

Schaft Creek Bird Studies Baseline Report 2006



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May 2007



EXECUTIVE SUMMARY



Executive Summary

CopperFox Metals Inc. (CopperFox) has begun an initiative to develop a copper-gold-molybdenum-silver project within the Schaft Creek watershed approximately 140 km southwest of Dease Lake in north-western British Columbia. Identification of avian species in the area is an important initial step prior to suggesting mitigation measures to meet the obligations of federal and provincial standards for species protection. Avifauna that reside in the area or which migrate to the area in order to breed could potentially be affected by development, depending on the species present, their habitat requirements, and their local, regional, and National status. If rare species are identified in the area, they may also be protected by provincial and Federal regulations such as the B.C. Wildlife Act, Migratory Bird Convention Act, and Species at Risk Act (SARA).

This report summarizes the 2006 bird study baseline inventory within the Schaft Creek Project area. The avian field plan was designed to maximize the potential for detecting a wide range of species and to characterize the distribution and habitat associations of waterfowl and riverine birds (particularly harlequin ducks), raptors and breeding songbirds. Baseline surveys were conducted in the study area associated with the development footprint and within 1 km of the proposed access corridor.

Waterfowl and Riverine Birds

Aerial surveys were conducted for riverine birds, harlequin duck (*Histrionicus histrionicus*), and other waterfowl during spring (May) and summer (July/August) 2006 within the study area. The goal of these surveys was to characterize waterfowl and riverine bird diversity and to identify habitats used for migration staging and breeding in the study area. A total of 21 species of waterfowl were observed within the study area, including six dabbling species, nine species of diver, two species of geese, two species of loons, trumpeter swans (*Cygnus buccinator*), and eared grebes (*Podiceps nigricollis*). During spring, the distribution of waterfowl was relatively uniform among reaches, although higher concentrations existed, particularly within the larger wetland complexes associated with Schaft Creek and upper Mess Creek.

During the summer breeding survey, 22 broods of seven species were detected including, green winged-teal (*Anas crecca*), mallard (*Anas platyrhynchos*), Barrow's goldeneye (*Bucephala islandica*), lesser scaup (*Aythya affinis*), ring-necked duck (*Aythya collaris*), bufflehead (*Becephala albeola*) and unidentified scoter (*Melanitta* spp.) species. The distribution of waterfowl brood observations was relatively similar throughout the study area. Upper Mess Creek support broods of dabblers, divers and geese, whereas, other areas supported broods of dabblers (Schaft Creek), divers (tributaries of Schaft and Mess creeks), or both (lower Mess Creek).

Harlequin duck pairs were mostly observed within the tributaries of Schaft and Mess creeks within the study area. The forested riparian habitat combined with the stream geomorphology of the tributaries likely provided habitat more conducive to harlequin breeding and thus these reaches were selected in spring. An average density of 0.15 harlequin ducks/km was observed over the entire search area during spring. No harlequin duck broods were observed during the

July/August breeding survey. The apparent lack of productivity may be a product of the late spring in 2006, combined with the cryptic nature of the young broods, than a lack of use of this habitat for breeding. Harlequin ducks nest near areas of pair activity, and as such, the reaches in the study area where pairs were observed are likely to be important for nesting and brood rearing by harlequin ducks.

Raptors

Call playback surveys for northern goshawk (*Accipiter gentiles*) were conducted in June 2006 along the proposed access corridor and within the mine site footprint. One northern goshawk was identified along Mess Creek. Observers believed that this individual was unlikely to be of the *laingi* subspecies, and therefore not a species at risk.

Stand watch surveys for tree and cliff nesting raptors were conducted in June 2006. These surveys combined with incidental observations detected eight additional raptor species within the study area: American kestrel (*Falco sparverius*), bald eagle (*Haliaeetus leucocephalis*), golden eagle (*Aquila chrysaetos*), merlin (*Falco columbarius*), northern harrier (*Circus cyaneus*), osprey (*Pandion haliaetus*), red-tailed hawk (*Buteo jamaicensis*) and sharp-shinned hawk (*Accipiter striatus*). Of these, breeding was confirmed for two species: osprey and bald eagle. Three active osprey nests were observed along upper Mess Creek during stand watch surveys and one bald eagle nest with 3 eggs was incidentally observed along Schaft Creek during waterfowl surveys.

Songbirds

There was a moderately high diversity of breeding songbirds (61 species) identified in the proposed access corridor, with high variation in species numbers and diversity between variable radius point count (VRPC) plots. The highest species diversity and abundance of birds was found within low-elevation forest and riparian marshland transitional habitat along upper Mess Creek adjacent to the proposed access corridor. Higher elevation sites above the treeline with predominantly rocky substrata hosted a low abundance and diversity of breeding songbirds. One songbird species of concern (COSEWIC, provincially Blue-listed), the rusty blackbird (*Euphagus carolinus*), was identified within the study area.

ACKNOWLEDGEMENTS

Acknowledgements

This report was prepared for CopperFox Metals Inc. by Rescan Environmental Services Ltd. The project was managed by Shane Uren (M.A.Sc., R.P.Bio.) of Rescan. The report was written by Shaun Freeman (B.Sc., R.P.Bio.) and Heather Bears (M.Sc., Ph.D.), and edited by Brandie Harding (B.Sc.). Fieldwork was conducted by Guy Monty, with assistance from James Malone. Accommodation was provided by CopperFox Metals Ltd. at the Schaft Creek Camp and helicopter support was provided by Pacific Western Helicopters. Report production was coordinated by Amanda Broda.

Citation:

Rescan. 2007. *Schaft Creek Bird Studies Baseline Report 2006*. Prepared for CopperFox Metals Inc. by Rescan Environmental Services Ltd, April 2007.

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1. INTRODUCTION

1. Introduction

CopperFox Metals Inc. (CopperFox) has initiated a project to develop a copper-gold-molybdenum-silver property within the Schaft Creek drainage in north-western British Columbia. Initial plans for the project include constructing a site access through Mess Creek that will connect to the transportation corridor of the Galore Creek project to the south. The availability of pristine habitat for wildlife use within the area may be affected by the development and accurate data of major wildlife groups that potentially use the area requires investigation and consideration. Avifauna that reside in the area or which migrate to the area in order to breed could potentially be affected by development depending on species present, their habitat requirements, and their local, regional and National status.

Identification of avian species in the area is an important initial step prior to suggesting mitigation measures to meet the obligations of federal and provincial standards for species protection. Birds are an important group for consideration of wildlife impacts throughout the planning, implementation, and post-development monitoring of a development for a number of reasons. Waterfowl are valued socially and economically by many communities across North America. Harlequin duck (*Histrionicus histrionicus*), for example, is of particular interest to federal regulators as it occupies a unique habitat niche and has received widespread concern following declines in Pacific populations. Avian species that migrate between countries also represent one of the few wildlife groups that receive international pressure for species conservation, and this group requires consideration for statutory obligations as under the federal Migratory Bird Convention Act. Raptors may also exist in the area, which are afforded additional protection under the provincial Wildlife Act. Finally, when species at risk are identified in an area, they are protected under the federal Species at Risk Act (SARA).

Prior to the initiation of this investigation, no avian surveys existed within the study area. Hence, initial baseline information was required to identify the birds using the area of the proposed development, and the extent of their use of the study area. This report summarises the baseline inventory conducted in 2006, which characterizes bird communities in the area of the proposed development. The baseline inventory included waterfowl, riverine birds (including shorebirds), raptors, and breeding upland birds (*i.e.*, songbirds).

1.1 Objectives

Avian studies were completed in 2006 with the overall objective of collecting baseline information on species presence and distribution within the Schaft Creek study area. Studies included the assessment of the presence and distribution of bird species of conservation concern (*i.e.*, those species with a provincial red or blue listing, or those listed by the Committee on the Status of Endangered Wildlife in Canada [COSEWIC] as endangered, threatened or special concern), or those species that regulators requested to receive enhanced consideration. The bird studies field plan for 2006 was also designed to maximize the potential for detecting a wide range of species which may exist within the study area. A broad level characterization of

regional avian biodiversity was conducted because regional information is generally limited for this somewhat remote and little studied area.

The specific objectives of the 2006 studies were to:

- identify species at risk or of concern (*i.e.*, focal species) potentially occurring within the study area;
- characterize waterfowl biodiversity, distribution and extent of use within the study area;
- determine presence and distribution of riverine birds, with special emphasis on harlequin ducks;
- identify habitats and locations of greatest importance to breeding waterfowl and riverine birds;
- characterize raptor biodiversity, and identify nests of cliff and tree nesting raptors along the proposed access option and within the mine site area that may be directly impacted by the development;
- identify the presence and distribution of raptors occupying riverine and wetland habitats, including eagles, within the study area;
- characterize songbird biodiversity within the major ecosystems that exist within the study area; and
- record important incidental observations of birds, amphibians, and other wildlife encountered in the course of field investigations.

To meet these objectives six survey techniques were employed during the 2006 field season, including:

1. Waterfowl surveys at wetlands within 1 km of the proposed access option and within the mine site development area. This data is required to determine both species and numbers of staging waterfowl, as well as types of habitat used.
2. Aerial surveys for riverine birds with special emphasis on harlequin ducks. Survey effort was directed at rivers within 1 km of the proposed access option and within the mine site development area.
3. Call playback surveys for northern goshawk (*Accipiter gentiles*) in each of the main habitat types occurring within the study area, including the proposed access option and suitable habitat within the mine site area.
4. Stand watches directed at identifying the presence of breeding cliff dwelling raptors with emphasis on listed species including gyrfalcon (*Falco rusticolus*) and peregrine falcon (*Falco peregrinus*).
5. Breeding bird surveys with variable radius point counts (VRPC) at fixed locations within each of the main habitat types occurring within the study area. Surveys focused on sites within 1 km of the proposed access option and within the mine site development area.
6. Record incidental wildlife observations.

1.2 Study Area

The study area included both the area most likely to be associated with the development footprint and the area within 1 km of the proposed access corridor along the upper portion of Mess Creek (Figure 1.2-1). This area was representative of the Mess Creek watershed, and included Schaft Creek and larger tributaries (*i.e.* Walkout Creek, Hickman Creek, *etc.*). The area surveyed included a number of riverine systems, wetlands, forested areas, and alpine tundra. The study area also included a unique transition from coastal to inland ecosystems. The transition is exceptionally pronounced, with relatively gentle and rolling topography east of Mess Creek strongly influenced by the historic volcanic activity that created the Big Raven and Arctic Lake plateaus. The area to the west, by contrast, is extremely rugged with steep, rocky mountains exceeding 2,000 m in elevation and with expansive glaciers.

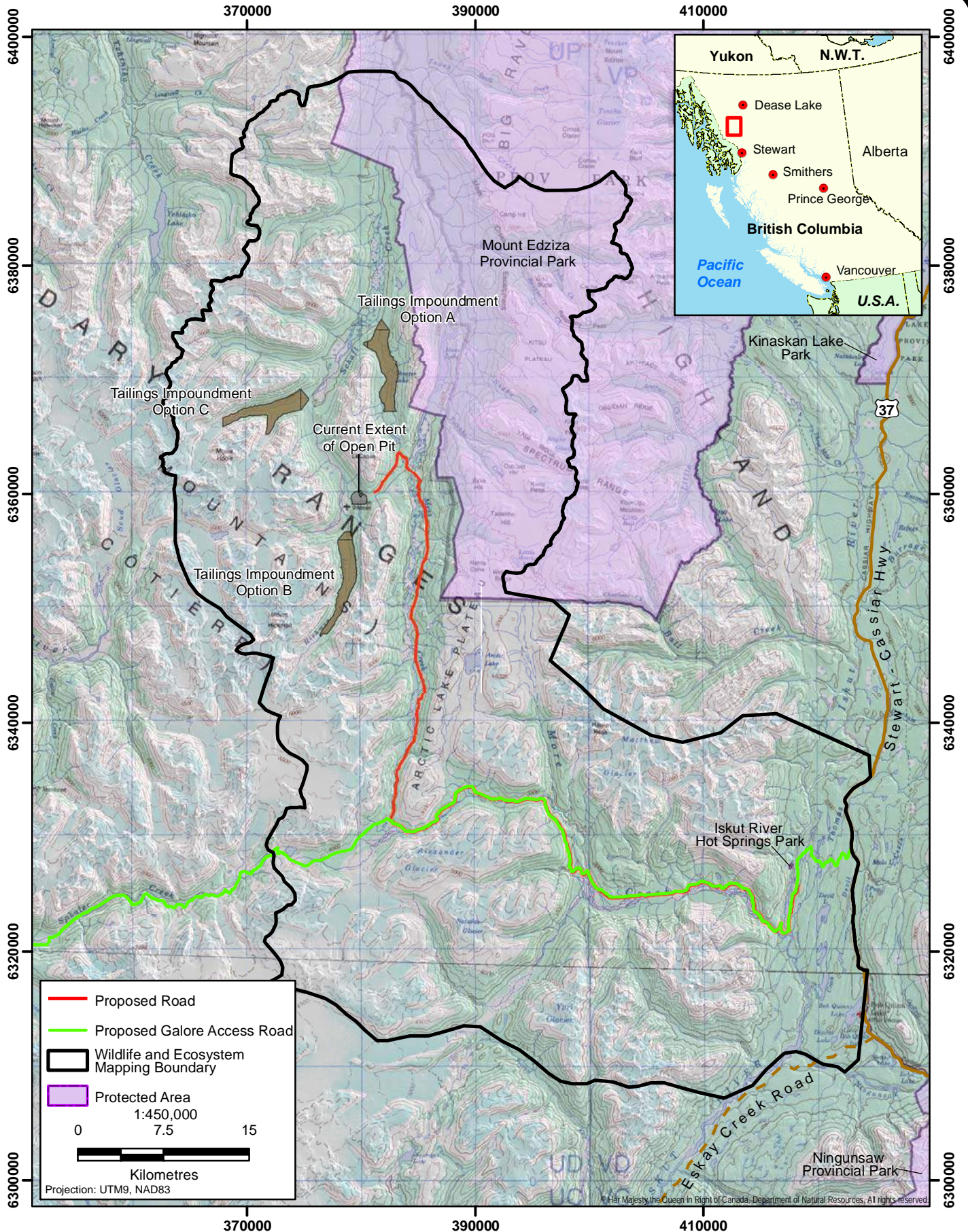
The majority of the study area is representative of the Northern Boreal Mountain ecoprovince, including the Yukon-Stikine Highlands and Northern Mountains and Plateaus ecoregions. Two ecoregions occur in the study area, Tahltan Highlands and Southern Boreal Plateau (Luttermerding *et al.*, 1990). The biogeoclimatic ecosystem classification (BEC) system categorizes the study area into the Boreal Altai Fescue Alpine (BAFA), multiple subzones of the Engelmann Spruce-Subalpine Fir (ESSF), Spruce Willow Birch (SWB), and the Boreal White and Black Spruce (BWBS).

The study area currently lacks road access, although past mineral exploration has resulted in some modification to the watersheds. Guided outfitting, recreational hunting, and fur harvest is ongoing in the study area. The north-east portion of the watershed is representative of Mount Edziza Provincial Park, and supports wilderness back country recreation and associated activities.

1.3 Previous Wildlife Studies

Although no prior avian inventory work has been conducted within the area investigated, bird inventories have been conducted in prior projects in areas associated with the upper Mess Creek and More Creek access corridor. These inventories were summarized by Rescan Environmental Services (2006), which identified 61 species of terrestrial breeding birds, 20 species of waterfowl, and 10 species of raptors within the area to the south. Some work was also conducted in the early 1980s along the lower portions of the Mess Creek drainage and the Stikine for the proposed hydro-electric project on the river (Blood and Anweiler, 1982).

A summary of bird species at risk and species of concern that could potentially exist within the study area was compiled from information available from nearby projects, and from the BC Conservation Data Centre (BC CDC 2006). This list suggests that as many as 20 species at risk could potentially be present in the study area (Appendix 1). Rescan Environmental Services (2006) identified four species at risk including, great blue heron (*Ardea herodias*), surf scoter (*Melanitta perspicillata*), gyrfalcon, and peregrine falcon in the Galore Creek study area to the south.



2. WATERFOWL AND RIVERINE BIRDS

2. Waterfowl and Riverine Birds

Aerial surveys were conducted for waterfowl and riverine birds during spring and summer 2006 within the study area. Spring and summer surveys were conducted to characterize waterfowl and riverine bird diversity and to identify habitats used for migration staging and breeding in the study area.

Harlequin duck was identified as a focal species of riverine bird requiring increased consideration for the Project. This species nests near fast flowing rivers and mountain streams (Campbell *et al.*, 1990). Riverine bird survey effort was therefore primarily directed towards this species.

2.1 Methods

Inventories for riverine birds, harlequin ducks, and other waterfowl included pair surveys in May 2006 and then subsequent brood surveys in July and August, 2006. Aerial surveys were conducted using a Bell 206 helicopter with bubble windows occupied by a navigator and observer in addition to the pilot. This methodology was consistent with Resource Inventory Standards Committee (RISC) protocols (RIC, 1999a; RIC, 1998). The helicopter flew at speeds of approximately 60 km/h, and at height of approximately 30 m above the water. Waterfowl were identified using binoculars from the air. On occasions when large numbers of birds were encountered, surveyors were set down on the ground and used a 60x spotting scope to count and identify waterfowl. A hand-held Global Positioning System (GPS) equipped with a remote antenna was used to record survey routes and observation waypoints. These data were downloaded after the survey for use with a Geographic Information System (GIS) platform. Whenever possible, all of the following information was recorded: species, sex, number of birds, and habitat type.

2.1.1 Spring Pair Survey

A spring survey for waterfowl pairs and focused surveys for harlequin ducks was conducted during May 2006. The initial timing of surveys for harlequin ducks was chosen to correspond to peak times for inventory within the nearest available area with data (southern BC; Freeman and Goudie, 1996; Freeman and Goudie, 2001) and from observations made during the 2005 inventory of streams associated with the lower Iskut and Stikine watersheds (Rescan Environmental Services, 2006). Survey dates also spanned arrival times through the breeding period for harlequin ducks in western North America (Robertson and Goudie, 1999).

In early May of 2006, Rescan conducted harlequin duck surveys for four projects within the region, including a re-survey of More and Sphaler Creek areas (Rescan Environmental Services, *unpublished data*). Spring conditions were delayed in 2006 compared to 2005, which resulted in deeper, persistent snow packs and extensive portions of watersheds remaining frozen during the early May 2006 surveys. Open water on streams and rivers supported waterfowl, but much of the higher quality harlequin duck breeding habitat associated with the upper reaches of watersheds was unavailable throughout the region. Therefore, additional survey effort was conducted in the third week of May to map the distribution of harlequin ducks from pair observations. Duplicate surveys of some reaches were conducted.

