely restricted to extensive mixed mature and old-growth forest in the valley of the Peace River and its tributaries such as Beaton River, Stoddart Creek, and St. John Creek. This species requires big trees for nesting and dying and dead trees for foraging.

Distribution: Year-round: Heavy forest along the Peace River and its tributaries. It has been seen at Hudson's Hope, Farrell Creek, Halfway River mouth, Bear Flat, Stoddart Creek, St. John Creek, and Taylor, Mile 65 (Alaska Highway), Beaton Provincial Park, and Goodlow.

Occurrence: Spring: Records increased sharply in April and May, probably the result of this species' frequent, loud vocalizations at the start of the breeding season. Summer: Number of records remained stable. Autumn and Winter: There may have been some withdrawal in the autumn and winter, or the absence of winter records may simply reflect reduced observer effort during the cold months.

Breeding: Likely breeds but definitive evidence is lacking. Indirect evidence includes a pair copulating amid large balsam poplars at the mouth of Farrell Creek on 5 May 1979 and a male drumming on a log house on 10 May 1983 along 281A Road, west of Charlie Lake.

Comments: One was seen eating red-osier dogwood berries along Johnstone Road, Taylor, on 8 October 1988.

Summary

Between 1975 and 1999, 143 nonpasserine bird species were found in the North Peace River region. Of these, 47 species were regularly occurring migrants, passing through the area but not staying to breed. These included Greater White-fronted Goose, Snow Goose (rare), Tundra Swan, Eurasian Wigeon (rare), Greater Scaup (uncommon; Figure 113), Surf Scoter (occasionally summers), Long-tailed Duck, Red-breasted Merganser, Red-throated Loon (rare), Pacific Loon, Common Loon (may breed), Western Grebe (occasionally summers), Osprey (breeds south of study area), Sabine's Gull (rare), Bonaparte's Gull (commonly summers), Franklin's Gull (commonly summers), Mew Gull, Ring-billed Gull, California Gull, Herring Gull, Thayer's Gull (rare), Glaucous Gull (rare), Common Tern, Arctic Tern, Parasitic Jaeger (rare), Rough-legged Hawk (very rarely winters), Sandhill Crane, Black-bellied Plover, American Golden-Plover, Semipalmated Plover, Whimbrel, Hudsonian Godwit, Ruddy Turnstone, Sanderling, Semipalmated Sandpiper, Western Sandpiper, Least Sandpiper, White-rumped Sandpiper, Baird's Sandpiper, Pectoral Sandpiper, Sharp-tailed Sandpiper (rare), Dunlin, Stilt Sandpiper, Buff-breasted Sandpiper (rare), Short-billed Dowitcher, Long-billed Dowitcher, and Red-necked Phalarope.

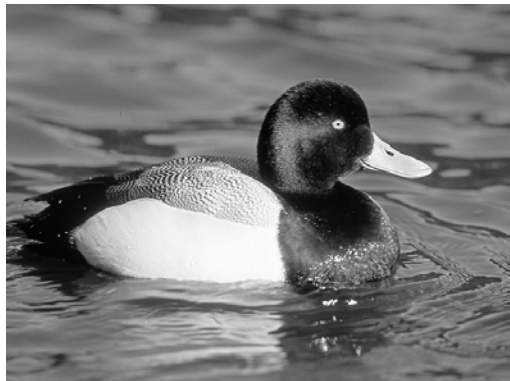


Figure 113. While Greater Scaup is a common migrant through the interior of British Columbia it is a rare to uncommon migrant in the Peace River region. *Photo by R. Wayne Campbell.*

Timing and peaks of migratory movement were determined for most of these species. Since migratory nonpasserine species were predominately birds that required wetlands in one form or another, North Peace River region wetlands, including its streams, lakes, ponds and sewage lagoons, proved to be of great importance as staging and foraging areas. The monitoring of Fort St. John's north and south sewage lagoons produced records of some of the largest and most species-diverse shorebird populations ever seen in the interior of British Columbia and established that a major shorebird migratory route passes through the North Peace River region.

