

---

# Extra-limital observations of Sedge Wren and other birds in northeastern British Columbia and southwestern Northwest Territories

Garry E. Hornbeck<sup>1</sup> and Ray Wershler<sup>2</sup>

<sup>1</sup> 312 Cedarille Crescent S.W., Calgary, Alberta T2W 2H7; e-mail: hornbeck@telusplanet.net

<sup>2</sup> 8254 Edgebrook Drive N.W., Calgary, Alberta T3A 4K6

---

**Abstract:** A Sedge Wren (*Cistothorus platensis*) was detected during the 2002 breeding season in northeastern British Columbia near the border with the Northwest Territories. Annotations are also presented on other migratory bird species of specific interest that are at or near the edge of their breeding ranges: American Bittern, Broad-winged Hawk, Blue-headed Vireo, Philadelphia Vireo, Gray-cheeked Thrush, Cedar Waxwing, Cape May Warbler, Bay-breasted Warbler, Mourning Warbler, Canada Warbler and Le Conte's Sparrow. A list of 91 species observed in the project area is also presented.

**Key words:** *Cistothorus platensis*, extra-limital, Fort Liard, migratory passerines, northeastern British Columbia, pipeline right-of-way, point-counts, Sedge Wren, southwestern Northwest Territories, transects.

---

## Introduction

While conducting bird studies along the right-of-way of the newly constructed Shiha Energy Transmission Ltd. pipeline (Shiha project area), we obtained records of several migratory birds which were beyond published ranges or had poorly known distributions. Our studies were prompted by the need for more information on bird populations in an area of expanding gas exploration and development. We know of no previous bird research in the study area, although a range of habitats have been studied for birds by point-counts in the greater area of the Liard Valley (Machtans 2000). Brief observations from portions of the valley of the Liard River were also published in Williams (1933), Rand (1944), McAllister (1989), Marven (1997) and McNicholl (2000). Other bird observations from nearby areas include those of Rand (1944) and McNicholl (2000) at several sites, Keith (1967) on Trutch Mountain (south of Fort Nelson), Griffith[s] (1973) at and near Summit Lake Pass, Erskine and Davidson (1976) primarily from the area between Steamboat Mountain and Fort Nelson, Siddle (1987) from the Fort Nelson and Trutch areas and Williams (1933) and Greenfield (1998) from the Sikanni Chief River area.

## Methods

The 25 km Shiha pipeline was constructed during March 2000. It originated south of Fort Liard and crossed the Northwest Territories border, entering British Columbia about 12 km north of Maxhamish Lake (130 km north of Fort Nelson, see Figure 1). The pipeline right-of-way had an approved width of 18 m.

We conducted bird surveys with a combination of belt transects (500 m long and 100 m wide) and 50-m-radius point-counts systematically located and centred on the right-of-way at one-km intervals. The width of the belt transects (and the point-counts) were constrained to 50 m in an attempt to reduce detectability bias and to control distance estimation. The pipeline corridor was 24 km long. In each of the two years, we did two surveys, three days apart: from 12 to 18 June 2000 (12, 14 and 15 and then again 16 to 18 June), and again from 11 to 17 June 2002 (11 to 13 and then again 14 to 17 June). Fieldwork was conducted from sunrise until approximately 09:30, for about 6 hours.

This area lies within the Boreal White and Black Spruce zone of the Great Plains physiographic region (Meidinger and Pojar 1991). Topography is subdued (varying from 442 m to 503 m above sea level and contains narrow ridges of glacial moraine (till) dominated by mixed-wood forests of

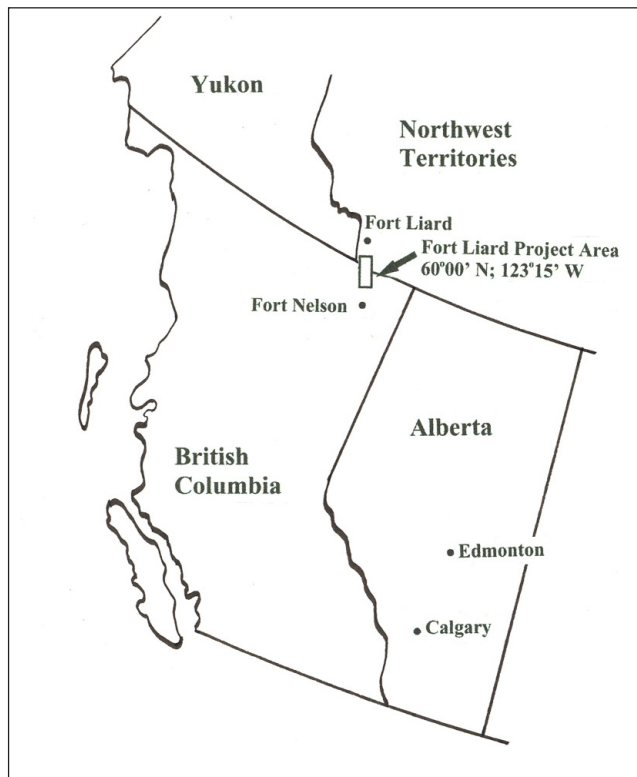


Figure 1. Location of the Shiha study area in the border region of northeastern British Columbia and southwestern Northwest Territories.

aspen (*Populus tremuloides*), balsam poplar (*P. balsamifera*) and white spruce (*Picea glauca*) and depressions in-filled with black spruce (*Picea mariana*) and tamarack (*Larix laricina*). The pipeline right-of-way crossed numerous small creeks but had been routed away from all small lakes in the region.