Analysis of pair survey data included identifying waterfowl use along specific reaches of the watersheds that may be affected by development, and identification of use of general habitat types available. The access corridor and development sites were divided into four main sections representative of similar wetland ecology:

1. Schaft Creek drainage including Hickman Creek (50.0 km length);
2. lower Mess Creek from Elwyn Creek to Mess Lake (40.1 km);
3. upper Mess Creek from Mess Lake to its headwaters (31.9 km); and
4. associated tributaries of the Schaft and Mess Creeks (combined 66.8 km).

General habitat types including River-riffle (Ri-rf), River-glide (Ri-gl), Creek-riffle (CR-rf), Creek-glide (CR-gl), Pond (PO), Lake (LK), Bog (BO), and Marsh (MA) were assessed for waterfowl abundance. Rivers were defined as streams greater than 4 m wet width, while creeks had widths of less than 4 m. Ponds were defined as shallow water bodies with organic substrate and substantial emergent vegetation, while lakes were deeper with predominantly mineral soil substrata. Marshes were areas of shallow water, dominated by rush (*Scirpus* spp.) and sedge (*Carex* spp.) vegetation. For general analysis, waterfowl were classified as Dabbling Ducks, Diving Ducks (including sea ducks), Geese, Swans, Waterbirds (includes loons and grebes), Shorebirds (for the purpose of this report, includes all wading birds and American dipper), and Other (*e.g.*, gulls, raptors, terns, *etc.*).

2.1.2 Summer Brood Survey

The areas surveyed in spring were again surveyed for broods in the summer to gather direct evidence of breeding in the area. Summer brood surveys were conducted in conjunction with mountain ungulate surveys during July and August, 2006. Data collected during brood surveys included species, number, and sex whenever possible. Brood class (Table 2.1-1) and number of ducklings were also recorded during brood surveys. Habitat data collected was similar to that recorded during spring data collection. The eclipse plumage of drakes of many duck species and the cryptic nature of hens with broods limited the success of species and sex identification from helicopters in some cases. However, information collected was suitably robust to allow for an estimate of productivity and to identify important breeding locations.

**Table 2.1-1
Plumage Development of Young Waterfowl**

Class	Description
IA	Young are down-covered; 1 to 7 days of age
IB	Young are down-covered; 8 to 13 days of age
IC	Young are down-covered, but colour faded, body elongated; 14 to 18 days of age
IIA	First feathers appear, replacing down on sides and tail; 19 to 27 days of age
IIB	Over half of body covered with feathers; 28 to 42 days of age
IIC	Small amount of down remains, among feathers of back; 28 to 42 days of age
III	Fully feathered but incapable of flight; 43 to 55 days of age, flying at 56 to 60 days of age

Reference: Bellrose (1980).

2.2 Results

Avian species observed were classified as dabblers, divers, geese, swans, waterbirds (including loons and grebes), shorebirds, and other (including raptors, gulls and terns) and analyzed as groups where appropriate. Harlequin ducks were analyzed separately to provide additional detail on this species. Species observed are listed in Table 2.2-1. A bird species list for the Schaft Creek study area is provided in Appendix 2. Detailed waterfowl and riverine bird survey data are provided in Appendix 3 and Appendix 4.

**Table 2.2-1
Avian Species Observed during Waterfowl and Riverine Bird Surveys
in the Schaft Creek Study Area, 2006**

Type	Species	Spring Pair Survey	Summer Brood Survey
Dabblers	American wigeon (<i>Anas americana</i>)	X	X
	Gadwall (<i>Anas strepera</i>)	X	
	Green-winged teal (<i>Anas crecca</i>)	X	X
	Mallard (<i>Anas platyrhynchos</i>)	X	X
	Northern Pintail (<i>Anas acuta</i>)	X	
	Northern shoveler (<i>Anas clypeata</i>)	X	
Divers	Barrow's goldeneye (<i>Bucephala islandica</i>)	X	X
	Bufflehead (<i>Bucephala albeola</i>)	X	X
	Common merganser (<i>Mergus merganser</i>)	X	
	Harlequin duck (<i>Histrionicus histrionicus</i>)	X	X
	Hooded merganser (<i>Lophodytes cucullatus</i>)	X	
	Lesser scaup (<i>Aythya affinis</i>)	X	X
	Red-breasted merganser (<i>Mergus serrator</i>)	X	
	Ring-necked duck (<i>Aythya collaris</i>)	X	X
	Unidentified Scoter (<i>Melanitta spp.</i>)		X
Geese	Canada goose (<i>Branta canadensis</i>)	X	X
	White-fronted goose (<i>Anser albifrons</i>)	X	
Swans	Trumpeter swan (<i>Cygnus buccinator</i>)	X	X
Waterbirds	Common loon (<i>Gavia immer</i>)		X
	Eared grebe (<i>Podiceps nigricollis</i>)		X
	Red-throated loon (<i>Gavia stellata</i>)		X
Shorebirds	American dipper (<i>Cinclus cinclus</i>)	X	X
	Common snipe (<i>Gallinago gallinago</i>)	X	
	Greater yellowlegs (<i>Tringa melanoleuca</i>)	X	X
	Killdeer (<i>Charadrius vociferous</i>)	X	
	Solitary sandpiper (<i>Tringa solitaria</i>)		X
	Unidentified sandpipers (<i>Tringa spp.</i>)	X	X
Other	American kestrel (<i>Falco sparverius</i>)		X

(continued)

**Table 2.2-1
Avian Species Observed during Waterfowl and Riverine Bird Surveys
in the Schaft Creek Study Area, 2006 (completed)**

Type	Species	Spring Pair Survey	Summer Brood Survey
	Bald eagle (<i>Haliaeetus leucocephalis</i>)	X	X
	Belted kingfisher (<i>Ceryle alcyon</i>)		X
	Golden eagle (<i>Aquila chrysaetos</i>)	X	
	Northern harrier (<i>Circus cyaneus</i>)	X	
	Osprey (<i>Pandion haliaetus</i>)	X	
	Red-tailed hawk (<i>Buteo jamaicensis</i>)		X
	Sharp-shinned hawk (<i>Accipiter striatus</i>)	X	
	Unidentified tern (<i>Sterna spp.</i>)		X

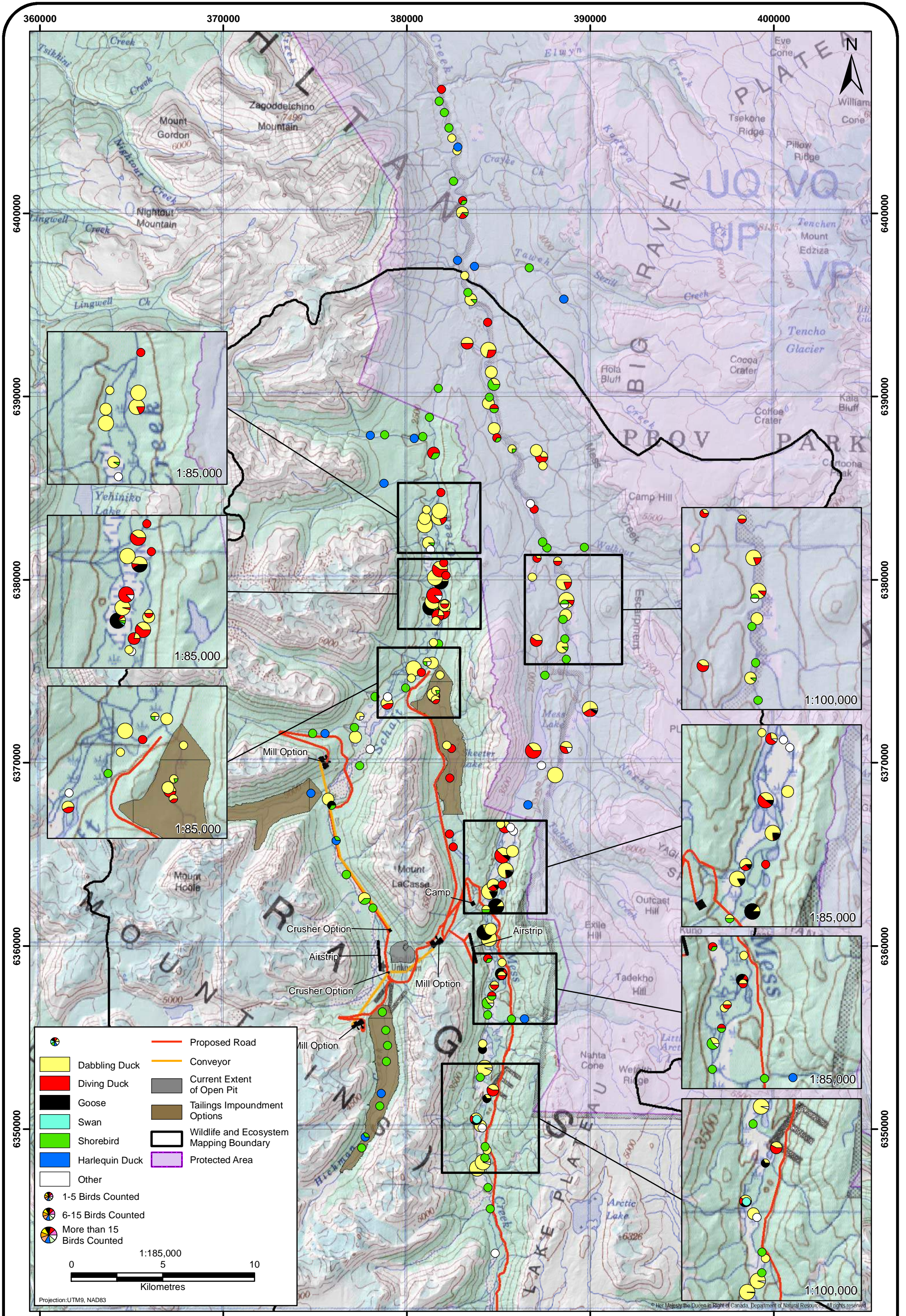
2.2.1 Waterfowl

A total of 21 species of waterfowl were observed within the study area, including six dabbling species, nine species of diver, two species of geese, two species of loons, trumpeter swans (*Cygnus buccinator*), and eared grebes (*Podiceps nigricollis*).

2.2.1.1 Spring Waterfowl Pair Survey

The spring waterfowl survey was conducted on May 2, 4 and 18, 2006, and included 14.0 hrs of aerial survey time. Overall, 1,727 birds of 27 species (Table 2.2-1) were observed to be associated with rivers and wetlands within the study area. The majority of the birds were waterfowl (Table 2.2-2): 65% were dabbling ducks (predominantly mallard [*Anas platyrhynchos*], green-winged teal [*Anas crecca*], and American wigeon [*Anas Americana*]), and 19% were diving waterfowl (mostly Barrow's goldeneye [*Bucephala islandica*], bufflehead [*Bucephala albeola*], and harlequin duck). The distribution of waterfowl was relatively uniform among reaches, although higher concentrations existed, particularly within the larger wetland complexes associated with Schaft Creek and Upper Mess Creek (Plate 2.2-1; Figure 2.2-1).

An estimate of density along reaches within the study area was also calculated for waterfowl (Table 2.2-2). The linear distance represented the area along the valley surveyed, and included wetlands within each drainage for waterfowl. The habitat use observed during spring surveys is summarized in Table 2.2-3. Generally, dabblers, swans, and geese were associated with more calm, low flowing water bodies such as marshes, ponds, and meandering river glides, while diving waterfowl exploited a wider range of habitats. Some diving species selected deep still water (e.g., lesser scaup [*Aythya affinis*] and ring-necked duck [*Athys collaris*]) while mergansers and goldeneye presence correlated with faster flowing riverine habitats. Shorebirds and other wading birds (predominantly American dipper [*Cinclus cinclus*]) were also associated with creek and river riffle habitat.



Waterfowl and Riverine Bird Spring Migration Survey Observations, 2006

FIGURE 2.2-1



Plate 2.2-1. Mess Creek, June 2006.

**Table 2.2-2
Summary of Pair Survey Results [Number (average bird density/km²)]**

Reach	Dabblers	Divers	Geese	Swans	Shorebirds	Waterbirds	Other	Total
Schaft Creek	397 (7.9)	108 (2.2)	76 (1.5)	3 (0.06)	8 (0.2)	31 (0.6)	8 (0.2)	631 (12.6)
Lower Mess Creek	296 (7.4)	105 (2.6)	0 (0.0)	0 (0.0)	6 (0.2)	24 (0.6)	2 (0.1)	433 (10.8)
Upper Mess Creek	285 (8.9)	48 (1.5)	68 (0.03)	2 (0.6)	9 (0.3)	8 (0.3)	10 (0.3)	430 (13.5)
Tributaries	145 (2.2)	69 (1.0)	2 (1.5)	0 (0.0)	3 (0.04)	10 (0.2)	4 (0.1)	233 (3.5)
Total	1123	330	146	5	26	73	24	1727
Percentage (%)	65.0%	19.1%	8.5%	0.3%	1.5%	4.2%	1.4%	100.0%

**Table 2.2-3
Distribution of Groups within Habitat Types [Number (%)]**

Habitat Type	Dabblers	Divers	Geese	Swans	Shorebirds	Waterbirds
Creek Glide (CR-gl)	63 (5.6)	7 (2.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Creek-riffle (CR-rf)	4 (0.4)	18 (5.6)	0 (0.0)	0 (0.0)	3 (11.5)	19 (26.0)
Riffle-glide (Ri-gl)	296 (26.4)	50 (15.4)	37 (26.1)	0 (0.0)	0 (0.0)	0 (0.0)
River-riffle (Ri-rf)	154 (13.7)	76 (23.5)	3 (2.1)	0 (0.0)	16 (61.5)	54 (74.0)
Lake (LK)	46 (4.1)	41 (12.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Marsh (MA)	261 (23.2)	64 (19.8)	88 (62.0)	3 (60.0)	5 (19.2)	0 (0.0)
Pond (PO)	218 (19.4)	53 (16.4)	12 (8.5)	2 (40.0)	0 (0.0)	0 (0.0)
Bog (BO)	81 (7.2)	15 (4.6)	2 (1.4)	0 (0.0)	2 (7.7)	0 (0.0)
Total	1123 (100)	324 (100)	142 (100)	5 (100)	26 (100)	73 (100)

2.2.1.2 Summer Waterfowl Brood Survey

Summer brood surveys were conducted in conjunction with mountain ungulate surveys on July 17, 18, and 19, 2006, with an additional survey on August 14. Approximately 4.46 hours of aerial survey effort was completed for brood surveys. Overall, 408 birds of 22 species (Table 2.2-1) were documented in association with wetlands and streams during summer brood surveys in the study area. Broods of diving ducks, dabbling ducks, and geese were observed (Figure 2.2-2; Table 2.2-4), with most observations occurring during the last survey, August 14.

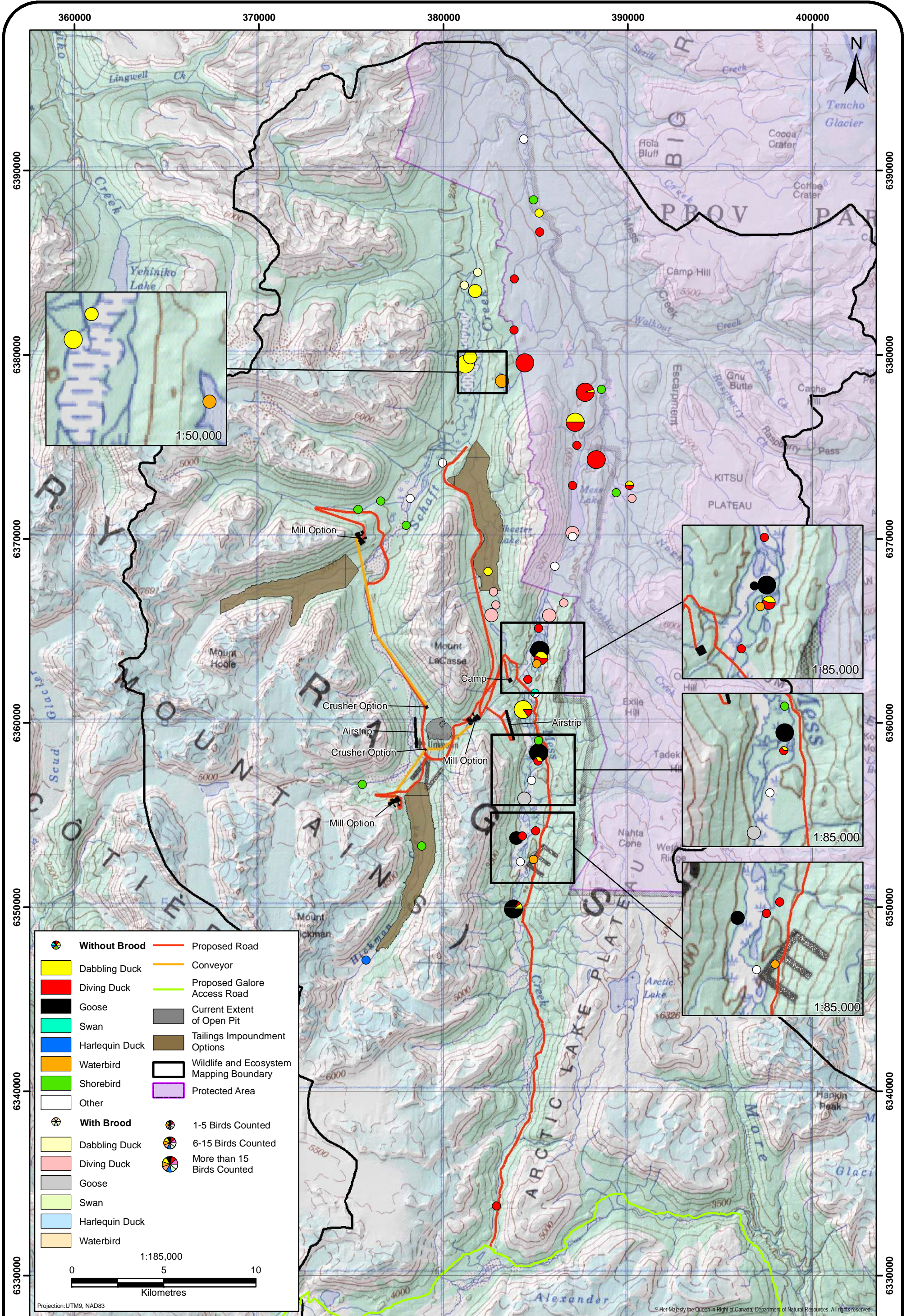
A total of 92 dabbling ducks were observed, with 4 mallard broods and 1 green-winged teal brood observed. During the July surveys, only one green-winged teal brood (class Ia) was encountered. Older classed (IIb to III) mallard broods were observed during the August survey.