Forty-two species breed in the North Peace River region but winter elsewhere. These included Canada Goose, Trumpeter Swan, Gadwall, American Wigeon, Mallard, Blue-winged Teal, Northern Shoveler, Northern Pintail, Green-winged Teal, Canvasback, Redhead, Ring-necked Duck, Lesser Scaup, White-winged Scoter, Bufflehead, Common Goldeneye, Barrow's Goldeneye, Common Merganser, Ruddy Duck, Pied-billed Grebe, Horned Grebe, Red-necked Grebe, Eared Grebe, Northern Harrier, Sharp-shinned Hawk, Broad-winged Hawk, Red-tailed Hawk, American Kestrel, Merlin, Peregrine Falcon, Sora, American Coot, Killdeer, Spotted Sandpiper, Lesser Yellowlegs, Upland Sandpiper, Wilson's Snipe, Wilson's Phalarope (Figure 114), Black Tern, Northern Saw-whet Owl, Yellow-bellied Sapsucker, and Northern Flicker.



Figure 114. Wilson's Phalarope is a locally common breeding species in the entire North Peace River region but nests are difficult to locate unless an incubating male is flushed. *Photo by R. Wayne Campbell, Boundary Lake, BC, 24 June 1998.*

A further 20 species likely breed in the North Peace River region but nesting was not confirmed. These included Cinnamon Teal, Harlequin Duck (which may have had its breeding habitat within the North Peace River region flooded by the construction of the W. A. C. Bennett and Site One dams), Hooded Merganser, Spruce Grouse, Common Loon, American Bittern, Cooper's Hawk, Prairie Falcon, Yellow Rail, Barred Owl, Great Gray Owl, Long-eared Owl, Short-eared Owl, Boreal Owl, Common Nighthawk, Calliope Hummingbird, Rufous Hummingbird, Belted Kingfisher, Black-backed Woodpecker and Pileated Woodpecker.

Thirteen nonpasserine bird species were considered resident with at least some individuals of their North Peace River region populations found in the region year-round. These include Mallard, Common Goldeneye, Common Merganser, Ruffed Grouse, Sharp-tailed Grouse, Bald Eagle, Northern Goshawk, Golden Eagle, Great Horned Owl, Northern Saw-whet Owl, Downy Woodpecker, Hairy Woodpecker, and American Three-toed Woodpecker.

Since Cowan's book was published in 1939 several species have expanded their distribution ranges northwards to include the North Peace River region. Perhaps most spectacular in sheer numbers have been Eared Grebes which were not recorded by Cowan (1939). By the mid-1970s, Eared Grebes were breeding at locations like Cecil Lake in some of the largest colonies in the province. Gadwall and Ring-necked Ducks (Figure 115) spread northwards and now nest in the North Peace River region. Cinnamon Teal may nest but proof is needed. With its nesting at Boundary Lake in the 1990s, the Trumpeter Swan reclaimed nesting ground it had lost when its populations were drastically reduced by indiscriminate shooting during the 1800s. Broad-winged Hawk first appeared in the North Peace River region in 1974 (Campbell et al. 1990b). By the year 2008, it was appearing regularly in spring and summer across northeastern B.C. to Prince George. One of the most recent birds to extend its range into the North Peace River region and thence British Columbia is Yellow Rail, which is represented in this study by its first record in the province, at Boundary Lake.



Figure 115. Bird populations are dynamic and constantly changing. At least six species have extended their breeding ranges northward into the North Peace River region including Ring-necked Duck. *Photo by R. Wayne Campbell.*

Several nonpasserine species were recorded outside their normal range. These included Brant (one record), American Black Duck (four records), Wood Duck (two records; Figure 116; see Campbell in press), Black Scoter (two records), Red-throated Loon (11 records), American White Pelican (two records), Double-crested Cormorant (three records), Great Blue Heron (13 records), American Avocet (nine records), Willet (one record), Marbled Godwit (two records), Little Gull (one record), Thayer's Gull (two records), Caspian Tern (one record), Forster's Tern (four records), Northern Pygmy-Owl (two records), Long-eared Owl (one record), Vaux's Swift (one record), and Ruby-throated Hummingbird (twelve records). Some of these birds are genuine strays, like the Little Gull, which is unlikely to re-occur for many years, but others may prove to have been pioneers, spreading into the North Peace River region where eventually they will become regularly occurring members of the avi-fauna. †



Figure 116. Over the past two decades Wood Duck has extended its breeding range into north-central British Columbia and vagrant occurrences now being reported in the south Peace River region. *Photo by R. Wayne Campbell.*

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