## Results

From the combination of transects and point-counts during the two years, we detected 91 species on the study area (Appendix). For 12 of these which were at or near previously known limits of their ranges, details are summarized in Table 1 and in the following text.

### American Bittern (*Botaurus lentiginosus*)

The booming call of the American Bittern was heard during the early morning hours of 15 June 2000 and again during early hours of 17 June 2000 (Table 1). On both occasions, the call was heard from the right-of-way in the general direction of a small lake (about 1.5 km from the pipeline right-of-way). The species was not detected during 2002 field studies. Godfrey (1986) described its breeding range as central and southern interior British Columbia, southwest-

ern Mackenzie (Great Slave Lake), Alberta, Saskatchewan, Manitoba and eastward. Campbell *et al.* (1990a) described the American Bittern as an uncommon summer visitant to the interior, north to the Peace and Fort Nelson lowlands. Field guides generally follow Godfrey's range description in excluding the northeastern corner of British Columbia (Dickinson 1999; Sibley 2000; Alsop 2002). Machtans (2000) noted that this species has been heard calling by several researchers in different years within his Liard Valley project area. Lamont (1977) indicated that people local to Fisherman Lake were aware of its call.

### Broad-winged Hawk (*Buteo platypterus*)

A single Broad-winged Hawk was observed in flight over the Shiha right-of-way on 17 June 2000 (Table 1). The species was not detected during 2002 field studies. Godfrey (1986) described the breeding range of the Broad-winged Hawk as extending across central Alberta, central Saskatchewan and eastward. Dickinson (1999) and Alsop (2002) also indicate that the breeding range extends only into east-central British Columbia, excluding the northeastern corner of the province. Campbell *et al.* (1990b) described the species as a rare summer visitant to the Peace Lowlands and showed no breeding records in the northeastern corner of the province, although several breeding records have been reported subsequently in the Fort St. John area and one in the Fort Nelson area (R. W. Campbell in Machtans (2000:672). These records are reflected in the map in Sibley (2000), showing the breeding range as in Godfrey, but with an outlying dot in the northeastern corner of British Columbia. Machtans (2000) documented eight separate observations of Broad-winged Hawks, including an active nest, during 1998-2000 in the Liard Valley. In recent years, Broad-winged Hawks have occurred increasingly frequently in both coastal and inland B.C., with nesting documented near Golden and Prince George (Stirling 2001; Wheeler 2003; D.J. Wilson, Prince George, B.C., in preparation).

### Blue-headed Vireo (*Vireo solitarius*)

A single male Blue-headed Vireo was heard singing in a mixed stand of white birch/aspen/white spruce/jack pine near the Maxhamish Gas Plant on 11 June 2002. A single male Blue-headed Vireo was heard singing in aspen/white spruce habitat on 12 June 2002 and again at this location in the same habitat on 15 June 2002 (Table 1). We had a fourth detection of a Blue-headed Vireo male singing at Beaver Lake, near Fort Nelson. The species was not recorded in our study area during mid-June 2000 field studies. Given our level of field effort, our observations indicate that Blue-headed Vireos may be relatively rare in this area. Godfrey (1986) described its distribution in western Canada as breeding in British Columbia north on the mainland to the Vanderhoof region and Peace River parklands, southwestern Mackenzie (Little Buffalo and Sass rivers probably to Fort Simpson) and northern and central Alberta. Campbell

Table 1. Observations of migratory songbirds or other species at, near or beyond their range limits in northeastern B.C. and southwestern Northwest Territories.