There were 154 diving ducks observed during the survey including 16 broods produced by Barrow's goldeneye (7), lesser scaup (5), ring-necked duck (2), bufflehead (1), and an aggregation of 15 brood class III unidentified scoter (*Melanitta* spp.) species in Mess Lake. Nearly equal numbers of broods of diving ducks were encountered in July (7) and August (9), with July broods ranging from Ia to IIb, and the August ducklings developed to class III.

**Table 2.2-4
Summary of Waterfowl Brood Survey Results [Number of adults
(number of broods, number of ducklings)]**

Reach	Dabblers	Divers	Geese	Swans	Loons	Shorebirds	Waterbirds	Other	Total
Lower Mess	14 (1,14)	72 (5,27)	0	0	0	3	0	1	90
Schaft Creek	31 (3,12)	2	0	0	0	3	0	2	38
Tributaries	3	42 (7,23)	0	0	7	0	2	0	54
Upper Mess	44 (1,9)	38 (4,16)	130 (1,4)	2	3	1	0	6	226
Total	92 (5,35)	154 (17,66)	130 (1,?)	2	10	7	2	9	408
Percentage (%)	22.6 (22.7)	37.8 (72.3)	31.9	0.5	2.5	1.7	0.5	2.2	100

Note: Number of broods and/or ducklings included only when observed.



Waterfowl and Riverine Bird Summer Migration Survey Observations, 2006

FIGURE 2.2-2

Overall, 130 Canada geese (*Branta canadensis*) were observed (Plate 2.2-2); however, only one class I brood was noted. Typically, Canada geese nest early, and thus large flocks of moulting birds observed (up to 70) may have been well-developed young produced in 2006. A pair of trumpeter swans was also observed above Mess Lake in July, but no cygnets (*i.e.* juvenile swans) were detected. Both common (*Gavia immer*) and red-throated loons (*Gavia stellata*) and eared grebes were observed during the surveys. However, no direct evidence of breeding (*i.e.*, brood sightings) by these species was identified.



Plate 2.2-2. Flock of Canada Geese observed during August 2006.

The distribution of waterfowl brood observations was relatively similar among four sections of the study area. The lakes and wetlands of Schaft Creek to Hickman Creek supported 3 broods, lower Mess Creek supported 6 broods, upper Mess Creek supported 6 broods, and the tributaries supported 7 broods. Upper Mess Creek supported broods of divers, dabblers, and geese. Other areas supported broods of dabblers (Schaft Creek), divers (tributaries), or both (lower Mess Creek).

2.2.2 Harlequin Ducks and Riverine Bird

Harlequin ducks plus an additional five species of riverine bird or shorebird were observed within the study area including American dipper, common snipe (*Gallinago gallinago*), greater yellowlegs (*Tringa melanoleuca*), killdeer (*Charadrius vociferous*), and solitary sandpiper (*Tringa solitaria*). The following section focuses on harlequin duck.

2.2.2.1 Spring Harlequin Pair Survey

Harlequin duck pair surveys were conducted on May 2, 4, and 18, 2006. A total of 28 individuals were observed, which included 13 pairs (*i.e.* only 2 individuals were unpaired). The majority of observations were made within tributaries to the main stem of Schaft and Mess creeks (19 individuals) (Figure 2.2-1). Twenty-one of the 28 observations were made on May 18 along reaches that had been covered with snow and ice during the May 2 and 4 surveys. This suggests that the late spring may have delayed arrival, pairing, and breeding within the study area.

During the pair surveys, only riffle habitat on creeks and rivers (classified as RI-rf or CR-rf), supported harlequin ducks (Plate 2.2-3); of this, 18 of the observations were made in creeks while 10 of the observations were made in rivers. Observations were not made in middle Mess Creek along the access corridor, as much of this habitat consisted of deep, meandering glides and wetlands not typically used by harlequin ducks. Much of the upper Mess Creek was similar in topography to mid Schaft, supporting large areas of shallow, braided riffle, with little riparian habitat suitable for harlequin nesting structures.



Plate 2.2-3. Occupied harlequin duck habitat, tributary of Mess Creek, May 18, 2006.

Observations of harlequin duck densities per km of surveyed reach indicated that the tributaries of the Schaft and Mess Creek system supported higher densities of harlequins (0.28 ducks/km) than the Schaft/Hickman mainstem (0.12 ducks/km), lower Mess Creek (0.07 ducks/km), or upper Mess Creek (0.00 ducks/km). The forested riparian habitat combined with the stream geomorphology of the tributaries likely provided habitat more conducive to harlequin breeding,

and thus these reaches were selected in spring. An average density of 0.15 ducks/km was observed over the entire search area during the spring survey.

The American dipper was the only riverine bird identified during surveys. Of the 73 observations of American dipper, all were on riffle habitat, with 19 associated with riffles on creeks and 54 were within rivers. Shorebirds identified during surveys included greater yellowlegs, killdeer, Wilson's (common) snipe, and unidentified sandpipers (likely solitary and spotted). Shorebirds encountered were distributed within a variety of habitats; sandpiper species and killdeer were associated with river and creek riffles, greater yellowlegs were observed in marshes and bogs, and the Wilson's snipe encountered was flushed from a bog. The observed density of riverine and shorebirds was 0.75 bird/km along lower Mess Creek, 0.53 birds/km along upper Mess Creek, 0.84 birds/km along the Schaft and Hickman creeks, and 0.19 birds/km along tributaries associated with the Schaft and Mess drainage.

2.2.2.2 Summer Harlequin Brood Survey

Only one pair of harlequin ducks were encountered at the headwaters of Hickman Creek during the summer surveys (Figure 2.2-2). No harlequin broods were observed. A noted absence of harlequin duck production was also experienced in other watersheds locally (Rescan Environmental Services, *unpublished data*). There were very few observations of shorebirds during summer surveys, with 7 shorebirds of at least 3 species (greater yellowlegs, solitary sandpiper, and unidentified sandpipers), and 2 American dippers recorded. Therefore, no detailed analysis of habitat use or brood production by harlequin ducks or shorebirds was attempted at this stage.

2.2.2.3 Other Birds

In addition to waterfowl and riverine birds, eight other species of birds were incidentally observed during spring and/or summer aerial surveys including:

- American kestrel (*Falco sparverius*);
- bald eagle (*Haliaeetus leucocephalis*);
- belted kingfisher (*Ceryle alcyon*);
- golden eagle (*Aquila chrysaetos*);
- northern harrier (*Circus cyaneus*);
- osprey (*Pandion haliaetus*);
- red-tailed hawk (*Buteo jamaicensis*); and
- sharp-shinned hawk (*Accipiter striatus*).

An unidentified tern, likely an Arctic tern (*Sterna paradisaea*), was also observed during the summer brood surveys. Two ospreys were observed, including one juvenile. A bald eagle nest with three eggs was observed within a cottonwood tree near a wetland along Schaft Creek on May 4, 2006. A grizzly bear (*Ursus arctos*) with two cubs was observed in the Schaft Creek area on July 18.

2.3 Discussion

2.3.1 Waterfowl

There are many waterfowl species using the study area for various activities during the spring and summer months. Substantial numbers and a high diversity of waterfowl use the wetlands and streams associated with lower Schaft Creek and mid-Mess Creek south of Mess Lake. A large number of waterfowl were also observed to use these areas as staging habitats during spring migration, and waterfowl production was also encountered within these areas during summer. The large wetland complexes associated with the mid reach of Mess Creek to approximately the latitude of Arctic Lake, and the lower-mid reach of Schaft Creek to the latitude of Skeeter Lake were of the greatest importance for staging waterfowl in the study area.

While productivity in 2006 was less than anticipated, the weather experienced in 2006 may have influenced this to some extent. A number of locations within the study area support habitat suitable for breeding by a wide variety of waterfowl species. Most species of waterfowl identified breed in nests constructed along the edges of water bodies. However, many species, such as bufflehead, hooded mergansers (*Lophodytes cucullatus*), and goldeneyes nest in naturally formed or woodpecker excavated tree cavities. Cavity-nesting waterfowl species may therefore breed in treed areas near the water, but may also breed up to 800 m from the water in forested habitat (Pierre *et al.*, 2001). Cavity-nesting waterfowl require habitat with sufficiently old forest with trees of a large diameter (usually softened by fungal degradation), and woodpecker activity within 1 km of water bodies. The presence of cavity nesting waterfowl and cavity nesting raptors such as American kestrel (observed incidentally) also suggests an importance of nearby old forest capable of hosting large nest cavities.

2.3.2 Harlequin Ducks and Riverine Birds

The important reaches for harlequin duck pairs (in spring) were within the secondary tributaries associated with both the Schaft and Mess Creek watersheds. The area of upper Schaft Creek (below Hickman Creek) and the area associated with Mess Creek appear to have a combination of geomorphology and riparian habitat that do not support harlequin duck breeding; however, these sites may occasionally be used by harlequin duck pairs moving upstream, or when maturing broods are heading back to the ocean in late summer. The apparent lack of productivity by this species in areas where pair activity was observed (*e.g.* no broods detected during surveys), may be a product of the late spring in 2006, combined with the cryptic nature of the young broods, than a lack of use of this habitat for breeding.

Noise disturbance from aerial surveys is also known to cause avoidance behaviour in harlequin ducks (Goudie, 2006), and these effects may be exacerbated when adults have young to protect, or if young react more strongly to overhead noise. Therefore ground surveys for detecting broods of this species may be more effective than overhead flights in the future. Far fewer hours of flight were also invested in finding broods, relative to the number of hours spent conducting spring pair surveys, and so proportionally fewer brood observations were expected for all groups. Observations from other projects (*e.g.* Freeman and Goudie, 1996; Freeman and Goudie, 2001), suggest that harlequin ducks nest near areas of pair activity, and as such, the reaches in the study

area where pairs were observed are likely to be important for nesting and brood rearing by harlequin ducks.

The observed density of harlequin ducks within the Schaft Creek study area (0.15 harlequin ducks/km) was three fold the observed density of the neighbouring Galore Creek study area (0.05 duck/km; Rescan Environmental Services, 2006), suggesting the Schaft Creek area may be of greater overall regional value to this species.

Other riverine birds and shorebirds were distributed based on their habitat preference. Shore birds, including greater yellowlegs and Wilson's snipe, were associated with still water and larger marsh complexes in mid reaches while sandpipers and American dippers were most commonly associated with stream riffle habitat. No exceptional observations or observations of wading bird species at risk were made during the harlequin surveys.

2.3.3 Other Birds

The observation of a bald eagle nest and young osprey suggest that a suitable prey base exists to support breeding by these species. Osprey feed almost exclusively on fish, suggesting that fish resources in or near to the area can support osprey populations. Bald eagles feed on fish, small mammals, and other alternate prey sources such as waterfowl, which were all present near the bald eagle nest.

3. RAPTORS

3. Raptors

Raptors were highlighted as a group requiring enhanced consideration in the area for the Project by the Cassiar-Iskut Stikine Land and Resource Management Plan (CIS LRMP; BC MSRM, 2000) and regulating agencies. Raptor surveys were conducted in 2006 to assess the presence and distribution of focal raptor species, and to identify nest locations that may be impacted by the development of the proposed access corridor and mine site. Focal species included:

- Bald eagle;
- Gyrfalcon;
- Peregrine falcon;
- Northern goshawk; and
- Short-eared owl (*Asio flammeus*).

3.1 Methods

Raptor survey methods used call playback surveys for northern goshawk and stand watches for tree and cliff nesting raptors. All incidental observations of raptors or raptor nests were noted and geo-referenced in conjunction with other field inventories conducted in the study area.

3.1.1 Call Playback Survey

During the breeding season, many birds use species-specific calls and songs to establish and defend territories, to attract mates, and to communicate with young. Using pre-recorded calls or call playbacks to simulate the presence of an "intruder" in an already claimed territory elicits a defensive response in the target species. The response of the bird, whether it is a close approach, accompanied by an aggressive behaviour, or a distant vocalization, allows the observer to record the presence of the species. Call playbacks are typically used for inconspicuous, scarce, or nocturnal species known to respond to calls during the breeding season, such as the northern goshawk. Surveys for northern goshawks were therefore conducted using call paybacks along the proposed access corridor and within the mine site footprint in June 2006. The call playback survey (CPS) methodology adhered to RISC standards (BC MSRM, 2001).

Calls of northern goshawks were played at all call playback stations using a RadioShack® loudspeaker linked to a RadioShack® digital recorder with a mono cable. The equipment used was tested prior to and throughout the surveys, to ensure that the volume required was adequate. When batteries were fully charged, the equipment was found to be loud enough to elicit responses from goshawks in the desired vicinity of the playback.

The CPS for northern goshawk was conducted in conjunction with variable radius point counts (VRPC) for breeding songbirds (Section 4.1.1) at VRPC locations where suitable goshawk habitat (*i.e.*, mature coniferous forest) was present. Thus, a similar amount of survey days were excluded due to poor weather from both survey types. CPS were conducted within three hours of sunrise. In general, a VRPC would be performed at a survey station, observers would then wait for two minutes, and then perform a CPS at the same station. Because the broadcast area

for the call playbacks was greater than the 200 m distance between each VRPC station, CPS were often conducted at every second or third VRPC station rather than at every site to avoid recording the presence of the same bird among adjacent sites. Northern goshawk begging calls were played during CPS.

During surveys, one person played the recorded call for 35 seconds, and an observer listened for 60 seconds, followed by another 35 second period of call playbacks. This procedure was repeated two more times, with a final 60 seconds of silent observation after the third round of recorded calls. As each round of calls was played, the direction of the loudspeaker was rotated 360 degrees such that the entire range around the focal playback location was included. All wildlife observations during these surveys were recorded, as many other species of songbirds will “mob” a perceived predator, and other species of raptors may behave aggressively to other raptorial species within their breeding territories.

3.1.2 Stand Watch Survey

Tree Nesting Raptors

Surveys for tree nesting raptors were conducted using stand watch techniques in riparian habitat along the major rivers of the access corridor. Surveys were conducted in mid-June, 2006. Particular emphasis was placed on detecting bald eagles and locating nests. Survey sites were initially chosen following aerial reconnaissance of riparian habitat. Once sites with potentially suitable habitat were located two surveyors would land and position themselves with binoculars and high-powered spotting scopes at vantage points where the habitat could be monitored for activity. One to three hours were spent observing for raptors at each site. Ground surveys were supplemented with incidental aerial observations in riparian habitat throughout the survey period.

Cliff Nesting Raptors

Surveys for cliff nesting raptors using stand watch techniques were conducted adjacent to suitable nesting habitat along the access corridor. Surveys were conducted in mid-June, 2006. Suitable nesting habitat was initially identified following aerial reconnaissance. Once sites with suitable habitat were located and deemed accessible, two surveyors would land and position themselves with binoculars and high-powered spotting scopes at vantage points where cliffs could be monitored for activity. Surveyors also scanned cliffs for white-wash and/or the presence of *Xanthoria* spp., an orange lichen that is often abundant near nest or roost sites where bird droppings accumulate. Approximately one to three hours were spent searching for raptors at each site. Ground surveys were supplemented with an aerial survey in areas of raptor activity or to confirm the presence of nests.

3.2 Results

Nine raptor species were identified from the CPS and stand watches as well as from incidental observations during other surveys (*i.e.*, waterfowl and songbird surveys) (Table 3.2-1). In addition, the rusty blackbird (*Euphagus carolinus*), a provincially blue-listed and COSEWIC ranked species of concern, was also identified during both the CPS and stand watch surveys.

Table 3.2-1
Raptor Species Encountered during Avian Surveys

Species	Call Playback Survey	Stand Watch Survey	Incidental Observation*
American kestrel	-	-	Y
Bald eagle	-	-	Y
Golden eagle	-	-	Y
Merlin	-	-	Y
Northern Goshawk	Y	-	-
Northern harrier	-	-	Y
Osprey	-	Y	Y
Red-tailed hawk	-	-	Y
Sharp-shinned hawk	-	-	Y

*includes observations made during waterfowl surveys and the variable radius point count surveys.

3.2.1 Call Playback Survey

Between June 15 and 20, 2006, 24 call playback plots were completed within the study area (Figure 3.2-1), for a total of 120 minutes of call playback effort. One northern goshawk was identified along Mess Creek (approximately 130 m south of plot SG1). This bird called three times before flying towards the river in a south westerly direction. Observers believed that this individual was unlikely to be of the *laingi* subspecies, and therefore not a species at risk. A mobbing response from a rusty blackbird was encountered along Mess Creek (plot SG2). Detailed survey data for call playback surveys are provided in Appendix 5.

3.2.2 Stand Watch Survey

Between June 15 and 21, 2006, nine stand watch locations were surveyed for tree and cliff nesting raptors (Figure 3.2-1) over a period of 645 minutes. Detailed survey data for raptors are provided in Appendix 6. The only raptor species encountered during stand watch surveys was osprey, with five observations. Observations included three active nests along Mess Creek (Plate 3.2-1), as well as nesting activity near watch site SSW1.

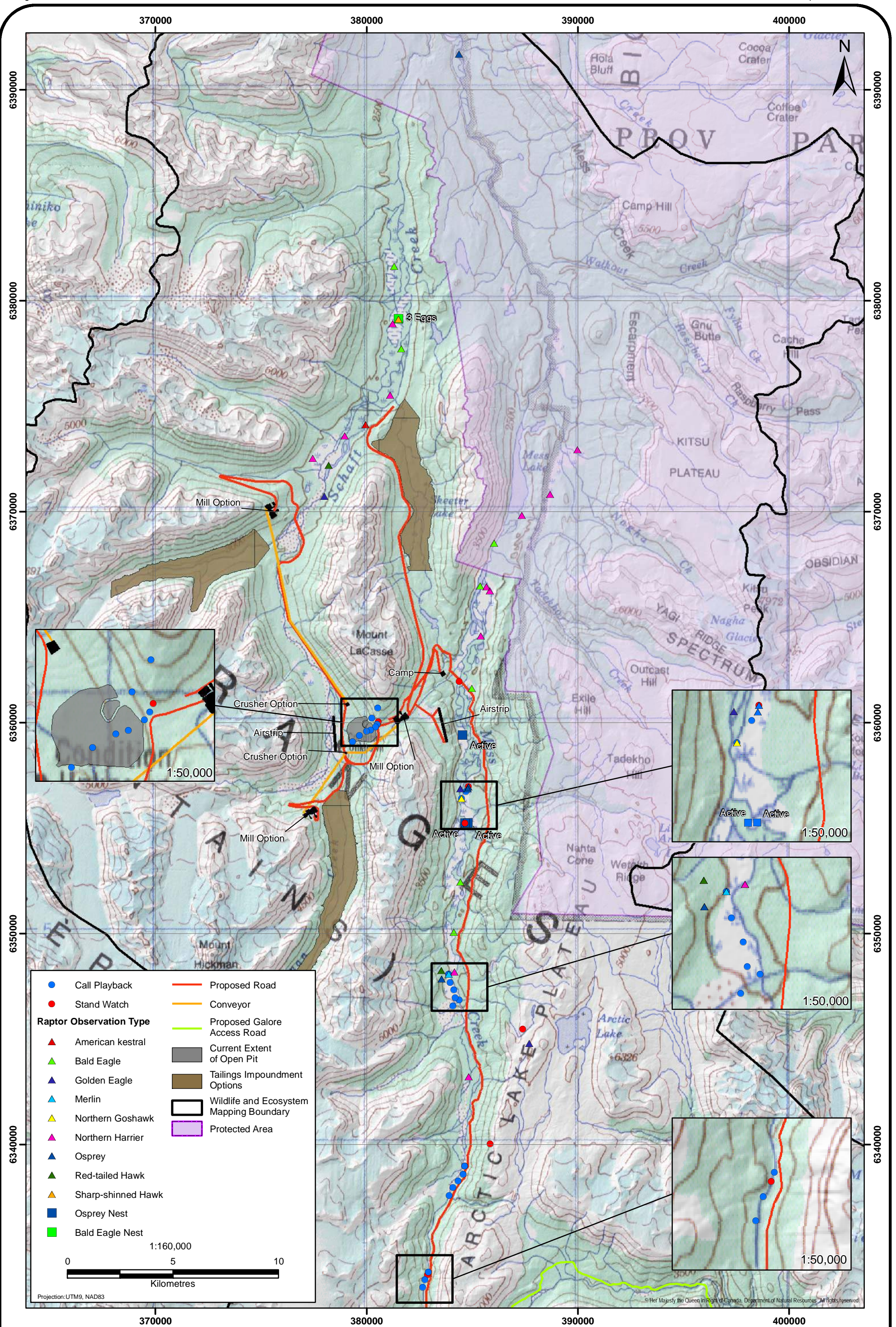


Plate 3.2-1. Location of two active osprey nests along Mess Creek, June 2006.

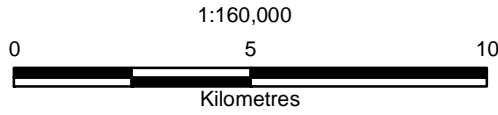
3.3 Discussion

Osprey and northern goshawk, were detected during stand watch and call playback surveys. Seven additional raptor species were also encountered during other components of the bird inventory work. No observations of cliff dwelling species at risk (gyrfalcon and peregrine falcon) were made, and three incidental observations of a golden eagle were noted.

The only riparian associated raptor species encountered during the stand watch surveys was osprey, which were observed to nest within the study area. As aforementioned in the waterfowl survey section, bald eagles were also identified incidentally and a nest was noted along Schaft Creek. Therefore, the study area is used by raptors; however, numbers and species diversity did not appear to be unique or high regionally. While northern goshawk are relatively resilient to stand level habitat changes (Mahon and Doyle, 2005), osprey are affected by alterations to riparian habitats, and by toxins in their dietary fish which can cause nesting failure (*e.g.* DesGranges *et al.*, 1998; Elliot *et al.*, 2005). The presence of young osprey may be a good indicator of ecosystem health, and that relatively uncontaminated fish populations and riparian habitat exist at present in the area. The rusty blackbird, another riparian dwelling bird and a species of concern, was also incidentally observed during raptor surveys. As the rusty blackbird was detected again in VRPC songbird surveys, the presence of this species of concern is further discussed in Section 4.



- Call Playback
- Stand Watch
- Raptor Observation Type**
- ▲ American kestrel
- ▲ Bald Eagle
- ▲ Golden Eagle
- ▲ Merlin
- ▲ Northern Goshawk
- ▲ Northern Harrier
- ▲ Osprey
- ▲ Red-tailed Hawk
- ▲ Sharp-shinned Hawk
- Osprey Nest
- Bald Eagle Nest
- Proposed Road
- Conveyor
- Proposed Galore Access Road
- Current Extent of Open Pit
- Tailings Impoundment Options
- Wildlife and Ecosystem Mapping Boundary
- Protected Area



Projection: UTM9, NAD83

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Raptor Survey Locations, Observations and Incidental Sightings, 2006



FIGURE 3.2-1

4. BREEDING SONGBIRDS

4. Breeding Songbirds

A diverse community of forest and alpine birds is anticipated to breed within the Schaft Creek study area. Each species potentially exploits different habitat and has unique sensitivities to development. To effectively assess impacts of the proposed development to breeding avifauna, particularly those identified at risk, characterizing the community through field inventory was required.

4.1 Methods

Field surveys for breeding songbirds were conducted along the proposed access road and within the potential mine site area using one survey methodology: variable radius point counts (VRPC). Surveys focused on sites within 500 m of the proposed access road and mine site footprint and were stratified by habitat type within each BEC zone.

4.1.1 Variable Radius Point Count Surveys

Variable radius point counts (VRPC) were conducted during the 2006 breeding season to characterize songbird diversity and to allow for the detection of focal species in each of the main habitat types along the proposed transportation corridor and mine site. VRPC focused on characterizing songbirds, as this group is relatively territorial and detectable and is the most diverse vertebrate group, and thus a good indicator of how diverse an area is. In north-western British Columbia, the breeding period extends from early June to the first week of July, with slight annual fluctuation due to local climatic conditions. VRPC in the study area were conducted in two phases with lower elevation areas surveyed in early June and higher elevation areas surveyed in late June. All surveys were conducted by a very experienced observer following RISC standards (RIC, 1999b).

Songbird activity during the breeding season, particularly territorial vocalizations, peak in intensity and frequency one hour before and after sunrise. Due to logistical and safety concerns associated with helicopter access, however, it was not possible to travel to sites until approximately 30 minutes before local sunrise. Thus, VRPC typically commenced within one hour of local sunrise, and were completed each day within four hours of local sunrise.

The intensity of songbird territorial vocalizations can be affected by local weather conditions. On days with high winds, extreme temperatures, or heavy precipitation, territorial activities in songbirds decreases. In addition, the ability of the observer to accurately detect avian species decreases in very poor weather. VRPC were therefore only conducted as weather permitted, with surveys suspended or cancelled when wind speeds exceeded a Beaufort class 3, or precipitation exceeded the “light rain” class (RIC, 1999b).

The initial location of the VRPC conducted each day was selected from the set of habitat types as randomly as possible. However, locations chosen were constrained by logistical and safety concerns (*e.g.*, helicopter accessibility, presence of grizzly bears). Survey sites were geo-referenced using a hand-held Garmin 76 GPS. Before starting a survey, the observers remained silent for several minutes to allow birds affected by their arrival to return to normal activity. The

VRPC survey then commenced and continued for five minutes. All avian species were recorded by species name. The estimated horizontal distance from the observer to the bird was recorded. Vegetation characteristics were recorded as required. All points and bird observations were recorded with GPS.

Upon completion of each survey, the predetermined direction of travel was checked with a compass, and the observers walked in that direction for a minimum of 200 m before commencing the next VRPC survey. Observers continued to survey until the direction of travel was blocked, surveys had to be terminated due to poor weather, or the four hour period after local sunrise had passed.

4.1.2 Analysis of Breeding Songbird Surveys

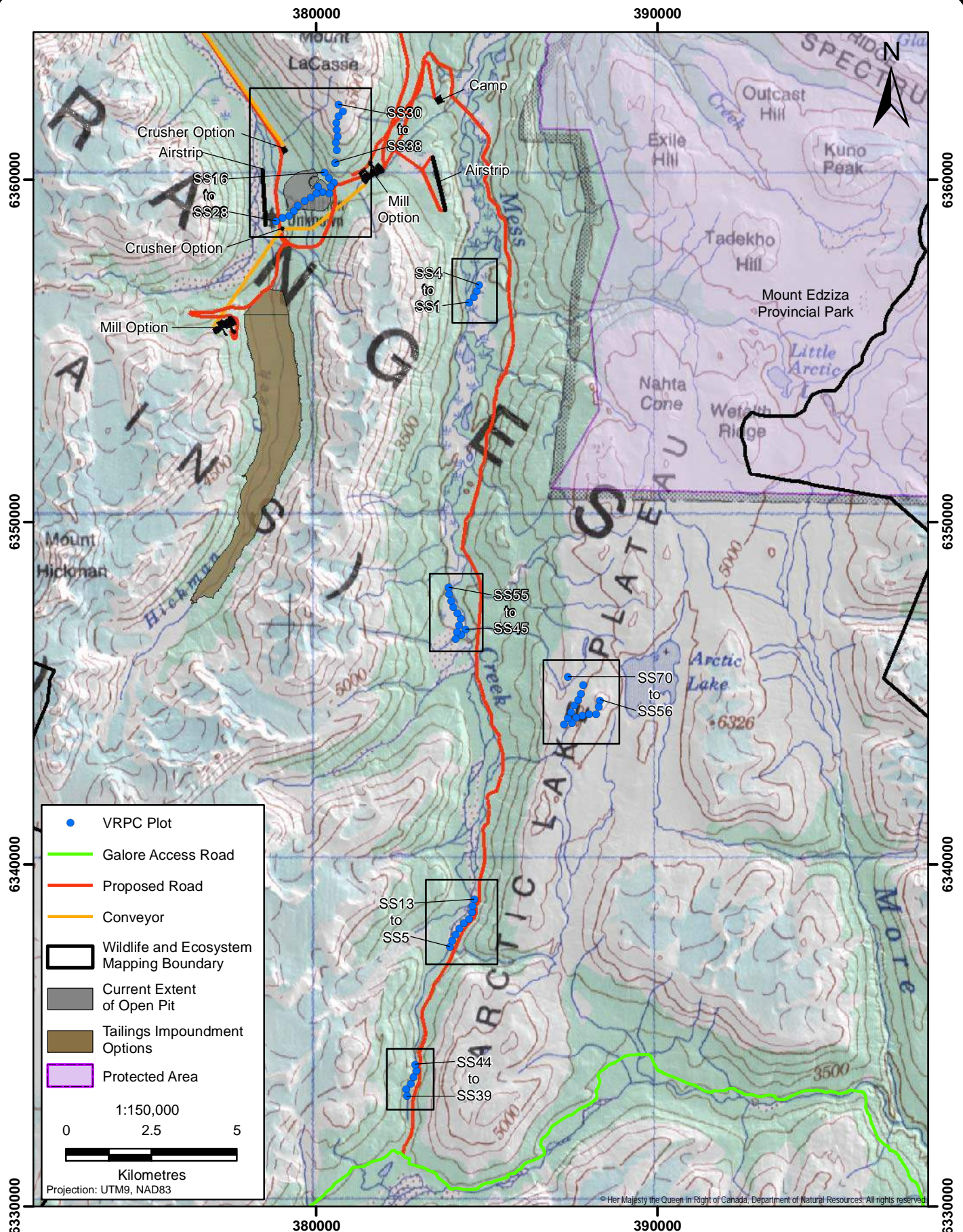
Songbird observations were downloaded from GPS recording devices and compiled with ArcView 3.2. Observations were described for each of the major ecosystems occurring within the study area associated with 500 m from the access road and the mine infrastructure. This included BAFAunp, and ESSFmc BEC zones. BEC classification was consistent with a 1:20,000 scale provincial coverage; however, these classifications may be further modified after ground evaluation associated with the 2007 TEM mapping effort is completed.

4.2 Results

Spring songbird surveys were conducted during seven mornings, between June 15 and 21, 2006, within the Schaft Creek study area. Surveys were conducted in the two dominant BEC subzones (ESSFmc and BAFAunp) within the study area and focused on the areas anticipated to be influenced by development including the access corridor (Figure 4.2-1). Detailed survey data for VRPC are provided in Appendix 7.

A total of 61 species were detected during 70 VRPCs, including the provincially blue-listed and COSEWIC ranked species of concern rusty blackbird (Table 4.2-1). There were 10 species observed in the BAFAun and 56 in the ESSFmc. Within the BAFAun BEC zone two nests were detected during the VRPC survey including one of a horned lark, and one of an American pipit. No nests were detected in the ESSFmc; however, one sooty grouse female was incidentally observed sitting on 5 eggs within the ESSFmc along upper Mess Creek during raptor stand watch surveys (Plate 4.2-1).

The number of birds and species observed varied considerably among survey plots (Figure 4.2-2). The highest species diversity and abundance of birds was found along upper Mess Creek (plots SS1, SS2 and SS3) adjacent to the proposed access corridor. This habitat is transitional between forest and marshland, and natural edges between contrasting habitat types are often important areas of high species diversity. VRPC plots with no birds detected were associated with higher elevation rocky sites devoid of trees (*i.e.*, plots SS56 and SS57). Low bird diversity and abundance tended to be associated with rocky habitat above the treeline (*e.g.*, plots SS29, SS58, SS65, SS62, SS34, SS30, and SS32).



**Variable Radius Point Count (VRPC)
Survey Locations, 2006**

FIGURE 4.2-1



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Table 4.2-1
Summary of VRPC: Survey Effort, Species Richness
and Relative Density of Birds Identified by BEC Subzone, 2006

		BEC Subzone				
		BAFAunN		ESSFmc		
Number of VRPC Plots		20		50		
Number of Species		10		56		
		Number of Detections				
Common Name	Scientific Name	Conservation Status	BAFAun		ESSFmc	
			Total	Per Plot	Total	Per Plot
Alder Flycatcher	<i>Empidonax alnorum</i>		.	.	25	0.50
American Pipit	<i>Anthus spinoletta</i>		35	1.75	2	0.04
American Redstart	<i>Setophaga ruticilla</i>		.	.	22	0.44
American Robin	<i>Turdus migratorius</i>		.	.	16	0.32
Black-capped Chickadee	<i>Parus atricapillus</i>		.	.	3	0.06
Blackpoll Warbler	<i>Dendroica striata</i>		.	.	7	0.14
Bohemian Waxwing	<i>Bombycilla garrulus</i>		.	.	5	0.10
Boreal Chickadee	<i>Parus hudsonicus</i>		.	.	1	0.02
Canada Goose	<i>Branta canadensis</i>		.	.	4	0.08
Cedar Waxwing	<i>Bombycilla cedrorum</i>		.	.	16	0.32
Common Raven	<i>Corvus corax</i>		.	.	1	0.02
Common Yellowthroat	<i>Geothlypis trichas</i>		.	.	8	0.16
Dark-eyed Junco	<i>Junco hyemalis</i>		.	.	27	0.54
Dusky Flycatcher	<i>Empidonax oberholseri</i>		.	.	4	0.08
Fox Sparrow	<i>Passerella iliaca</i>		.	.	8	0.16
Golden Eagle	<i>Aquila chrysaetos</i>		1	0.05	.	.
Golden-crowned Kinglet	<i>Regulus satrapa</i>		.	.	5	0.10
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>		6	0.30	1	0.02
Gray Jay	<i>Perisoreus canadensis</i>		.	.	4	0.08
Gray-crowned Rosy-Finch	<i>Leucosticte tephrocotis</i>		3	0.15	.	.
Green-winged Teal	<i>Anas crecca</i>		.	.	2	0.04
Hammond's Flycatcher	<i>Empidonax hammondii</i>		.	.	4	0.08
Harlequin Duck	<i>Histrionicus histrionicus</i>		.	.	2	0.04
Hermit Thrush	<i>Catharus guttatus</i>		.	.	13	0.26
Horned Lark	<i>Eremophila alpestris</i>		35	1.75	3	0.06
Lincoln's Sparrow	<i>Melospiza lincolni</i>		.	.	12	0.24
MacGillivray's Warbler	<i>Oporornis tolmiei</i>		.	.	9	0.18
Mallard	<i>Anas platyrhynchos</i>		.	.	2	0.04
Northern Flicker	<i>Colaptes auratus</i>		.	.	2	0.04
Northern Waterthrush	<i>Seiurus noveboracensis</i>		.	.	3	0.06
Olive-sided Flycatcher	<i>Contopus borealis</i>		.	.	11	0.22
Orange-crowned Warbler	<i>Vermivora celata</i>		.	.	7	0.14
Pine Grosbeak	<i>Pinicola enucleator</i>		.	.	1	0.02
Pine Siskin	<i>Carduelis pinus</i>		5	0.25	198	3.96
Red Crossbill	<i>Loxia curvirostra</i>		.	.	1	0.02
Red-breasted Nuthatch	<i>Sitta canadensis</i>		.	.	2	0.04
Ruby-crowned Kinglet	<i>Regulus calendula</i>		.	.	11	0.22
Ruffed Grouse	<i>Bonasa umbellus</i>		.	.	7	0.14
Rufous Hummingbird	<i>Selasphorus rufus</i>		.	.	1	0.02
Rusty Blackbird	<i>Euphagus carolinus</i>	Blue List/SC	.	.	4	0.08
Savannah Sparrow	<i>Passerculus sandwichensis</i>		15	0.75	6	0.12
Semipalmated Plover	<i>Charadrius semipalmatus</i>		3	0.15	.	.
Solitary Sandpiper	<i>Tringa solitaria</i>		.	.	2	0.04
Song Sparrow	<i>Melospiza melodia</i>		.	.	5	0.10
Spotted Sandpiper	<i>Actitis macularia</i>		.	.	6	0.12
Steller's Jay	<i>Cyanocitta stelleri</i>		.	.	1	0.02
Swainson's Thrush	<i>Catharus ustulatus</i>		.	.	33	0.66
Tennessee Warbler	<i>Vermivora peregrina</i>		.	.	7	0.14
Townsend's Warbler	<i>Dendroica townsendi</i>		.	.	25	0.50
Varied Thrush	<i>Ixoreus naevius</i>		.	.	7	0.14
Warbling Vireo	<i>Vireo gilvus</i>		.	.	11	0.22
Western Wood-Pewee	<i>Contopus sordidulus</i>		.	.	5	0.10
White-tailed Ptarmigan	<i>Lagopus leucurus</i>		1	0.05	.	.
White-winged Crossbill	<i>Loxia leucoptera</i>		.	.	9	0.18
Willow Ptarmigan	<i>Lagopus lagopus</i>	
Wilson's Snipe	<i>Gallinago delicata</i>		.	.	2	0.04
Wilson's Warbler	<i>Wilsonia pusilla</i>		.	.	32	0.64
Winter Wren	<i>Troglodytes troglodytes</i>		.	.	14	0.28
Yellow Warbler	<i>Dendroica petechia</i>		.	.	62	1.24
Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>		.	.	1	0.02
Yellow-rumped Warbler	<i>Dendroica coronata</i>		.	.	11	0.22



Plate 4.2-1. Sooty grouse on 5 eggs, June 18, 2006.