Species and date	UTM location <sup>1</sup>		Dominant habitat type	Notes <sup>2</sup>
	Easting	Northing Jurisdiction		
American Bittern ( <i>Botaurus lentiginosus</i> )				
15 June 2000	483516	6654936 Northwest Territories		Booming call heard in direction of lake approximately 1.5 km to northwest of our location on the Shiha right-of-way. Heard within 1 km of above location.
17 June 2000				
Broad-winged Hawk ( <i>Buteo platypterus</i> )				
15 June 2000	490522	6650568 British Columbia	Flying across right-of-way.	One was observed in flight.
Blue-headed Vireo ( <i>Vireo solitarius</i> )				
11 June 2002	496173	6645427 British Columbia	White birch/aspen/white spruce/jack pine.	One male singing near Maxhamish Gas Plant.
12 June 2002	489575	6650776 British Columbia	Aspen/white spruce.	One male singing near right-of-way.
15 June 2002	489575	6650776	Aspen/white spruce.	One male singing near right-of-way.
18 June 2002	490500	6537500 British Columbia	Aspen/white spruce.	One male singing at Beaver Lake, near Fort Nelson.
Philadelphia Vireo ( <i>Vireo philadelphicus</i> )				
16 June 2000	482989	6655778 Northwest Territories	Aspen/white birch/willow.	One male singing within 50 m of right-of-way.
11 June 2002	494564	6646971 British Columbia	Aspen/white spruce.	One male observed from right-of-way.
12 June 2002	488561	6650863 British Columbia	Aspen/white birch/willow.	Two males singing within 50 m of right-of-way.
12 June 2002	487558	6650986 British Columbia	Aspen/white spruce.	One male singing within 50 m of right-of-way.
13 June 2002	482369	6656604 Northwest Territories	Aspen/white birch/willow.	One male singing within 50 m of right-of-way.
Sedge Wren ( <i>Cistothorus platensis</i> )				
12 June 2002	492062	6649140	Creek channel dominated by grass and sedge with margin of alder and willow.	One male singing near right-of-way at creek crossing.
15 June 2002		British Columbia		
Gray-cheeked Thrush ( <i>Catharus minimus</i> )				
16 June 2000	482989	6655778 Northwest Territories	Aspen/white birch/willow.	One male singing within 50 m of right-of-way.
Cedar Waxwing ( <i>Bombycilla cedrorum</i> )				
12 June 2002	490552	6650568 British Columbia	Black spruce.	One bird observed flying over right-of-way.
14 June 2002	479461	6660458 Northwest Territories	Aspen/white spruce.	One bird observed near right-of-way.
16 June 2002	487558	6650986 British Columbia	Aspen/white spruce.	Two birds observed near right-of-way.
Cape May Warbler ( <i>Dendroica tigrina</i> )				
11 June 2002	496173	6645427 British Columbia	Black spruce.	One male singing near right-of-way.
14 June 2002	479702	6659584 Northwest Territories	White spruce.	One male singing near right-of-way.
Bay-breasted Warbler ( <i>Dendroica castanea</i> )				
17 June 2002	480390	6658859 Northwest Territories	Aspen/white spruce.	One male observed singing within 50 m of right-of-way.
Mourning Warbler ( <i>Oporornis philadelphia</i> )				
17 June 2000	486561	6651100 British Columbia	Aspen/white spruce.	One male within 50 m of right-of-way.
15 June 2002	488561	6650863 British Columbia	Aspen/white spruce.	Two males singing near right-of-way.
16 June 2002	488561	6650863 British Columbia	Aspen/white spruce.	One male singing near right-of-way. ▶

◀ Table 1 Species and date	UTM location <sup>1</sup>		Dominant habitat type	Notes <sup>2</sup>
	Easting	Northing Jurisdiction		
<i>Canada Warbler (Wilsonia canadensis)</i>				
12 June 2002	488561	6650863 British Columbia	Aspen/white birch/willow.	One male singing within 50 m of right-of-way.
16 June 2002	484621	6653210 Northwest Territories	Aspen/white spruce.	One male singing within 50 m of right-of-way. A Canada Warbler was also heard singing during a point count at the same location.
<i>Le Conte's Sparrow (Ammodramus leconteii)</i>				
18 June 2000	496700	6645900S British Columbia	edge habitat within black spruce.	One male singing northwest of Maxhamish Gas Plant.
16 June 2002	496173	6645427 British Columbia	Sedge habitat within black spruce.	One male observed singing east of Maxhamish Gas Plant.

<sup>1</sup> Universal Transverse Mercator map projection (UTM) grid references are from Grid Zone 10V, NAD 1927.

<sup>2</sup> Detected within 50 m of the pipeline right-of-way means that the bird was recorded during systematic transect counts; other observations were obtained incidentally in the Shiha project area.

*et al.* (1997) report that breeding records in the northeastern part of the province are scarce, but that breeding has been confirmed in the Peace Lowland and near the Yukon border. These authors suggested that the breeding distribution was likely more widespread in the northern interior of B.C. than suggested by available data and as illustrated by Dickinson (1999) and Alsop (2002). Blue-headed Vireos in the Fort Nelson area (Erskine and Davidson 1976; our Table 1) are near their northern range limit (Campbell 2000) and have been identified along the Sikanni Chief River during 1992-1997 (Greenfield 1998) and in the Liard River Valley during 1997-2000 (Machtans 2000). Our observations support the habitat-based suggestion of Campbell *et al.* (1997) that breeding may be more widespread.

#### Philadelphia Vireo (*Vireo philadelphicus*)

A Philadelphia Vireo was heard singing on 16 June 2000 and five individuals were heard singing on 11, 12 and 13 June 2002 (Table 1). These birds were heard in aspen/white birch/tall willow and aspen/white spruce habitat types. These observations are farther north than suggested by Godfrey (1986), who described the species' breeding distribution in western Canada as central-eastern British Columbia (Peace River parklands), northern, central and southcentral Alberta and northwestern and central Saskatchewan and central and southern Manitoba. Enns and Siddle (1996) recorded the species near Fort Nelson during 1992 field surveys in what they referred to as an "aberrant record," although Erskine and Davidson (1976) reported several in the Fort Nelson area in the 1970s. In addition, Chris Siddle (1987), Jack Bowling, Gary Davidson and Linda Van Damme encountered this species near the Fort Nelson airport in 1986. Campbell *et al.* (1997) identified the species as a breeding bird in the northeastern corner of British Columbia, closely associated with the distribution of deciduous forests. Philadelphia Vireos have been identified in the Liard River Val-

ley during 1997-2000 research (Machtans 2000), as well as near Kwokullie Lake and along the Sikanni Chief and Tuchodie rivers (Cooper *et al.* 1997d; Greenfield 1998). These are at their range limit (Dickinson 1999; Alsop 2002).