4.3 Discussion

There was a moderately diverse community of breeding birds identified within the Schaft Creek study area, with a high level of variation among VRPC plots surveyed. It should be noted that because only two BECs subzones were represented in VRPC surveys, the likelihood of observing certain species within lower elevations or alternate ecosystems was limited. Of the species observed, the rusty blackbird was the only species at risk identified, which is provincially blue listed as a COSEWIC species of concern. Beyond this, no notable or unexpected species observations were made. The number of species identified (61) in the study area examined here was similar to the number identified in the adjacent Galore Creek from VRPC surveys in 2005/2006 (Rescan Environment Service, 2006), suggesting these study areas are similarly important for maintaining the species diversity of terrestrial avifauna in the region.

Species richness and number of detections varied considerably between VRPC plots within the study area, which allows for a limited extrapolation of habitat characteristics associated with high and low species diversity. Songbird diversity and abundance in other studies tend to correlate positively with increased vegetative diversity and structural heterogeneity (*e.g.* vertical stratification of vegetation; Whelan, 2001), wide forested buffer areas along water or where two habitat types transition (Peak and Thompson, 2006), and/or the availability of diverse food resources (Whelan, 2001). From preliminary analyses, it appears that the VRPC plots that hosted the highest songbird abundance and diversity were also located in the most productive

habitat surveyed (lowest elevation) near a transition between low-elevation forest and riparian marshland habitat. Inversely, higher elevation rocky habitat hosted the lowest diversity and abundance of songbirds.

One species of concern, the rusty blackbird, was detected during songbird surveys, as well as during incidental observations made during raptor surveys. Rusty blackbirds have declined by approximately 90% over the past 3 decades, which has earned them a status as a COSEWIC species of concern (Greenberg and Droege, 1999). Rusty blackbirds select riparian habitat with a relatively high density and diversity of plant species along creeks, rivers, and lakes in order to breed (Larue *et al.* 1995). Thus, the presence of this species in the creekside vegetation along upper Mess Creek suggests that the riparian forest in that area may host a relatively high level of riparian vegetative density and diversity. Interestingly, the rusty blackbird observation coincides with the area that hosted the highest diversity and abundance of other songbird species (*i.e.*, 703 m elevation marshland/forest transition near plots SS1-SS4), making this a habitat of particular importance for maintaining local avian diversity.

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APPENDIX 1
LIST OF BIRD SPECIES OF CONSERVATION CONCERN FOR
THE SCHAFT CREEK PROJECT

Appendix 1
List of Bird Species of Conservation Concern for the Schaft Creek Project

Bird Species	Scientific Name	Provincial Status	COSEWIC Listing	Information Source	Probability of Occurrence	Rationale for Consideration
American bittern	<i>Botaurus lentiginosus</i>	Blue	Not listed	C	Possible	Unknown distribution and inventory in study area, suitable wetland nesting habitat available.
Bald eagle	<i>Haliaeetus leucocephalus</i>	Yellow	Not at risk	D	Confirmed	Multiple observations during waterfowl aerial surveys within the Schaft Creek area during field surveys in 2006.
California gull	<i>Larus californicus</i>	Blue	Not listed	F	Possible	Observed in Spatsizi Plateau Wilderness Park. Breeds in the Okanogan therefore likely transient, not a management concern within the study area.
Great blue heron	<i>Ardea herodias fannini</i>	Blue	Special Concern	C	Possible	Outside of distribution, but inventory data lacking and high quality riparian with mature forest may provide opportunity for a rookery. A record identified near Telegraph Creek. Andre Breault of Environment Canada suggest there may be a possibility of occurrence.
Gyrfalcon	<i>Falco rusticolus</i>	Blue	Not at risk	C, D, F	Possible	Within published nesting distribution. Reliance on cliffs and ledges, habitat within study area. All fledged by late July. Identified in Mt. Edziza Provincial Park and Stikine River Provincial Park including a breeding record in July.
Harlequin duck	<i>Histrionicus histrionicus</i>	Yellow	Not listed	E	Confirmed	Highlighted by Canadian Wildlife Service (CWS) as a species requiring increased consideration. High quality breeding habitat exists in study area. 2006 Field surveys confirmed presence.
Hudsonian godwit	<i>Limosa haemastica</i>	Red	Not listed	C, D	Very Unlikely	Included do to lack of inventory data only. Available sedge meadow BAFA habitat may be insufficient to support breeding population.
Le Conte's sparrow	<i>Ammodramus leconteii</i>	Blue	Not listed	F	Unknown	Observed in Spatsizi Plateau Wilderness Park. This species breeds in the extreme north east of the province. As such, the observation in the region is likely transient and not associated with a breeding population. While suitable habitat consisting of marsh land, wetlands, flooded areas exist within the study area, it is unlikely this species breeds in the study area and therefore does not warrant further management consideration.
Lesser (American) golden plover	<i>Pluvialis dominica</i>	Blue	Not listed	C, D	Unlikely	Only known breeding population in B.C. identified near the upper Stikine, BAFA habitat; however, there may have been an account 600 km south as well. Habitat selected includes short grass areas, burned agricultural lands, grassy lake shores, golf courses. May not be sufficient habitat in study area, although rocky/sandy areas with suitable vegetation may be used.
Long-tailed duck	<i>Clangula hyemalis</i>	Blue	Not listed	C, D, F, G	Unknown	Just outside distribution, but no inventory. Nest in BAFA, near suitable lakes. Potential habitat in study area. Identified in Mount Edziza Provincial Park. Andre Berault of EC suggests that this species may occur, but difficult to inventory. Identified in the Stikine/Iskut by Simpson and Bianchinin (1997).
Northern goshawk	<i>Accipiter gentilis laingi</i>	Red	Threatened	B, D, G	Unlikely	Habitat along the most western edge of the study area may support this subspecies, but more likely to harbour subspecies of goshawk not at risk. Identification of the difference between this subspecies and subspecies less at risk may prove difficult without taking DNA samples.
Peregrine falcon	<i>Falco peregrinus anatum, F.p.pealei</i>	Red/blue	Threatened Schedule 1 SARA / Special Concern	C, D, F	Possible	Limited inventory, possible breeding distribution identified to the north and south of study area. Nesting habitat in cliffs and ledges. Fledging estimated mid-July. Identified in Mount Edziza Provincial Park. Both subspecies may exist in study area.
Red-necked phalarope	<i>Phalaropus lobatus</i>	Blue	Not listed	C, F	Possible	Observed in Mount Edziza and Spatsizi Plateau Wilderness Parks, but occurrence may be migratory. Potential to occur in study area is dependant on availability of suitable low vegetation, wet sub-alpine meadows, however breeding range is believed to be farther north. Likely not a management concern within the study area.

A: Avery (1995).

B: BC CDC (2006).

C: Fraser et. al., (1999).

D: BC MSRM (2000), Cassiar Iskut-Stikine LRMP.

E: Andrew Robinson, Canadian Wildlife Service (CWS), personal communication.

F: BC MWLAP (2003).

G: Simpson and Bianchinin (1997).

H: Cominco Ltd. Delaware Resource corp. 1988.

(continued)

Appendix 1
List of Bird Species of Conservation Concern for the Schaft Creek Project (completed)

Bird Species	Scientific Name	Provincial Status	COSEWIC Listing	Information Source	Probability of Occurrence	Rationale for Consideration
Rusty blackbird	<i>Euphagus carolinus</i>	Blue	Special Concern	A	Possible	Very little know about this species, study area well into published breeding distribution.
Sandhill crane	<i>Grus canadensis</i>	Blue	Not listed	C, H	Possible	Potentially within nesting range, suitable habitat of sufficient size may not be available. Should be able to identify with waterfowl surveys. May stop over, not observed to date, but observation noted near lower Iskut. Possibly used for breeding (a few pairs maximum), directed management likely not required as habitat should be conserved via other initiatives. Sandhill crane may also nest in forested areas and lead broods to wetlands.
Short-billed dowitcher	<i>Limnodromus griseus</i>	Blue	Not listed	C, D	Unlikely	Suggested breeding range may include Spatsizi Plateau Wilderness Park, but quality habitat may be insufficient in study area.
Short-eared owl	<i>Asio flammeus</i>	Blue	Special Concern	F, D	Very Possible	Observed in Spatsizi Plateau Wilderness Park. Insufficient distribution data for breeding, however suitable habitat represented to the east of the study area.
Smith's longspur	<i>Calcarius pictus</i>	Blue	Not listed	C, F	Possible	Potential distribution identified to mid-Stikine. Nests alpine/tree line open grassy, shrubby, sub alpine valley bottoms and mountain passes. Breeding accounts documented in Spatsizi Plateau Wilderness Park and Mount Edziza Provincial Park. Birds of BC vol 2 suggest that NBM ecoprovince has the greatest concentration in summer compared to the remainder of the province and notes that a careful nest search has not been completed near the Spatsizi. Breeding habitat has been described as high elevation open shrub/sedge habitats as high as 2700 m.
Surf Scoter	<i>Melanitta perspicillata</i>	Blue	Not listed	C,F	Unknown	Nesting populations in freshwater lakes to the east of study area, no inventory within. Potential presence dependant on availability of suitable lakes in study area. Identified in Mount Edziza Provincial Park. Andre Berault of EC suggests that this species may occur, but difficult to inventory.
Trumpeter swan	<i>Cygnus buccinator</i>	Blue	Not at risk	D	Confirmed	Identified in the Cassiar Iskut-Stikine Land and Resource Management Plan (CIS LRMP), and highlighted by Canadian Wildlife Service (CWS) as a species requiring increased consideration. Presence of this species was confirmed through field surveys. Breeding population likely; however, not confirmed by these surveys. Population is likely Pacific, no winter use observed during 2005 moose surveys, but early spring use observed in March.
Upland sandpiper	<i>Bartramia longicauda</i>	Red	Not listed	F, D	Possible	Observed in Spatsizi Plateau Provincial Park. Breeds farther north therefore likely transient, not a management concern within the study area.
Wandering tattler	<i>Heteroscelus incanus</i>	Blue	Not listed	C,F, D	Possible	Study area just south west of published distribution (Dease Lake), breeding habitat includes remote and rugged habitat with mountain streams. Nests on gravel bars associated with mountain streams up to BAFA BEC. Abundant habitat available in study area, may combine search with aquatic inventory. Observed in Mount Edziza and Spatsizi Plateau Wilderness Parks.

A: Avery (1995).

B: BC CDC (2006).

C: Fraser et. al., (1999).

D: BC MSRM (2000), Cassiar Iskut-Stikine LRMP.

E: Andrew Robinson, Canadian Wildlife Service (CWS), personal communication.

F: BC MWLAP (2003).

G: Simpson and Bianchinin (1997).

H: Cominco Ltd. Delaware Resource corp. 1988.

APPENDIX 2
BIRD SPECIES OBSERVED DURING AVIAN FIELD SURVEYS
WITHIN THE SCHAFT CREEK STUDY AREA, 2006

Appendix 2
Bird Species Observed during Avian Field Surveys
within the Schaft Creek Study Area, 2006

Common Name	Scientific Name	Species Code¹
Alder Flycatcher	<i>Empidonax alnorum</i>	ALFL
American Dipper	<i>Cinclus cinclus</i>	AMDI
American Kestrel	<i>Falco sparverius</i>	AMKE
American Pipit	<i>Anthus spinoletta</i>	AMPI
American Redstart	<i>Setophaga ruticilla</i>	AMRE
American Robin	<i>Turdus migratorius</i>	AMRO
American Wigeon	<i>Anas americana</i>	AMWI
Arctic Tern	<i>Sterna paradisaea</i>	ARTE
Bald Eagle	<i>Haliaeetus leucocephalis</i>	BAEA
Barrow's Goldeneye	<i>Bucephala islandica</i>	BAGO
Belted Kingfisher	<i>Ceryle alcyon</i>	BEKI
Black-capped Chickadee	<i>Parus atricapillus</i>	BCCH
Blackpoll Warbler	<i>Dendroica striata</i>	BPWA
Bohemian Waxwing	<i>Bombycilla garrulus</i>	BOWA
Boreal Chickadee	<i>Parus hudsonicus</i>	BOCH
Bufflehead	<i>Bucephala albeola</i>	BUFF
Canada Goose	<i>Branta canadensis</i>	CAGO
Cedar Waxwing	<i>Bombycilla cedrorum</i>	CEWA
Common Loon	<i>Gavia immer</i>	COLO
Common Merganser	<i>Mergus merganser</i>	COME
Common Raven	<i>Corvus corax</i>	CORA
Common Snipe	<i>Gallinago gallinago</i>	COSN
Common Yellowthroat	<i>Geothlypis trichas</i>	COYE
Dark-eyed Junco	<i>Junco hyemalis</i>	DEJU
Dusky Flycatcher	<i>Empidonax oberholseri</i>	DUFL
Eared Grebe	<i>Podiceps nigricollis</i>	EAGR
Fox Sparrow	<i>Passerella iliaca</i>	FOSP
Gadwall	<i>Anas strepera</i>	GADW
Golden Eagle	<i>Aquila chrysaetos</i>	GOEA
Golden-crowned Kinglet	<i>Regulus satrapa</i>	GCKI
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	GCSP
Gray Jay	<i>Perisoreus canadensis</i>	GRJA
Gray-crowned Rosy-Finch	<i>Leucosticte tephrocotis</i>	GCRF
Greater Yellowlegs	<i>Tringa melanoleuca</i>	GRYE
Green-winged Teal	<i>Anas crecca</i>	GWTE
Hammond's Flycatcher	<i>Empidonax hammondii</i>	HAFL
Harlequin Duck	<i>Histrionicus histrionicus</i>	HADU
Hermit Thrush	<i>Catharus guttatus</i>	HETH
Hooded Merganser	<i>Lophodytes cucullatus</i>	HOME
Horned Lark	<i>Eremophila alpestris</i>	HOLA
Killdeer	<i>Charadrius vociferous</i>	KILL
Lesser Scaup	<i>Aythya affinis</i>	LESC
Lincoln's Sparrow	<i>Melospiza lincolni</i>	LISP
MacGillivray's Warbler	<i>Oporornis tolmiei</i>	MGWA
Mallard	<i>Anas platyrhynchos</i>	MALL
Merlin	<i>Falco columbarius</i>	MERL
Northern Flicker	<i>Colaptes auratus</i>	NOFL
Northern Goshawk	<i>Accipiter gentilis</i>	NOGO
Northern Harrier	<i>Circus cyaneus</i>	NOHA
Northern Pintail	<i>Anas acuta</i>	NOPI

¹ Species code taken from Cannings and Harcombe (1990).

(continued)

Appendix 2
Bird Species Observed during Avian Field Surveys
within the Schaft Creek Study Area, 2006 (completed)

Common Name	Scientific Name	Species Code¹
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	NRWS
Northern Shoveler	<i>Anas clypeata</i>	NOSH
Northern Waterthrush	<i>Seiurus noveboracensis</i>	NOWA
Olive-sided Flycatcher	<i>Contopus borealis</i>	OSFL
Orange-crowned Warbler	<i>Vermivora celata</i>	OCWA
Osprey	<i>Pandion haliaetus</i>	OSPR
Pine Grosbeak	<i>Pinicola enucleator</i>	PIGR
Pine Siskin	<i>Carduelis pinus</i>	PISI
Red Crossbill	<i>Loxia curvirostra</i>	RECR
Red-breasted Merganser	<i>Mergus serrator</i>	RBME
Red-breasted Nuthatch	<i>Sitta canadensis</i>	RBNU
Red-tailed Hawk	<i>Buteo jamaicensis</i>	RTHA
Red-throated Loon	<i>Gavia stellata</i>	RTLO
Ring-necked Duck	<i>Aythya collaris</i>	RNDU
Ruby-crowned Kinglet	<i>Regulus calendula</i>	RCKI
Ruffed Grouse	<i>Bonasa umbellus</i>	RUGR
Rufous Hummingbird	<i>Selasphorus rufus</i>	RUHU
Rusty Blackbird	<i>Euphagus carolinus</i>	RUBL
Savannah Sparrow	<i>Passerculus sandwichensis</i>	SASP
Semipalmated Plover	<i>Charadrius semipalmatus</i>	SEPL
Sharp-shinned Hawk	<i>Accipiter striatus</i>	SSHA
Solitary Sandpiper	<i>Tringa solitaria</i>	SOSA
Song Sparrow	<i>Melospiza melodia</i>	SOSP
Sooty Grouse	<i>Dendragapus obscurus fuliginosus</i>	SOGR
Spotted Sandpiper	<i>Actitis macularia</i>	SPSA
Steller's Jay	<i>Cyanocitta stelleri</i>	STJA
Swainson's Thrush	<i>Catharus ustulatus</i>	SWTH
Tennessee Warbler	<i>Vermivora peregrina</i>	TEWA
Three-toed Woodpecker	<i>Picoides tridactylus</i>	TTWO
Townsend's Warbler	<i>Dendroica townsendi</i>	TOWA
Tree Swallow	<i>Tachycineta bicolor</i>	TRSW
Trumpeter Swan	<i>Cygnus buccinator</i>	TUSW
Varied Thrush	<i>Ixoreus naevius</i>	VATH
Warbling Vireo	<i>Vireo gilvus</i>	WAVI
Western Wood-Pewee	<i>Contopus sordidulus</i>	WWPE
White-fronted Goose	<i>Anser albifrons</i>	WFGO
White-tailed Ptarmigan	<i>Lagopus leucurus</i>	WTPT
White-winged Crossbill	<i>Loxia leucoptera</i>	WWCR
Willow Ptarmigan	<i>Lagopus lagopus</i>	WIPT
Wilson's Snipe	<i>Gallinago delicata</i>	WISN
Wilson's Warbler	<i>Wilsonia pusilla</i>	WIWA
Winter Wren	<i>Troglodytes troglodytes</i>	WIWR
Yellow Warbler	<i>Dendroica petechia</i>	YEWA
Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>	YBFL
Yellow-rumped Warbler	<i>Dendroica coronata</i>	YRWA

¹ Species code taken from Cannings and Harcombe (1990).

APPENDIX 3
WATERFOWL AND RIVERINE BIRD SPRING MIGRATION
SURVEY DATA FOR THE SCHAFT CREEK AREA, SPRING
2006

Appendix 3
Waterfowl and Riverine Bird Spring Migration Survey Data for the Schaft Creek Area, Spring 2006

Date	Location	Group #	Species	Hens	Drakes	Unided	Total	Habitat Type	Comments	Wpt	LAT	LONG	NAD	Northing	Easting
02-May	Mid Schaft to end	n/a							START OF SURVEY	001	57.5961	-130.9798	83	6385474	381670
02-May	Mid Schaft to end	1	BAGO	1	1		2	RI-Rf	Schaft marsh	002	57.5899	-130.9764	83	6384770	381854
02-May	Mid Schaft to end	1	GWTE	1	1		2	RI-GI	side channel of Schaft	003	57.5811	-130.9889	83	6383821	381077
02-May	Mid Schaft to end	1	MALL	2	2		4	CR-GI	back channel	004	57.5769	-130.9904	83	6383348	380976
02-May	Mid Schaft to end	2	GWTE	4	4		8	CR-GI	back channel	004	57.5769	-130.9904	83	6383348	380976
02-May	Mid Schaft to end	3	MALL	1			1	CR-GI	back channel	004	57.5769	-130.9904	83	6383348	380976
02-May	Mid Schaft to end	1	GWTE			15	15	CR-GI	back channel	005	57.5737	-130.9902	83	6382996	380978
02-May	Mid Schaft to end	1	MALL			11	11	CR-GI	back channel	005	57.5737	-130.9902	83	6382996	380978
02-May	Mid Schaft to end	1	BAGO	1	1		2	RI-Rf	Schaft main	006	57.5555	-130.9718	83	6380935	382018
02-May	Mid Schaft to end	1	AMWI			6	6	RI-Rf		007	57.5523	-130.9752	83	6380584	381802
02-May	Mid Schaft to end	1	RNDU		1	11	12	RI-Rf		007	57.5523	-130.9752	83	6380584	381802
02-May	Mid Schaft to end	1	MALL	1	1		2	RI-Rf		007	57.5523	-130.9752	83	6380584	381802
02-May	Mid Schaft to end	1	COME	2	2		4	RI-Rf		008	57.5492	-130.9695	83	6380233	382134
02-May	Mid Schaft to end	1	MALL	3	3		6	RI-Rf		009	57.5345	-130.9699	83	6378598	382064
02-May	Mid Schaft to end	1	AMWI	2	2		4	RI-Rf		010	57.5269	-130.9777	83	6377770	381575
02-May	Mid Schaft to end	1	AMDI			1	1	RI-Rf		011	57.5156	-130.9745	83	6376504	381726
02-May	Mid Schaft to end	1	GWTE			5	5	RI-Rf		012	57.5062	-130.9794	83	6375464	381401
02-May	Mid Schaft to end	1	GWTE			4	4	CR-Rf		012	57.5062	-130.9794	83	6375464	381401
02-May	Mid Schaft to end	1	BUFF	1	1		2	RI-Rf		013	57.5013	-130.9892	83	6374941	380801
02-May	Mid Schaft to end	1	AMDI			1	1	RI-Rf		014	57.4935	-131.0032	83	6374095	379935
02-May	Mid Schaft to end	2	AMDI			1	1	RI-Rf		014	57.4935	-131.0032	83	6374095	379935
02-May	Mid Schaft to end	1	BAGO	1	1		2	RI-Rf	Schaft	015	57.4857	-131.0196	83	6373251	378927
02-May	Mid Schaft to end	1	GWTE			8	8	RI-Rf	Schaft	015	57.4857	-131.0196	83	6373251	378927
02-May	Mid Schaft to end	2	BAGO	1	1	2	4	RI-Rf		015	57.4857	-131.0196	83	6373251	378927
02-May	Mid Schaft to end	1	GOEA					Forest	Trees next to river	016	57.4629	-131.0338	83	6370738	377999
02-May	Mid Schaft to end	1	AMDI			1	1	RI-Rf/GI		017	57.4546	-131.0430	83	6369834	377421
02-May	Mid Schaft to end	2	KILD			1	1	RI-Rf/GI		017	57.4546	-131.0430	83	6369834	377421
02-May	Mid Schaft to end	2	AMDI			1	1	RI-Rf/GI		017	57.4546	-131.0430	83	6369834	377421
02-May	Mid Schaft to end	1	CAGO	1	1		2	RI-Rf		018	57.4349	-131.0672	83	6367681	375902
02-May	Mid Schaft to end	2	AMDI			1	1	RI-Rf		018	57.4349	-131.0672	83	6367681	375902
02-May	Mid Schaft to end	1	AMDI			2	2	RI-Rf		019	57.4011	-131.0518	83	6363893	376715
02-May	Mid Schaft to end	2	AMDI			1	1	RI-Rf		019	57.4011	-131.0518	83	6363893	376715
02-May	Mid Schaft to end	1	GWTE			5	5	RI-Rf		020	57.3896	-131.0350	83	6362587	377681
02-May	Mid Schaft to end	1	AMDI			2	2	RI-Rf		020	57.3896	-131.0350	83	6362587	377681
02-May	Mid Schaft to end	2	AMDI			1	1	RI-Rf		020	57.3896	-131.0350	83	6362587	377681
02-May	Mid Schaft to end	n/a							END OF SURVEY	021	57.3459	-131.0249	83	6357700	378148
02-May	MESS - camp downstream	n/a							START OF SURVEY	022	57.3910	-130.9308	83	6362559	383953
02-May	MESS - camp downstream	1	GWTE			17	17	RI-GI/RI		023	57.3949	-130.9217	83	6362974	384508
02-May	MESS - camp downstream	1	CAGO	1	1		2	RI-GI/RI		023	57.3949	-130.9217	83	6362974	384508
02-May	MESS - camp downstream	1	MALL	1	1		2	RI-GI		023	57.3949	-130.9217	83	6362974	384508
02-May	MESS - camp downstream	1	CAGO	1	1		2	RI-GI		023	57.3949	-130.9217	83	6362974	384508
02-May	MESS - camp downstream	1	AMDI			2	2	RI-GI		024	57.3859	-130.9244	83	6361982	384317
02-May	MESS - camp downstream	1	GWTE	1	1		2	RI-GI		024	57.3859	-130.9244	83	6361982	384317
02-May	MESS - camp downstream	1	MALL	1	1		2	RI-GI		025	57.3764	-130.9195	83	6360914	384582
02-May	MESS - camp downstream	1	GWTE	1	1		2	RI-GI		025	57.3764	-130.9195	83	6360914	384582
02-May	MESS - camp downstream	2	MALL	1	1		2	RI-GI		025	57.3764	-130.9195	83	6360914	384582
02-May	MESS - camp downstream	1	GWTE			20	20	RI-GI		026	57.3717	-130.9208	83	6360392	384488
02-May	MESS - camp downstream	1	GWTE			8	8	RI-GI		026	57.3717	-130.9208	83	6360392	384488
02-May	MESS - camp downstream	1	MALL			5	5	RI-GI		026	57.3717	-130.9208	83	6360392	384488

(continued)

Appendix 3

Waterfowl and Riverine Bird Spring Migration Survey Data for the Schaft Creek Area, Spring 2006 (continued)

Date	Location	Group #	Species	Hens	Drakes	Unided	Total	Habitat Type	Comments	Wpt	LAT	LONG	NAD	Northing	Easting
02-May	MESS - camp downstream	1	MALL	1	1		2	RI-GI		027	57.3602	-130.9085	83	6359090	385193
02-May	MESS - camp downstream	1	MALL	1	1		2	RI-GI		028	57.3538	-130.9085	83	6358384	385175
02-May	MESS - camp downstream	1	HOME	1	1		2	RI-GI		028	57.3538	-130.9085	83	6358384	385175
02-May	MESS - camp downstream	1	BAGO	1	1		2	RI-GI		029	57.3490	-130.9147	83	6357855	384786
02-May	MESS - camp downstream	1	MALL	1	1		2	RI-GI		029	57.3490	-130.9147	83	6357855	384786
02-May	MESS - camp downstream	1	BAGO	1			1	RI-GI		030	57.3437	-130.9168	83	6357266	384641
02-May	MESS - camp downstream	2	AMDI			1	1	RI-GI		030	57.3437	-130.9168	83	6357266	384641
02-May	MESS - camp downstream	1	unSAND				1	RI-GI	possibly snipe	031	57.3343	-130.9202	83	6356233	384408
02-May	MESS - camp downstream	1	MALL	1	1		2	RI-GI		032	57.3201	-130.9239	83	6354659	384139
02-May	MESS - camp downstream	1	GWTE			15	15	RI-GI		033	57.3083	-130.9216	83	6353339	384243
02-May	MESS - camp downstream	1	MALL	1	1		2	RI-GI		033	57.3083	-130.9216	83	6353339	384243
02-May	MESS - camp downstream	1	BEKF			1	1	RI-GI		033	57.3083	-130.9216	83	6353339	384243
02-May	MESS - camp downstream	1	unSAND				1	RI-GI		034	57.3036	-130.9253	83	6352826	384008
02-May	MESS - camp downstream	1	MALL	1	1		2	RI-GI		035	57.2975	-130.9136	83	6352123	384693
02-May	MESS - camp downstream	1	BAGO			3	3	RI-GI		035	57.2975	-130.9136	83	6352123	384693
02-May	MESS - camp downstream	2	GWTE			3	3	RI-GI		035	57.2975	-130.9136	83	6352123	384693
02-May	MESS - camp downstream	3	BAGO	1	1		2	RI-GI		035	57.2975	-130.9136	83	6352123	384693
02-May	MESS - camp downstream	3	BUFF	1	1		2	RI-GI		035	57.2975	-130.9136	83	6352123	384693
02-May	MESS - camp downstream	n/a							stop for fuel - RESTART at 13:14	036	57.2934	-130.9193	83	6351677	384334
02-May									End survey	043	57.4469	-130.9600	83	6368835	382375
02-May	MESS - camp downstream	1	CAGO			4	4	RI-PO	Skeeter Creek completed below	044	57.2832	-130.9279	83	6350553	383784
02-May	MESS - camp downstream	1	MALL	1	1		2	RI-GI		044	57.2832	-130.9279	83	6350553	383784
02-May	MESS - camp downstream	1	BAGO	1	1		2	RI-GI		044	57.2832	-130.9279	83	6350553	383784
02-May	MESS - camp downstream	2	GWTE	1	1		2	RI-GI		044	57.2832	-130.9279	83	6350553	383784
02-May	MESS - camp downstream	1	GWTE			12	12	RI-GI		045	57.2799	-130.9239	83	6350179	384015
02-May	MESS - camp downstream	1	GADW			1	1	RI-GI		045	57.2799	-130.9239	83	6350179	384015
02-May	MESS - camp downstream	1	MALL			5	5	RI-GI		046	57.2681	-130.9173	83	6348856	384375
02-May	MESS - camp downstream	1	AMDI			1	1	RI-GI		047	57.2643	-130.9189	83	6348436	384265
02-May	MESS - camp downstream	1	MALL	1	1		5	RI-GI		048	57.2621	-130.9207	83	6348195	384149
02-May	MESS - camp downstream	1	GWTE			12	12	RI-GI		048	57.2621	-130.9207	83	6348195	384149
02-May	MESS - camp downstream	1	NOHA			1	1	RI-GI		048	57.2621	-130.9207	83	6348195	384149
02-May	MESS - camp downstream	1	MALL	4	4	8+	24	RI-PO-OT	big flock of waterfowl in pond	049	57.2590	-130.9258	83	6347862	383837
02-May	MESS - camp downstream	1	GWTE			29+	43	RI-PO-OT	big flock of waterfowl	049	57.2590	-130.9258	83	6347862	383837
02-May	MESS - camp downstream	1	NOPI			4+	6	RI-PO-OT	big flock of waterfowl	049	57.2590	-130.9258	83	6347862	383837
02-May	MESS - camp downstream	1	unSAND			1+	1	RI-PO-OT	big flock of waterfowl - solitary or spotted sandpiper?	049	57.2590	-130.9258	83	6347862	383837
02-May	MESS - camp downstream	n/a							END OF SURVEY - rest of river snow & ice	050	57.2003	-130.9054	83	6341293	384882
02-May	MESS - camp downstream	1	BAEA						in moose kill	051	57.2789	-130.9221	83	6350072	384122
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	BAEA				1		Rough legged	037	57.5266	-130.9767	83	6377731	381634
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	n/a							START OF SURVEY - small drainage between Schaft & Mess	038	57.5069	-130.9811	83	6375549	381306
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	MALL	1	1		2	CR-GI	Skeeter drainage	039	57.5004	-130.9722	83	6374802	381817

(continued)

Appendix 3
Waterfowl and Riverine Bird Spring Migration Survey Data for the Schaft Creek Area, Spring 2006 (continued)

Date	Location	Group #	Species	Hens	Drakes	Unided	Total	Habitat Type	Comments	Wpt	LAT	LONG	NAD	Northing	Easting
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	MALL	1	1		2	CR-GI		040	57.4927	-130.9758	83	6373958	381575
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	GYLE			1	1	BO-CR		040	57.4927	-130.9758	83	6373958	381575
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	2	MALL	1	1		2	CR-GI		040	57.4927	-130.9758	83	6373958	381575
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	GWTE	2	2		4	CR-GI		041	57.4907	-130.9781	83	6373739	381430
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	2	MALL	1	1		2	CR-GI		041	57.4907	-130.9781	83	6373739	381430
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	MALL	1	1		2	CR-GI-Rf		042	57.4659	-130.9643	83	6370955	382180
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	GWTE			3	3	CR-GI-Rf		042	57.4659	-130.9643	83	6370955	382180
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	n/a							END OF SURVEY - Skeeter drainage	042	57.4659	-130.9643	83	6370955	382180
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	n/a							RE-START SURVEY	052	57.3982	-130.9184	83	6363334	384716
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	MALL			9	9	RI-GI		052	57.3982	-130.9184	83	6363334	384716
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	BAGO	2	1		3	RI-GI		052	57.3982	-130.9184	83	6363334	384716
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	RNDU	1			1	RI-GI		052	57.3982	-130.9184	83	6363334	384716
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	CAGO	1	1		2	RI-GI		052	57.3982	-130.9184	83	6363334	384716
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	NOHA				1	RI-GI across		053	57.4054	-130.9076	83	6364127	385392
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	CAGO			7	7	RI-GI		053	57.4054	-130.9076	83	6364127	385392
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	GWTE			25	25	RI-GI		053	57.4054	-130.9076	83	6364127	385392
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	BAGO		1		1	RI-GI		053	57.4054	-130.9076	83	6364127	385392
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	MALL	2	2		4	RI-GI		053	57.4054	-130.9076	83	6364127	385392
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	CAGO			3	3	RI-GI		054	57.4128	-130.9109	83	6364947	385214
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	GWTE			3	3	RI-GI		054	57.4128	-130.9109	83	6364947	385214
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	MALL	2	2		4	RI-GI		054	57.4128	-130.9109	83	6364947	385214
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	COME	1	2		3	RI-GI		054	57.4128	-130.9109	83	6364947	385214
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	2	MALL	1	1		2	RI-GI		054	57.4128	-130.9109	83	6364947	385214
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	3	BAGO			12	12	RI-GI		054	57.4128	-130.9109	83	6364947	385214

(continued)

Appendix 3
Waterfowl and Riverine Bird Spring Migration Survey Data for the Schaft Creek Area, Spring 2006 (continued)

Date	Location	Group #	Species	Hens	Drakes	Unided	Total	Habitat Type	Comments	Wpt	LAT	LONG	NAD	Northing	Easting
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	3	GWTE			2	2	RI-GI		054	57.4128	-130.9109	83	6364947	385214
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	COME	3	2		5	RI-GI		055	57.4267	-130.9092	83	6366490	385357
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	BAGO	1	1		2	RI-GI		055	57.4267	-130.9092	83	6366490	385357
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	MALL	1	2		3	RI-GI		055	57.4267	-130.9092	83	6366490	385357
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	BAEA			1	1	RI-GI	Grizzly tracks in WPT 55 & 56	055	57.4267	-130.9092	83	6366490	385357
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	BAGO			35	35	LK-L	Large flock of BAGO in lake in open water at inlet; MALLs as well.	056	57.4645	-130.8854	83	6370662	386904
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	MALL			20+	20	LK-L	Large flock of BAGO in lake in open water at inlet; MALLs as well.	056	57.4645	-130.8854	83	6370662	386904
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	AMWI	1	1		2	RI-Rf		057	57.5157	-130.8620	83	6376327	388468
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	GWTE			5	5	RI-Rf		057	57.5157	-130.8620	83	6376327	388468
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	MALL	1	1		2	RI-Rf		057	57.5157	-130.8620	83	6376327	388468
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	AMDI			1	1	RI-Rf		057	57.5157	-130.8620	83	6376327	388468
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	AMDI			1	1	RI-Rf		058	57.5017	-130.8769	83	6374791	387529
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	AMDI			1	1	RI-Rf		059	57.5198	-130.8597	83	6376773	388616
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	2	AMDI			2	2	RI-Rf		059	57.5198	-130.8597	83	6376773	388616
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	3	AMDI			2	2	RI-Rf		059	57.5198	-130.8597	83	6376773	388616
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	AMDI			1	1	RI-Rf		060	57.5294	-130.8620	83	6377845	388509
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	GWTE	5	3		8	RI-Rf		061	57.5315	-130.8596	83	6378076	388656
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	unSAND			1	1	RI-Rf	solitary or spotted sandpiper	062	57.5369	-130.8609	83	6378679	388598
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	BEKF			1	1	RI-Rf		062	57.5369	-130.8609	83	6378679	388598
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	AMWI			78	78	PO-M	ground survey - grizzly sign & hair, good spot for scat?	063	57.5476	-130.8621	83	6379872	388554
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	RNDU			4	4	PO-M	ground survey	063	57.5476	-130.8621	83	6379872	388554
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	GWTE			47	47	PO-M	ground survey	063	57.5476	-130.8621	83	6379872	388554
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	AMWI			21	21	PO-M	ground survey	063	57.5476	-130.8621	83	6379872	388554

(continued)

Appendix 3
Waterfowl and Riverine Bird Spring Migration Survey Data for the Schaft Creek Area, Spring 2006 (continued)