#### Sedge Wren (*Cistothorus platensis*)

Two records of Sedge Wren (formerly known as Short-billed Marsh Wren) were obtained by song from one location adjacent to the right-of-way. A singing male was detected first on 12 June 2002 in the early morning (between 05:45 and 06:10) and again at 06:10 on 15 June (Table 1). The Sedge Wren was within 75 m of the right-of-way in a small creek channel containing grasses and sedges (*Carex* spp.) and margins of alder (*Alnus* spp.) and willow (*Salix* spp.). The bird was not seen, but identified by co-author Ray Wershler by song. The song of Sedge Wrens can be confused only with that of Marsh Wrens (*Cistothorus palustris*), but Sedge Wrens sing a softer, less harsh song. Wershler has led field trips to the Cold Lake region of Alberta, where this species is not uncommon. He has seen and heard Sedge Wrens many times in north-central Alberta, as well as in eastern and southeastern USA. These observations were made about 2.1 km south of the Northwest Territories border. We did not attempt confirmation of breeding evidence. Sedge Wrens were neither heard nor observed in the Shiha project area during bird surveys conducted from 12 to 18 June 2000.

According to Godfrey (1986) and Herket *et al.* 2001:2, Sedge Wrens in western Canada breed from central-eastern Alberta through southern Saskatchewan and southern Manitoba. The Sedge Wren was not reported in British Columbia by Campbell *et al.* (1997) or Preston *et al.* (2005) and was not listed as a rare bird in British Columbia (Fraser *et al.* 1999). Sedge Wren was not reported in this area of western Canada by Dickinson (1999), Campbell (2000) or Alsop (2002). Its closest documented breeding range is in Alberta

at sites far southeast of our study site (Weber 1974; Semenchuk 1992; Herkert *et al.* 2001). Our observation of a Sedge Wren in northeastern British Columbia is thus significantly beyond the published range of this species. As the instability of marsh habitat results in low breeding site tenacity in Sedge Wrens (Herkert *et al.* 2001:2), like many other marsh-breeding birds (McNicholl 1985 and references cited therein), several years of observations in the area may be required to determine whether this observation resulted from extra-limital wandering or regular, albeit erratic, use of ephemerally suitable habitat. A second B.C. record of the Sedge Wren occurred at the University of British Columbia, Vancouver on 29 and 30 October 2005 (Candido 2006). As documentation of this bird was of sufficiently high quality to add Sedge Wren to the provincial list, it is included in the latest provincial check-list (Campbell *et al.* 2007).

#### **Gray-cheeked Thrush (*Catharus minimus*)**

A male was heard singing on 16 June 2000 at 08:07 (Table 1) about 5 km north of the B.C.-Northwest Territories boundary. This species was not detected in the study area during our mid-June 2002 bird studies. Godfrey (1986) described the breeding distribution of this species in western Canada as near tree-line across Canada to northwestern British Columbia, southern Mackenzie and northern Alberta. Campbell *et al.* (1997) described it as a very rare to rare migrant and summer visitant to the Taiga Plains of northeastern British Columbia. Dickinson (1999) and Alsop (2002) show its southern range limit extending into northeastern British Columbia. The species was not identified in the Liard Valley by Machtans (2000), but Gray-cheeked has been noted in the Fisherman Lake area about 35 km northwest of our project area (Lamont 1977). Our data support the classification of Campbell *et al.* (1997) of Gray-cheeked Thrush as rare in B.C. during the breeding season near its southern range limit and the assertion by Greenfield (1998) that the thrushes heard along the Sikanni Chief River in 1922 by Williams (1933) and identified as Swainson's (*Catharus ustulatus*) or Gray-cheeked were presumably Swainson's.

#### **Cedar Waxwing (*Bombycilla cedrorum*)**

During transect counts in mid-June 2002, one was observed at 07:35 on 12 June along the right-of-way (Table 1). This species was also observed incidentally on two other occasions in the project area in mid-June 2002. Cedar Waxwing was not detected in the project area during field studies in June 2000. Godfrey (1986) indicated that in western Canada it breeds across southern areas north to north-central British Columbia and across Alberta except the northwestern corner. Campbell *et al.* (1997) suggest that breeding may occur in northern British Columbia more often than is known at present, particularly in the Peace Lowlands. Dickinson (1999) and Alsop (2002) both indicate that Cedar Waxwings are at their range limit in northeastern British Columbia. Machtans (2000) noted Cedar Waxwing in

the Liard Valley. Erskine and Davidson (1976) reported them at three sites in the Fort Nelson lowlands and Greenfield (1998) found them fairly common in four of six years along the Sikanni Chief River.