Date	Location	Group #	Species	Hens	Drakes	Unided	Total	Habitat Type	Comments	Wpt	LAT	LONG	NAD	Northing	Easting
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	LESC			4	4	PO-M	ground survey	063	57.5476	-130.8621	83	6379872	388554
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	BUFF				14	PO-M	ground survey	063	57.5476	-130.8621	83	6379872	388554
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	BAGO				13	PO-M	ground survey	063	57.5476	-130.8621	83	6379872	388554
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	MALL				17	PO-M	ground survey	063	57.5476	-130.8621	83	6379872	388554
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	1	NOSH				4	PO-M	ground survey	063	57.5476	-130.8621	83	6379872	388554
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	2	GWTE			20	20	RI-Rf		063	57.5476	-130.8621	83	6379872	388554
02-May	Schaft Creek between Schaft & Mess (Skeeter Lake)	2	BAGO	5	5		10	RI-Rf		063	57.5476	-130.8621	83	6379872	388554
02-May	Mess Creek below Mess Lake	1	AMWI	1	1		2	RI-Rf		064	57.5578	-130.8683	83	6381014	388217
02-May	Mess Creek below Mess Lake	2	BAGO	1	1		2	RI-Rf		064	57.5578	-130.8683	83	6381014	388217
02-May	Mess Creek below Mess Lake	1	AMDI			1	1	CR-Rf		065	57.5641	-130.8782	83	6381739	387644
02-May	Mess Creek below Mess Lake	1	AMDI			1	1	CR-Rf		066	57.5650	-130.8443	83	6381780	389675
02-May	Mess Creek below Mess Lake	2	AMDI			2	2	CR-Rf		066	57.5650	-130.8443	83	6381780	389675
02-May	Mess Creek below Mess Lake	1	AMWI		1		1	RI-Rf	confluence of Mess & Schaft	067	57.6603	-130.9367	83	6392546	384453
02-May	Mess Creek below Mess Lake	1	GWTE	7	7		14	RI-Rf		067	57.6603	-130.9367	83	6392546	384453
02-May	Mess Creek below Mess Lake	2	BUFF	1	1		2	RI-Rf		067	57.6603	-130.9367	83	6392546	384453
02-May	Mess Creek below Mess Lake	2	BAGO	1	1		2	RI-Rf		067	57.6603	-130.9367	83	6392546	384453
02-May	Mess Creek below Mess Lake	2	RBME	1	1		2	RI-Rf		067	57.6603	-130.9367	83	6392546	384453
02-May	Mess Creek below Mess Lake	1	unSAND			2	2	RI-Rf	solitary or spotted sandpiper	068	57.6436	-130.9308	83	6390667	384751
02-May	Mess Creek below Mess Lake	2	AMDI			2	2	RI-Rf		068	57.6436	-130.9308	83	6390667	384751
02-May	Mess Creek below Mess Lake	2	GWTE	1	1		2	RI-Rf		068	57.6436	-130.9308	83	6390667	384751
02-May	Mess Creek below Mess Lake	1	GWTE	3	3		6	RI-Rf		069	57.6495	-130.9335	83	6391334	384607
02-May	Mess Creek below Mess Lake	1	unSAND			1	1	RI-Rf		070	57.6372	-130.9345	83	6389972	384510
02-May	Mess Creek below Mess Lake	1	GWTE			9	9	RI-Rf		071	57.6342	-130.9353	83	6389638	384451
02-May	Mess Creek below Mess Lake	1	AMDI			1	1	RI-Rf		072	57.6317	-130.9299	83	6389348	384767
02-May	Mess Creek below Mess Lake	2	unSAND			1	1	RI-Rf		072	57.6317	-130.9299	83	6389348	384767
02-May	Mess Creek below Mess Lake	2	RBME	1	1		2	RI-GI		072	57.6317	-130.9299	83	6389348	384767
02-May	Mess Creek below Mess Lake	1	GWTE			11	11	RI-Rf		073	57.6219	-130.9293	83	6388258	384768
02-May	Mess Creek below Mess Lake	1	AMDI			1	1	RI-Rf		074	57.6174	-130.9266	83	6387750	384919
02-May	Mess Creek below Mess Lake	2	BAGO	1	1		2	RI-Rf		074	57.6174	-130.9266	83	6387750	384919
02-May	Mess Creek below Mess Lake	1	AMWI	1	1		3	RI-Rf		075	57.6122	-130.9124	83	6387142	385746
02-May	Mess Creek below Mess Lake	2	AMDI			1	1	RI-Rf		075	57.6122	-130.9124	83	6387142	385746
02-May	Mess Creek below Mess Lake	1	BEKF			1	1	RI-Rf		076	57.5856	-130.8943	83	6384160	386746
02-May	Mess Creek below Mess Lake	1	BAGO	1	1		2	RI-Rf		077	57.5830	-130.8909	83	6383862	386945
02-May	Mess Creek below Mess Lake	n/a	AMDI			2	2	RI-Rf		078	57.5670	-130.8824	83	6382065	387401
02-May	Mess Creek below Mess Lake	n/a							END OF SURVEY	079	57.5640	-130.8805	83	6381726	387509
02-May	Schaft - Mess confluence	n/a							START OF SURVEY	080	57.6593	-130.9381	83	6392431	384366
02-May	Schaft - Mess confluence	1	BUFF	2	1		3	RI-Rf		081	57.6633	-130.9563	83	6392910	383288
02-May	Schaft - Mess confluence	1	RNDU		1		1	RI-Rf		081	57.6633	-130.9563	83	6392910	383288
02-May	Schaft - Mess confluence	1	GWTE			4	4	RI-Rf		081	57.6633	-130.9563	83	6392910	383288
									Good HADU habitat at lower Schaft						
02-May	Schaft - Mess confluence	1	AMDI			1	1	RI-Rf		082	57.6408	-130.9815	83	6390450	381715
02-May	Schaft - Mess confluence	2	AMDI			1	1	RI-Rf		082	57.6408	-130.9815	83	6390450	381715

(continued)

Appendix 3

Waterfowl and Riverine Bird Spring Migration Survey Data for the Schaft Creek Area, Spring 2006 (continued)

Date	Location	Group #	Species	Hens	Drakes	Unided	Total	Habitat Type	Comments	Wpt	LAT	LONG	NAD	Northing	Easting
02-May	Schaft - Mess confluence	1	AMDI			1	1	RI-Rf		083	57.6265	-130.9889	83	6388875	381228
02-May	Schaft - Mess confluence	2	AMDI			2	2	RI-Rf		083	57.6265	-130.9889	83	6388875	381228
02-May	Schaft - Mess confluence	1	BUFF	1	1		2	RI-Rf		084	57.6091	-130.9839	83	6386921	381466
02-May	Schaft - Mess confluence	1	BAGO	1	1		2	RI-Rf		084	57.6091	-130.9839	83	6386921	381466
02-May	Schaft - Mess confluence	2	AMDI			2	2	RI-Rf		084	57.6091	-130.9839	83	6386921	381466
02-May	Schaft - Mess confluence	n/a							END OF SURVEY	085	57.5982	-130.9814	83	6385712	381581
04-May	Lower Mess - HADU survey to WPT 20	n/a							START OF SURVEY	001	57.7874	-130.9866	83	6406772	381887
04-May	Lower Mess - HADU survey to WPT 21	1	AMDI			1	1	RI-Rf	Ok HADU habitat	002	57.7815	-130.9884	83	6406125	381765
04-May	Lower Mess - HADU survey to WPT 22	1	AMDI			1	1	RI-Rf		003	57.7761	-130.9833	83	6405510	382049
04-May	Lower Mess - HADU survey to WPT 23	1	COME		1		1	RI-Rf		001	57.7874	-130.9866	83	6406772	381887
04-May	Lower Mess - HADU survey to WPT 24	2	AMDI			1	1	RI-Rf		004	57.7686	-130.9787	83	6404669	382298
04-May	Lower Mess - HADU survey to WPT 25	1	GWTE			4	4	RI-Rf		005	57.7637	-130.9757	83	6404112	382459
04-May	Lower Mess - HADU survey to WPT 26	1	HADU		1		1	RI-Rf		006	57.7594	-130.9701	83	6403625	382780
04-May	Lower Mess - HADU survey to WPT 27	1	GWTE			3	3	RI-Rf		007	57.7576	-130.9707	83	6403425	382740
04-May	Lower Mess - HADU survey to WPT 28	1	AMDI			1	1	RI-Rf		008	57.7426	-130.9730	83	6401767	382554
04-May	Lower Mess - HADU survey to WPT 29	2	AMDI			1	1	RI-Rf		008	57.7426	-130.9730	83	6401767	382554
04-May	Lower Mess - HADU survey to WPT 30	1	AMDI			1	1	RI-Rf		009	57.7332	-130.9641	83	6400702	383050
04-May	Lower Mess - HADU survey to WPT 31	1	BAGO		2		2	RI-Rf		009	57.7332	-130.9641	83	6400702	383050
04-May	Lower Mess - HADU survey to WPT 32	1	COME	1	1		2	RI-Rf		010	57.7273	-130.9643	83	6400046	383023
04-May	Lower Mess - HADU survey to WPT 33	1	GWTE			6	6	RI-Rf		010	57.7273	-130.9643	83	6400046	383023
04-May	Lower Mess - HADU survey to WPT 34	2	AMDI			1	1	RI-Rf		010	57.7273	-130.9643	83	6400046	383023
04-May	Lower Mess - HADU survey to WPT 35	1	HADU	1	1		2	RI-Rf	near Tewah Creek confluence	011	57.7038	-130.9672	83	6397436	382773
04-May	Lower Mess - HADU survey to WPT 36	1	HADU	1	1		2	RI-Rf	Tewah Creek	012	57.7011	-130.9516	83	6397105	383690
04-May	Lower Mess - HADU survey to WPT 37	1	AMDI			1	1	RI-Rf	Tewah Creek	013	57.7011	-130.9014	83	6397028	386685
04-May	Lower Mess - HADU survey to WPT 38	1	HADU	1		1	2	RI-Rf	Tewah Creek	014	57.6863	-130.8692	83	6395326	388555
04-May	Lower Mess - HADU survey to WPT 39	n/a							END OF SURVEY - Tewah Creek	015	57.6701	-130.8526	83	6393496	389497
04-May	Lower Mess - HADU survey to WPT 40	1	AMWI	2	2		4	RI-Rf		016	57.6965	-130.9603	83	6396611	383159
04-May	Lower Mess - HADU survey to WPT 41	1	AMDI			1	1	RI-Rf		017	57.6882	-130.9568	83	6395678	383339
04-May	Lower Mess - HADU survey to WPT 42	1	GWTE			7	7	RI-Rf		018	57.6849	-130.9541	83	6395305	383493
04-May	Lower Mess - HADU survey to WPT 43	1	unSAND			1	1	RI-Rf		018	57.6849	-130.9541	83	6395305	383493
04-May	Lower Mess - HADU survey to WPT 44	1	COME	1	2		3	RI-Rf		019	57.6738	-130.9380	83	6394052	384419
									END OF HADU SURVEY at Schaft confluence 22 - checking						
04-May	Lower Mess - HADU survey to WPT 45	n/a							wetlands next	020	57.6618	-130.9370	83	6392707	384435
04-May	Lower Mess - wetlands					0	0	BO	open wetland	021	57.6400	-130.9466	83	6390296	383795
04-May	Lower Mess - wetlands					0	0	LK	frozen	022	57.5861	-130.9437	83	6384296	383795
04-May	Lower Mess - wetlands					0	0	LK-M	frozen	023	57.5744	-130.9345	83	6382978	384311
04-May	Lower Mess - wetlands	1	BAGO	1	1		2	PO	beaver pond, partly frozen	024	57.5590	-130.8869	83	6381183	387108
04-May	Lower Mess - wetlands	1	MALL		1		1	PO	beaver pond, partly frozen	024	57.5590	-130.8869	83	6381183	387108
04-May	Lower Mess - wetlands					0	0	PO	open pond complex	025	57.5538	-130.8906	83	6380607	386871
04-May	Lower Mess - wetlands	1	MALL	2	1		3	LK-S	partly frozen	026	57.5497	-130.8908	83	6380151	386848
04-May	Lower Mess - wetlands					0	0	LK-M	partly frozen	027	57.5447	-130.8898	83	6379597	386888
04-May	Lower Mess - wetlands					0	0	PO	mostly frozen	028	57.5325	-130.8765	83	6378219	387647
04-May	Lower Mess - wetlands	1	BAGO	3	3		6	LK-S	partly frozen	029	57.5186	-130.8854	83	6376689	387070
04-May	Lower Mess - wetlands	1	MALL	2	2		4	LK-S	partly frozen	029	57.5186	-130.8854	83	6376689	387070
04-May	Lower Mess - wetlands					0	0	BO-L	open wetland	030	57.5052	-130.8835	83	6375187	387144
04-May	Lower Mess - wetlands					0	0	LK-S	frozen	031	57.5473	-130.9339	83	6379962	384259
04-May	Lower Mess - wetlands					0	0	LK-M	frozen	032	57.5337	-130.9458	83	6378464	383505

(continued)

Appendix 3
Waterfowl and Riverine Bird Spring Migration Survey Data for the Schaft Creek Area, Spring 2006 (continued)

Date	Location	Group #	Species	Hens	Drakes	Unided	Total	Habitat Type	Comments	Wpt	LAT	LONG	NAD	Northing	Easting
04-May	Lower Mess - wetlands	1	MALL	5	5		10	BO-L		033	57.5650	-130.9864	83	6382019	381175
04-May	Lower Mess - wetlands	1	COSN			1	1	BO-L		033	57.5650	-130.9864	83	6382019	381175
04-May	Lower Mess - wetlands	1	BAEA			1	1	MA-L	open wetland	034	57.5617	-130.9842	83	6381650	381297
04-May	Lower Mess - wetlands						0	BO-M		035	57.5499	-130.9845	83	6380335	381239
04-May	Lower Mess - wetlands	1	MALL			47	47	MA	ground count (group 1/2 from data notes)	036	57.5480	-130.9795	83	6380122	381532
04-May	Lower Mess - wetlands	1	AMWI			5	5	MA	ground count (group 1/2 from data notes)	036	57.5480	-130.9795	83	6380122	381532
04-May	Lower Mess - wetlands	1	GWTE			10	10	MA	ground count (group 1/2 from data notes)	036	57.5480	-130.9795	83	6380122	381532
04-May	Lower Mess - wetlands	1	NOPI			4	4	MA	ground count (group 1/2 from data notes)	036	57.5480	-130.9795	83	6380122	381532
04-May	Lower Mess - wetlands	1	CAGO			20	20	MA	ground count (group 2/3 from data notes)	037	57.5463	-130.9743	83	6379914	381835
04-May	Lower Mess - wetlands	1	MALL			12	12	MA	ground count (group 2/3 from data notes)	037	57.5463	-130.9743	83	6379914	381835
04-May	Lower Mess - wetlands	1	WFGE			20	20	MA	ground count (group 2/3 from data notes)	037	57.5463	-130.9743	83	6379914	381835
04-May	Lower Mess - wetlands	1	RNDU			8	8	MA	ground count (group 2/3 from data notes)	037	57.5463	-130.9743	83	6379914	381835
04-May	Lower Mess - wetlands	1	GYLE			1	1	MA	ground count (group 2/3 from data notes)	037	57.5463	-130.9743	83	6379914	381835
04-May	Lower Mess - wetlands	1	TRSW			1	1	MA	ground count (group 2/3 from data notes)	037	57.5463	-130.9743	83	6379914	381835
04-May	Lower Mess - wetlands	1	LESC			2	2	MA	ground count (group 2/3 from data notes)	037	57.5463	-130.9743	83	6379914	381835
04-May	Lower Mess - wetlands	1	AMWI			34	34	MA	ground count (group 2/3 from data notes)	037	57.5463	-130.9743	83	6379914	381835
04-May	Lower Mess - wetlands	1	NOPI			2	2	MA	ground count (group 2/3 from data notes)	037	57.5463	-130.9743	83	6379914	381835
04-May	Lower Mess - wetlands	1	BAEA			1	1	MA	Eagle nest in cottonwood - 3 eggs	038	57.5394	-130.9795	83	6379154	381506
04-May	Lower Mess - wetlands	1	RNDU			21	21	MA	ground count (group 3 from data notes)	038	57.5394	-130.9795	83	6379154	381506
04-May	Lower Mess - wetlands	1	NOHA			1	1	MA	ground count (group 3 from data notes)	038	57.5394	-130.9795	83	6379154	381506
04-May	Lower Mess - wetlands	1	SSHA			1	1	MA	ground count (group 3 from data notes)	038	57.5394	-130.9795	83	6379154	381506
04-May	Lower Mess - wetlands	1	NOSH			10	10	MA	ground count (group 4 from data notes)	039	57.5364	-130.9810	83	6378825	381407
04-May	Lower Mess - wetlands	1	NOPI			23	23	MA		039	57.5364	-130.9810	83	6378825	381407
04-May	Lower Mess - wetlands	1	GWTE			11	11	MA		039	57.5364	-130.9810	83	6378825	381407
04-May	Lower Mess - wetlands	1	AMWI			4	4	MA		039	57.5364	-130.9810	83	6378825	381407
04-May	Lower Mess - wetlands	1	RNDU			2	2	MA		039	57.5364	-130.9810	83	6378825	381407
04-May	Lower Mess - wetlands	1	BUFF	1	1		2	MA	ground count (group 5 from data notes)	040	57.5334	-130.9828	83	6378501	381290
04-May	Lower Mess - wetlands	1	CAGO			34	34	MA	ground count (group 5 from data notes)	040	57.5334	-130.9828	83	6378501	381290

(continued)

Appendix 3

Waterfowl and Riverine Bird Spring Migration Survey Data for the Schaft Creek Area, Spring 2006 (continued)