#### **Cape May Warbler (*Dendroica tigrina*)**

In mid-June 2002, two incidental observations were obtained; a male was singing near the right-of-way on 11 June near the Maxhamish Gas Plant and in a different location a male was singing on 14 June in the Northwest Territories about 8 km north of the B.C. border (Table 1). Cape May Warblers were not detected in the project area during June 2000. Godfrey (1986) described its breeding distribution in western Canada as southwestern and central-southern Mackenzie (Fort Simpson, Slave River), central-eastern British Columbia, northern and central Alberta, central Saskatchewan and central and southeastern Manitoba. This range description omits northeastern British Columbia, as do those of Dickinson (1999) and Alsop (2002). Campbell *et al.* (2001) described its breeding distribution in British Columbia as the Fort Nelson Lowlands of the Taiga Plains in the northeastern corner of the province. These authors mention that knowledge of the breeding distribution is limited because of its scarcity and lack of observers that visit its habitat. Enns and Siddle (1996) recorded Cape May Warblers along the Kledo and Fort Nelson rivers, one of two areas in B.C. where most records are concentrated (Erskine and Davidson 1976; Siddle 1987; Cooper *et al.* 1997c). More recently, Greenfield (1998) found Cape May Warblers in four of six years along the Sikanni Chief River, Eckert (*vide* Greenfield 1998) found them in the extreme southeastern Yukon and Machtans (2000) identified them as very rare in the Fort Liard area.

#### **Bay-breasted Warbler (*Dendroica castanea*)**

A male was observed singing in aspen/white spruce habitat on 17 June 2002 (Table 1). No Bay-breasted Warblers were detected during systematic counts in the study area in mid-June 2000, and none were recorded incidentally during these field studies. According to Godfrey (1986), the range of the Bay-breasted Warbler extends throughout the Taiga and Boreal Plains of northeastern British Columbia. Godfrey (1986) and Cooper *et al.* (1997a) mention that the limits of its breeding range may fluctuate considerably, depending on food availability. Enns and Siddle (1996) detected this species north and west of Fort Nelson, extending into the Muskwa River region. Several earlier records were reported in the Fort Nelson lowlands (Erskine and Davidson 1976; Siddle 1987). Campbell *et al.* (2001) mention that knowledge of its breeding distribution is limited because of its scarcity; however, they note that it likely breeds locally in suitable habitats of the Taiga Plains and Liard Plains ecoprovinces. Bay-breasted Warblers were identified in the Liard River Valley by Rand (1944) in 1943 and in research during 1997-2000 by Machtans (2000), at an unspecified

site between the Liard and Beaver rivers in September 1996 (Marven 1997), on the bank of Kenai Creek along the Sikanni Chief River in 1995 (Greenfield 1998) and along La Biche River, Yukon in 1995 (Eckert *vide* Greenfield 1998). Dickinson (1999) and Alsop (2002) do not show its breeding range extending into northeastern British Columbia.

#### **Mourning Warbler (*Oporornis philadelphia*)**

A single male was heard singing on 17 June 2000 in aspen/white spruce habitat (Table 1). No Mourning Warblers were detected on transect counts during June 2002, although three males were recorded incidentally by song in the project area on 15 and 16 June 2002. Godfrey (1986) indicated that the Mourning Warbler in western Canada breeds in northeastern British Columbia and central Alberta. Erskine and Davidson (1976) noted that Mourning Warbler "probably breeds" in the Fort Nelson area in the first study to report its occurrence in B.C. Weber (1976) reported an earlier probable sight record from Fort Nelson and Siddle (1987) and Enns and Siddle (1996) subsequently reported additional observations along the Fort Nelson River system. Weber (1976) also reported a probable 1971 sight record from Liard Hot Springs. Enns and Siddle (1996) also detected this species in the B.C. portion of the Liard River system, while Greenfield (1998) observed four near Fort Liard, Northwest Territories in June 1992 and Machtans (2000) identified Mourning Warbler in the valley during his 1997-2000 bird studies. Campbell *et al.* (2001) indicated that the Mourning Warbler reaches the limit of its confirmed breeding range in the Boreal Plains of northeastern British Columbia, as reflected in the range maps of Dickinson (1999) and Alsop (2002), but that breeding likely occurs in all regions of the Taiga Plains and Boreal Plains in suitable habitat. Enns and Siddle (1996) indicated that further studies of its distribution are needed. Such studies have documented its more extensive distribution in the Fort Nelson and Liard valleys documented above, as well as sites at Kotcho Lake (Enns and Siddle 1996), the La Biche River of the south-eastern Yukon (Eckert *vide* Greenfield 1998) and along the Sikanni Chief River, where Greenfield (1998:15) considered them "regular but uncommon."

#### **Canada Warbler (*Wilsonia canadensis*)**

Single singing males were heard on transect counts on 12 and 16 June 2002 at two different locations in the Shiha project area (Table 1). A singing male was also detected in a point-count near the location where it was heard on 16 June 2002. Canada Warblers were not detected in the project area during 2000. Godfrey (1986) described the northwestern limit of its breeding distribution as northeastern British Columbia, including the Peace River district and probably Fort Nelson region. Enns and Siddle (1996) observed this species west of this range along the Peace and Fort Nelson river systems, with "an aberrant sighting" near Maxhamish Lake. Campbell *et al.* (2001) described its breed-

ing range as extreme southeastern Yukon, northeastern British Columbia and northern Alberta. Most summer records are from the Peace Lowlands of the Taiga Plains (Erskine and Davidson 1976; Siddle 1987; Enns and Siddle 1996; Cooper *et al.* 1997b; Campbell *et al.* 2001). Campbell *et al.* (2001) commented that breeding populations are small and local. Machtans (2000) identified the Canada Warbler in the Liard Valley as a common breeder in old mixedwood forest beyond its published range (Godfrey 1986; Dickinson 1999). Additional records beyond that range include along the Sikanni Chief River in three of six years from 1992 to 1997 (Greenfield 1998), north of Kotcho Lake (R. W. Campbell *vide* Greenfield 1998) and along the La Biche River in south-eastern Yukon (Eckert *vide* Greenfield 1998). Greenfield (1998) noted that along the Sikanni Chief River and some other sites it occurred primarily in understory shrubbery on steep slopes along major watercourses.

#### **Le Conte's Sparrow (*Ammodramus leconteii*)**

A male Le Conte's Sparrow was singing at 04:00 on 18 June 2000 in a wet sedge meadow northwest of the Maxhamish Gas Plant. A male was also observed singing at 16:45 on 16 June 2002 in a wet sedge meadow east of the Maxhamish Gas Plant (Table 1). The species was not detected on transects or with point-counts along the Shiha right-of-way in mid-June of either 2000 or 2002. Godfrey (1986) described the breeding range as southcentral Mackenzie and central-eastern British Columbia but not including the northeastern corner of the province. Enns and Siddle (1996) located five birds in the Fort Nelson and Kotcho Lake areas in 1992. Campbell *et al.* (2001) described its breeding range as local in northeastern British Columbia and present in small numbers every summer at several localities in the Peace Lowlands and Fort Nelson Lowlands. A singing male was also at a site along the Sikanni Chief River, between the Fort St. John and Ft. Nelson areas in 1997 (Greenfield 1998). Although both Dickinson (1999) and Alsop (2002) indicate northeastern British Columbia as its range limit, Machtans (2000) listed it as present during the breeding season along the Northwest Territories portion of the Liard River and researchers found ten singing near La Biche River in south-eastern Yukon in 1995 (C. Eckert *vide* Greenfield 1998).

## **Acknowledgements**

Shiha Energy Transmission Ltd. commissioned Wildlife & Company Ltd. (WCL) to conduct a migratory bird monitoring program along their newly constructed pipeline right-of-way. Ms. Shirley Maaskant and Mr. Gord Ferguson, Manager of Corporate Compliance for Paramount Resources, were instrumental in the management of the field program. Mr. Ross Dickson and Mr. Ray Wershler were hired under contract to WCL and were primarily responsible for bird identification in the field. Craig Machtans, Canadian

Wildlife Service, Yellowknife, is acknowledged for support and help with this bird monitoring program. Dr. Martin K. McNicholl, Tony Greenfield and Ken H. Morgan added many helpful comments to the draft manuscript which greatly improved the overall paper.

## Literature Cited

- Alsop, F. J. 2002. Birds of Canada. Dorling Kindersley Limited, Toronto.
- American Ornithologists' Union 1998. Check-list of North American birds. Seventh edition. American Ornithologists' Union, Washington.
- Campbell, [R.] W. 2000. Fort Nelson area. p. 37-40 in J. C. Finlay (ed.). A bird-finding guide to Canada. Second edition. McClelland & Stewart, Toronto.
- Campbell, R. W., N. K. Dawe, I. McTaggart-Cowan, J. M. Cooper, G. W. Kaiser and M. C. E. McNall 1990a. The birds of British Columbia. Volume 1. Royal British Columbia Museum, Victoria.
- Campbell, R. W., N. K. Dawe, I. McTaggart-Cowan, J. M. Cooper, G. W. Kaiser and M. C. E. McNall 1990b. The birds of British Columbia. Volume 2. Royal British Columbia Museum, Victoria.
- Campbell, R. W., N. K. Dawe, I. McTaggart-Cowan, J. M. Cooper, G. W. Kaiser, M. C. E. McNall and G. E. J. Smith 1997. The birds of British Columbia. Volume 3. UBC Press, Vancouver.
- Campbell, R. W., N. K. Dawe, I. McTaggart-Cowan, J. M. Cooper, G. W. Kaiser, A. C. Stewart and M. C. E. McNall 2001. The birds of British Columbia. Volume 4. UBC Press, Vancouver.
- Campbell, R. W., M. I. Preston, L. M. Van Damme, T. Greenfield and M. K. McNicholl (compilers) 2007. Wildlife checklists of British Columbia—the birds of British Columbia. Biodiversity Centre for Wildlife Studies Special Publication No. 3, Victoria.
- Candido, E. P. M. 2006. First record of the Sedge Wren in British Columbia. *British Columbia Birds* 14:21-24.
- Cooper, J. M., K. A. Enns and M. G. Shepard 1997a. Status of the Bay-breasted Warbler in British Columbia. B.C. Ministry of Environment, Lands and Parks, Wildlife Branch. Wildlife Working Report WR-79, Victoria.
- Cooper, J. M., K. A. Enns and M. G. Shepard 1997b. Status of the Canada Warbler in British Columbia. B.C. Ministry of Environment, Lands and Parks, Wildlife Branch. Wildlife Working Report WR-81, Victoria.
- Cooper, J. M., K. A. Enns and M. G. Shepard 1997c. Status of the Cape May Warbler in British Columbia. B.C. Ministry of Environment, Lands and Parks, Wildlife Branch. Wildlife Working Report WR-82, Victoria.
- Cooper, J. M., K. A. Enns and M. G. Shepard 1997d. Status of the Philadelphia Warbler in British Columbia. B.C. Ministry of Environment, Lands and Parks, Wildlife Branch. Wildlife Working Report WR-84, Victoria.
- Dickinson, M. B. 1999. Field guide to the birds of North America. Third edition. National Geographic Society, Washington, D.C.
- Enns, K. A. and C. Siddle 1996. The distribution, abundance, and habitat requirements of selected passerine birds of the boreal and taiga plains of British Columbia. Ministry of Environment, Lands and Parks, Wildlife Branch. Wildlife Working Report Number WR-76, Victoria.
- Erskine, A. J. and G. S. Davidson 1976. Birds in the Fort Nelson lowlands of northeastern British Columbia. *Syesis* 9:1-11.
- Fraser, D. F., W. L. Harper, S. G. Cannings and J. M. Cooper 1999. Rare birds of British Columbia. British Columbia Ministry of Environment, Lands and Parks, Wildlife Branch and Resources Inventory Branch, Victoria.
- Godfrey, W. E. 1986. The birds of Canada. Revised edition. National Museums of Canada, National Museum of Natural Sciences, Ottawa.
- Greenfield, T. 1998. Birds observed along the Sikanni Chief River, north-eastern British Columbia 1992-1997. *British Columbia Birds* 8:3-18.
- Griffith[s], D. E. 1973. Notes on the birds at Summit Lake Pass British Columbia. *Discovery* 2:45-51.
- Herket, J. E., D. E. Kroodsmma and J. P. Gibbs 2001. *Cistothorus platensis* Sedge Wren. Number 582 in A. Poole and F. Gill (eds). The birds of North America. The Birds of North America, Inc., Philadelphia.
- Keith, S. 1967. New bird records from Alaska and the Alaska Highway. *Canadian Field-Naturalist* 81:196-200.
- Lamont, S. M. 1977. The Fisherman Lake Slave and their environment: a story of flora and faunal resources. M. Sc. thesis, University of Saskatchewan, Saskatoon.
- Machtans, C. S. 2000. Extra-limital observations of Broad-winged Hawk, *Buteo platypterus*, Connecticut Warbler, *Oporornis agilis*, and other bird observations from the Liard valley, Northwest Territories. *Canadian Field-Naturalist* 114:671-679.
- Marven, D. 1997. Birding the Liard River area, British Columbia. *B.C. Birding* 7(1):11-12.
- McAllister, J. 1989. The Dempster and other highways of the northwest. *Birdfinding in Canada* 9(5):23-25.
- McNicholl, M. K. 1985. Avian wetland habitat functions affected by water level fluctuations. Chapter 6, p. 87-98 in H. H. Prince and D. M. D'Itri (eds). Coastal wetlands. Lewis Publishers, Chelsea, Michigan.
- McNicholl, M. K. 2000. Birds observed along the Alaska Highway in north-eastern British Columbia in September 1974. *B. C. Birding* 10(2):16-18.
- Meidinger, D. and J. Pojar 1991. Ecosystems of British Columbia. British Columbia Ministry of Forests, Research Branch, Victoria.

- Preston, M. I., R. W. Campbell and L. M. Van Damme 2005. British Columbia birds 2005 - species list. Biodiversity Centre for Wildlife Studies, Report Number 4. Victoria.
- Rand, A. L. 1944. Birds of the Alaska Highway in British Columbia. *Canadian Field-Naturalist* 58:111-125.
- Semenchuk, G. P. (ed.) 1992. The atlas of breeding birds of Alberta. Federation of Alberta Naturalists, Edmonton.
- Sibley, D. A. 2000. National Audubon Society the Sibley guide to birds. Alfred A. Knopf, New York.
- Siddle, C. 1987. Call of the wild: a leisurely chelek. *Birdfinding in Canada* 7(1):11-12, 17.
- Stirling, D. 2001. Increased Broad-winged Hawks in coastal British Columbia. *British Columbia Birds* 11:13-16.
- Weber, W. C. 1974. More Great Crested Flycatchers and Short-billed Marsh Wrens in Alberta. *Blue Jay* 32:230-233.
- Weber, W. C. 1976. Mourning Warbler and Northern Oriole in northeastern British Columbia. *Murrelet* 57:68-69.
- Wheeler, B. K. 2003. Raptors of western North America. Princeton University Press, Princeton, New Jersey.
- Williams, M. Y. 1933. Biological notes, covering parts of the Peace, Liard, Mackenzie and Great Bear river basins. *Canadian Field-Naturalist* 47:23-31.

## Appendix. Birds detected in the Shiha Project area in mid-June 2000 and 2002

English name	Scientific name	English name	Scientific name
Canada Goose	<i>Branta canadensis</i>	Barn Swallow	<i>Hirundo rustica</i>
Trumpeter Swan	<i>Cygnus buccinator</i>	Black-capped chickadee	<i>Poecile atricapillus</i>
Mallard	<i>Anas platyrhynchos</i>	Boreal Chickadee	<i>Poecile hudsonica</i>
Blue-winged Teal	<i>Anas discors</i>	Red-breasted Nuthatch	<i>Sitta canadensis</i>
Green-winged Teal	<i>Anas crecca</i>	Winter Wren	<i>Troglodytes troglodytes</i>
Bufflehead	<i>Bucephala albeola</i>	Sedge Wren	<i>Cistothorus platensis</i>
Common Goldeneye	<i>Bucephala clangula</i>	Ruby-crowned Kinglet	<i>Regulus calendula</i>
Ruffed Grouse	<i>Bonasa umbellus</i>	Gray-cheeked Thrush	<i>Catharus minimus</i>
Spruce Grouse	<i>Falcapennis canadensis</i>	Swainson's Thrush	<i>Catharus ustulatus</i>
Common Loon	<i>Gavia immer</i>	Hermit Thrush	<i>Catharus guttatus</i>
American Bittern	<i>Botaurus lentiginosus</i>	American Robin	<i>Turdus migratorius</i>
Northern Harrier	<i>Circus cyaneus</i>	Bohemian Waxwing	<i>Bombus garrulus</i>
Broad-winged Hawk	<i>Buteo platypterus</i>	Cedar Waxwing	<i>Bombus cedrorum</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Tennessee Warbler	<i>Vermivora peregrina</i>
American Kestrel	<i>Falco sparverius</i>	Orange-crowned Warbler	<i>Vermivora celata</i>
Sora	<i>Porzana carolina</i>	Yellow Warbler	<i>Dendroica petechia</i>
Sandhill Crane	<i>Grus canadensis</i>	Magnolia Warbler	<i>Dendroica magnolia</i>
Spotted Sandpiper	<i>Actitis macularia</i>	Cape May Warbler	<i>Dendroica tigrina</i>
Solitary Sandpiper	<i>Tringa solitaria</i>	Yellow-rumped Warbler	<i>Dendroica coronata</i>
Lesser Yellowlegs	<i>Tringa flavipes</i>	Palm Warbler	<i>Dendroica palmarum</i>
Wilson's Snipe	<i>Gallinago delicata</i>	Bay-breasted Warbler	<i>Dendroica castanea</i>
Bonaparte's Gull	<i>Larus philadelphia</i>	Blackpoll Warbler	<i>Dendroica striata</i>
Great Horned Owl	<i>Bubo virginianus</i>	Black-and-white Warbler	<i>Mniotilta varia</i>
Boreal Owl	<i>Aegolius funereus</i>	American Redstart	<i>Setophaga ruticilla</i>
Common Nighthawk	<i>Chordeiles minor</i>	Ovenbird	<i>Seiurus aurocapilla</i>
Belted Kingfisher	<i>Megasceryle alcyon</i>	Northern Waterthrush	<i>Seiurus noveboracensis</i>
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	Mourning Warbler	<i>Oporornis philadelphia</i>
Hairy Woodpecker	<i>Picoides villosus</i>	Common Yellowthroat	<i>Geothlypis trichas</i>
American Three-toed Woodpecker	<i>Picoides dorsalis</i>	Canada Warbler	<i>Wilsonia canadensis</i>
Black-backed Woodpecker	<i>Picoides arcticus</i>	Western Tanager	<i>Piranga ludoviciana</i>
Northern Flicker	<i>Colaptes auratus</i>	Chipping Sparrow	<i>Spizella passerina</i>
Pileated Woodpecker	<i>Dryocopus pileatus</i>	LeConte's Sparrow	<i>Ammodramus leconteii</i>
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Fox Sparrow	<i>Passerella iliaca</i>
Western Wood-Pewee	<i>Contopus sordidulus</i>	Lincoln's Sparrow	<i>Melospiza lincolni</i>
Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>	Swamp Sparrow	<i>Melospiza georgiana</i>
Alder Flycatcher	<i>Empidonax alnorum</i>	White-throated Sparrow	<i>Zonotrichia albicollis</i>
Least Flycatcher	<i>Empidonax minimus</i>	Dark-eyed Junco	<i>Junco hyemalis</i>
Blue-headed Vireo	<i>Vireo solitarius</i>	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>
Warbling Vireo	<i>Vireo gilvus</i>	Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Philadelphia Vireo	<i>Vireo philadelphicus</i>	Rusty Blackbird	<i>Euphagus carolinus</i>
Red-eyed Vireo	<i>Vireo olivaceus</i>	Pine Grosbeak	<i>Pinicola enucleator</i>
Gray Jay	<i>Perisoreus canadensis</i>	Purple Finch	<i>Carpodacus purpureus</i>
Common Raven	<i>Corvus corax</i>	White-winged Crossbill	<i>Loxia leucoptera</i>
Tree Swallow	<i>Tachycineta bicolor</i>	Common Redpoll	<i>Carduelis flammea</i>
Bank Swallow	<i>Riparia riparia</i>	Pine Siskin	<i>Carduelis pinus</i>
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>		

<sup>1</sup> Names follow those of the seventh edition of the American Ornithologists' Union Check-list of North American birds (American Ornithologists' Union 1998) and its subsequent supplements to 2007.