Date	Location	Group #	Species	Hens	Drakes	Unided	Total	Habitat Type	Comments	Wpt	LAT	LONG	NAD	Northing	Easting
04-May	Lower Mess - wetlands	1	AMWI			2	2	MA	ground count (group 5 from data notes)	040	57.5334	-130.9828	83	6378501	381290
04-May	Lower Mess - wetlands	1	GYLE			3	3	MA	ground count (group 5 from data notes)	040	57.5334	-130.9828	83	6378501	381290
04-May	Lower Mess - wetlands	1	TRSW			2	2	MA	ground count (group 5 from data notes)	040	57.5334	-130.9828	83	6378501	381290
04-May	Lower Mess - wetlands	1	RNDU			2	2	MA	ground count (group 5 from data notes)	040	57.5334	-130.9828	83	6378501	381290
04-May	Lower Mess - wetlands	1	NOPI			2	2	MA	ground count (group 5 from data notes)	040	57.5334	-130.9828	83	6378501	381290
04-May	Wetland complex/Marsh at Schaft	1	GWTE	1	1		2	MA-L		041	57.5162	-130.9791	83	6376576	381456
04-May	Wetland complex/Marsh at Schaft	1	MALL	1	1		2	MA-M		042	57.5295	-130.9757	83	6378053	381700
04-May	Wetland complex/Marsh at Schaft	1	BUFF	1	1		2	MA-M		042	57.5295	-130.9757	83	6378053	381700
04-May	Wetland complex/Marsh at Schaft	1	RNDU			5	5	MA-M		042	57.5295	-130.9757	83	6378053	381700
04-May	Wetland complex/Marsh at Schaft	1	RNDU			11	11	MA-M		043	57.5316	-130.9721	83	6378273	381923
04-May	Wetland complex/Marsh at Schaft	1	AMWI			4	4	MA-M		043	57.5316	-130.9721	83	6378273	381923
04-May	Wetland complex/Marsh at Schaft	1	GWTE			3	3	MA-M		043	57.5316	-130.9721	83	6378273	381923
04-May	Wetland complex/Marsh at Schaft	1	MALL	1	1		2	BO-L		044	57.5352	-130.9699	83	6378681	382068
04-May	Wetland complex/Marsh at Schaft	1	RNDU	1	1		2	BO-L		044	57.5352	-130.9699	83	6378681	382068
04-May	Wetland complex/Marsh at Schaft	1	MALL			31	31	BO-M		045	57.5807	-130.9769	83	6383757	381794
04-May	Wetland complex/Marsh at Schaft	1	RNDU		4		9	MA-L		046	57.5776	-130.9774	83	6383406	381754
04-May	Wetland complex/Marsh at Schaft	1	AMWI			24	24	MA-L		046	57.5776	-130.9774	83	6383406	381754
04-May	Wetland complex/Marsh at Schaft	1	NOPI	1	1		5	MA-L		046	57.5776	-130.9774	83	6383406	381754
04-May	Wetland complex/Marsh at Schaft	1	MALL			8	8	MA-L		046	57.5776	-130.9774	83	6383406	381754
04-May	Wetland complex/Marsh at Schaft	1	GWTE	1	1		2	MA-L		047	57.5067	-130.9843	83	6375528	381108
04-May	Wetland complex/Marsh at Schaft	1	NOHA			1	1	MA-L		047	57.5067	-130.9843	83	6375528	381108
04-May	Wetland complex/Marsh at Schaft	1	GYLE			1	1	MA-L		047	57.5067	-130.9843	83	6375528	381108
04-May	Wetland complex/Marsh at Schaft	1	MALL	1	1		2	MA-S		048	57.4984	-130.9983	83	6374628	380242
04-May	Wetland complex/Marsh at Schaft	1	NOPI			4	4	RI-GI	back channel of river	049	57.5032	-130.9967	83	6375161	380358
04-May	Wetland complex/Marsh at Schaft	1	GWTE			2	2	RI-GI		049	57.5032	-130.9967	83	6375161	380358
04-May	Wetland complex/Marsh at Schaft	1	MALL			13	13	RI-GI		049	57.5032	-130.9967	83	6375161	380358
04-May	Wetland complex/Marsh at Schaft	1	AMWI			6	6	RI-GI		049	57.5032	-130.9967	83	6375161	380358
04-May	Wetland complex/Marsh at Schaft	1	NOHA			1	1	SW	grey phase	050	57.4889	-131.0193	83	6373606	378954
04-May	Wetland complex/Marsh at Schaft	1	MALL	1	2		3	RI-GI	back channel of river	051	57.4789	-131.0441	83	6372543	377437
04-May	Wetland complex/Marsh at Schaft	2	NOHA			1	1	SW		051	57.4789	-131.0441	83	6372543	377437
04-May	Wetland complex/Marsh at Schaft	1	GWTE			11	11	LK-RI-Rf	open channel - small finger lake	052	57.4685	-131.0475	83	6371393	377200
04-May	Wetland complex/Marsh at Schaft	1	MALL			2	2	RI-Rf		052	57.4685	-131.0475	83	6371393	377200
04-May	Wetland complex/Marsh at Schaft								snow up side creek	053	57.4399	-131.0839	83	6368276	374917
04-May	Wetland complex/Marsh at Schaft	1	MALL			8	8	LK-M-frozen 90%		054	57.4378	-131.0704	83	6368017	375721
04-May	Wetland complex/Marsh at Schaft	n/a							END OF SURVEY - at pass from camp to Mess	054	57.4378	-131.0704	83	6368017	375721
04-May	Mess Creek - ducks survey of wetlands	n/a							START OF SURVEY - grizzly						
04-May	Mess Creek - ducks survey of wetlands	1	CAGO			19	19	RI-GI	observed at Mess Lake	055	57.3747	-130.9249	83	6360739	384255
04-May	Mess Creek - ducks survey of wetlands	1	AMWI			6	6	RI-GI	back channel of river	055	57.3747	-130.9249	83	6360739	384255
04-May	Mess Creek - ducks survey of wetlands	1	MALL	1	1		2	RI-GI		055	57.3747	-130.9249	83	6360739	384255
04-May	Mess Creek - ducks survey of wetlands	1	BAGO	1	1		2	RI-GI		056	57.3620	-130.9214	83	6359311	384421
04-May	Mess Creek - ducks survey of wetlands	1	GYLE			1	1	RI-GI	TURN BACK - FROZEN ABOVE HERE	056	57.3620	-130.9214	83	6359311	384421

(continued)

Appendix 3

Waterfowl and Riverine Bird Spring Migration Survey Data for the Schaft Creek Area, Spring 2006 (continued)

Date	Location	Group #	Species	Hens	Drakes	Unided	Total	Habitat Type	Comments	Wpt	LAT	LONG	NAD	Northing	Easting
04-May	Mess Creek - ducks survey of wetlands	1	CAGO			14	14	MA-S		057	57.3876	-130.9152	83	6362159	384879
04-May	Mess Creek - ducks survey of wetlands	1	MALL	1	1		2	MA-S		057	57.3876	-130.9152	83	6362159	384879
04-May	Mess Creek - ducks survey of wetlands	1	BAGO	1	2		3	RI-GI	back channel	058	57.3983	-130.9102	83	6363339	385212
04-May	Mess Creek - ducks survey of wetlands	1	MALL	1	2		3	MA-L	frozen	059	57.4149	-130.9019	83	6365168	385764
04-May	Mess Creek - ducks survey of wetlands	2	MALL	2	2		4	MA-L	partly frozen	059	57.4149	-130.9019	83	6365168	385764
04-May	Mess Creek - ducks survey of wetlands	2	NOPI	1	1		2	MA-L	partly frozen	059	57.4149	-130.9019	83	6365168	385764
04-May	Mess Creek - ducks survey of wetlands	1	NOHA			1	1	MA-L	partly frozen	060	57.4248	-130.9014	83	6366269	385820
04-May	Mess Creek - ducks survey of wetlands	1	MALL	1	1		2	MA-SW-M		061	57.4280	-130.9133	83	6366645	385119
04-May	Mess Creek - ducks survey of wetlands	1	NOHA			1	1	MA-L		062	57.4573	-130.8778	83	6369847	387338
04-May	Mess Creek - ducks survey of wetlands	1	BAGO	3	3		6	BO-L		063	57.4857	-130.8351	83	6372944	389984
04-May	Mess Creek - ducks survey of wetlands	1	AMWI			1	1	BO-L		063	57.4857	-130.8351	83	6372944	389984
04-May	Mess Creek - ducks survey of wetlands	1	GWTE			16	16	BO-L		063	57.4857	-130.8351	83	6372944	389984
04-May	Mess Creek - ducks survey of wetlands	1	NOHA			1	1	BO-L		063	57.4857	-130.8351	83	6372944	389984
04-May	Mess Creek - ducks survey of wetlands	1	BUFF			3	3	BO-L		063	57.4857	-130.8351	83	6372944	389984
04-May	Mess Creek - ducks survey of wetlands	1	CAGO			2	2	BO-L		063	57.4857	-130.8351	83	6372944	389984
04-May	Mess Creek - ducks survey of wetlands	1	NOHA			2	2	BO-L		064	57.4664	-130.8560	83	6370829	388677
04-May	Mess Creek - ducks survey of wetlands	1	BAGO	1	1	2	4	BO-L		064	57.4664	-130.8560	83	6370829	388677
04-May	Mess Creek - ducks survey of wetlands	1	MALL	1	1		2	BO-L		064	57.4664	-130.8560	83	6370829	388677
04-May	Mess Creek - ducks survey of wetlands	1	AMWI		1		1	BO-L		064	57.4664	-130.8560	83	6370829	388677
04-May	Mess Creek - ducks survey of wetlands	2	MALL	1	1		2	BO-L		064	57.4664	-130.8560	83	6370829	388677
04-May	Mess Creek - ducks survey of wetlands	1	MALL	1	1		2	BO-L		065	57.4528	-130.8650	83	6369327	388092
04-May	Mess Creek - ducks survey of wetlands	2	GWTE			10	10	BO-L		065	57.4528	-130.8650	83	6369327	388092
04-May	Mess Creek - ducks survey of wetlands	1	MALL	2	2		4	BO-L		065	57.4528	-130.8650	83	6369327	388092
04-May	Mess Creek - ducks survey of wetlands	1	MALL			10	10	PO-M		066	57.5388	-130.8592	83	6378888	388703
04-May	Mess Creek - ducks survey of wetlands	1	NOPI			4	4	PO-M		066	57.5388	-130.8592	83	6378888	388703
04-May	Mess Creek - ducks survey of wetlands	1	Ringbill			8	8	PO-M		066	57.5388	-130.8592	83	6378888	388703
04-May	Mess Creek - ducks survey of wetlands	1	AMWI			20	20	PO-M		066	57.5388	-130.8592	83	6378888	388703
04-May	Mess Creek - ducks survey of wetlands	2	MALL			8	8	MA-S		066	57.5388	-130.8592	83	6378888	388703
04-May	Mess Creek - ducks survey of wetlands	2	GWTE			20	20	MA-S		066	57.5388	-130.8592	83	6378888	388703
04-May	Mess Creek - ducks survey of wetlands	1	MALL	1	1	2	4	PO-S		067	57.6044	-130.8841	83	6386227	387415
04-May	Mess Creek - ducks survey of wetlands	1	BAGO	1	1		2	PO-M		068	57.6086	-130.8854	83	6386703	387352
04-May	Mess Creek - ducks survey of wetlands	1	GWTE	1	1		2	PO-M		068	57.6086	-130.8854	83	6386703	387352
04-May	Mess Creek - ducks survey of wetlands	2	BUFF	1	1		2	PO-M		068	57.6086	-130.8854	83	6386703	387352
04-May	Mess Creek - ducks survey of wetlands	1	MALL			3	3	PO-M		069	57.6117	-130.8904	83	6387059	387065
04-May	Mess Creek - ducks survey of wetlands	1	GWTE			3	3	PO-M		069	57.6117	-130.8904	83	6387059	387065
04-May	Mess Creek - ducks survey of wetlands	n/a							END OF SURVEY	070	57.6282	-130.8940	83	6388900	386899
									START OF SURVEY - Poor HADU habitat, too shallow & meandering, sand/silt substrate. Snow covered early May						
18-May	Mess Creek - high reach of river	n/a								001	57.3691	-130.9184	83	6360097	384628
18-May	Mess Creek - high reach of river	1	REME	1	1		2	RI-GI		002	57.3546	-130.9089	83	6358474	385151
18-May	Mess Creek - high reach of river	2	CAGO			10	10	PO-S		002	57.3546	-130.9089	83	6358474	385151
18-May	Mess Creek - high reach of river	1	MALL		1		1	RI-GI		003	57.3482	-130.9158	83	6357775	384715
18-May	Mess Creek - high reach of river	2	MALL		1		1	RI-GI		003	57.3482	-130.9158	83	6357775	384715
18-May	Mess Creek - high reach of river	1	unSAND			5	5	RI-Rf		004	57.3402	-130.9202	83	6356883	384429
18-May	Mess Creek - high reach of river	2	GOEA			1	1	forest edge	immature trumpeter swan also seen in marsh	004	57.3402	-130.9202	83	6356883	384429
18-May	Mess Creek - high reach of river	3	GWTE			3	3	RI-Rf		004	57.3402	-130.9202	83	6356883	384429

(continued)

Appendix 3

Waterfowl and Riverine Bird Spring Migration Survey Data for the Schaft Creek Area, Spring 2006 (continued)

Date	Location	Group #	Species	Hens	Drakes	Unided	Total	Habitat Type	Comments	Wpt	LAT	LONG	NAD	Northing	Easting
18-May	Mess Creek - high reach of river	1	CAGO			1	1	RI-Rf		005	57.3173	-130.9239	83	6354345	384130
18-May	Mess Creek - high reach of river	2	CAGO			2	2	RI-GI		005	57.3173	-130.9239	83	6354345	384130
18-May	Mess Creek - high reach of river	1	CAGO			2	2	PO-M	beside river	006	57.2933	-130.9187	83	6351670	384369
18-May	Mess Creek - high reach of river	1	MALL		1		1	PO-S	beside river	006	57.2933	-130.9187	83	6351670	384369
18-May	Mess Creek - high reach of river	1	TRSW			2	2	PO-M	beside river	007	57.2830	-130.9274	83	6350538	383812
18-May	Mess Creek - high reach of river	1	AMDI			1	1	RI-Rf		008	57.2697	-130.9191	83	6349043	384271
18-May	Mess Creek - high reach of river	1	AMDI			1	1	CR-Rf		009	57.2497	-130.9154	83	6346805	384431
18-May	Mess Creek - high reach of river	1	AMDI			2	2	CR-Rf		010	57.2393	-130.9129	83	6345647	384551
18-May	Mess Creek - high reach of river								frozen beyond WPT 11 for 1km, but opens up again	011	57.1875	-130.9111	83	6339876	384499
END OF MESS CREEK SURVEY															
18-May	Mess Creek - high reach of river	n/a							10:45 - going to tributaries	012	57.1644	-130.9211	83	6337327	383823
18-May	Mess Creek tributaries	1	NOHA			1	1	MA-M		013	57.2177	-130.9072	83	6343227	384826
18-May	Mess Creek tributaries	1	AMDI			1	1	CR-Rf	tributary	014	57.3326	-130.8985	83	6356007	385711
18-May	Mess Creek tributaries	1	HADU		1		1	RI-Rf	snow conditions - partly covered	015	57.3330	-130.8866	83	6356025	386427
18-May	Mess Creek tributaries	1							goats on valley floor in creek	016	57.3333	-130.8841	83	6356057	386581
18-May	Mess Creek tributaries	1	NOHA			1	1	MA-L		017	57.4265	-130.9042	83	6366461	385660
18-May	Mess Creek tributaries	1	HADU	1	1		2	CR-Rf	small trib (was frozen solid May 2/4 survey)	018	57.4378	-130.8889	83	6367699	386614
18-May	Mess Creek tributaries	1	AMDI			1	1	CR-Rf	good HADU habitat in this creek	019	57.5099	-130.8579	83	6375672	388692
18-May	Mess Creek tributaries	n/a							END OF SURVEY	020	57.4558	-130.8138	83	6369581	391175
START OF SURVEY - snow															
18-May	Schaft Creek tributaries	n/a							covered May 2 and 4 survey	021	57.4732	-131.0486	83	6371918	377146
18-May	Schaft Creek tributaries	1	AMDI			1	1	CR-Rf	trib of Schaft	021	57.4732	-131.0486	83	6371918	377146
18-May	Schaft Creek tributaries	1	HADU	1	1		2	CR-Rf	excellent habitat in this creek	022	57.4698	-131.0751	83	6371589	375545
18-May	Schaft Creek tributaries	1	AMDI			1	1	CR-Rf	excellent habitat in this creek	023	57.4698	-131.0863	83	6371601	374873
18-May	Schaft Creek tributaries	1	AMDI			1	1	CR-Rf	another trib of Schaft	024	57.4888	-131.0308	83	6373622	378263
18-May	Schaft Creek tributaries								RESTART AT 13:12	024	57.4888	-131.0308	83	6373622	378263
18-May	Schaft Creek tributaries	1	HADU	1	1		2	CR-Rf	at edge of snow	025	57.5935	-131.0285	83	6385273	378752
18-May	Schaft Creek tributaries	1	HADU	2	2		4	CR-Rf	habitat looks okay (2 pairs)	026	57.6159	-131.0021	83	6387718	380406
18-May	Schaft Creek tributaries	1	unSAND			1	1	CR-Rf	habitat looks okay	027	57.6169	-130.9943	83	6387813	380872
18-May	Schaft Creek tributaries	1	AMDI			1	1	CR-Rf	habitat looks okay	028	57.6173	-131.0291	83	6387914	378795
18-May	Schaft Creek tributaries	1	unSAND			1	1	CR-Rf		028	57.6173	-131.0291	83	6387914	378795
18-May	Schaft Creek tributaries	1	HADU	1	1		2	CR-Rf	snow at edge	029	57.6168	-131.0423	83	6387888	378008
START OF SURVEY - snow															
18-May	Upper Schaft/Hickson Creek	n/a							covered May 2 and 4 survey				83		
18-May	Upper Schaft/Hickson Creek	1	HADU	1	1		2	CR-Rf	tributary	030	57.4405	-131.0861	83	6368341	374785
18-May	Upper Schaft/Hickson Creek	1	HADU	1	1		2	RI-Rf	main stem of Schaft	031	57.4176	-131.0620	83	6365750	376156
18-May	Upper Schaft/Hickson Creek	2	AMDI			1	1	RI-Rf	main stem of Schaft	031	57.4176	-131.0620	83	6365750	376156
18-May	Upper Schaft/Hickson Creek	1	AMDI			1	1	RI-Rf	main stem of Schaft	032	57.3850	-131.0270	83	6362062	378147
18-May	Upper Schaft/Hickson Creek	1	AMDI			1	1	RI-Rf	habitat okay - Hickson Creek	033	57.3342	-131.0156	83	6356389	378664
18-May	Upper Schaft/Hickson Creek	1	AMDI			2	2	RI-Rf		034	57.3253	-131.0121	83	6355393	378851
18-May	Upper Schaft/Hickson Creek	1	AMDI			1	1	RI-Rf		035	57.3180	-131.0101	83	6354571	378941
18-May	Upper Schaft/Hickson Creek	1	AMDI			2	2	CR-Rf		036	57.3101	-131.0106	83	6353696	378890
18-May	Upper Schaft/Hickson Creek	2	AMDI			2	2	CR-Rf		036	57.3101	-131.0106	83	6353696	378890

(continued)

Appendix 3
Waterfowl and Riverine Bird Spring Migration Survey Data for the Schaft Creek Area, Spring 2006 (completed)

Date	Location	Group #	Species	Hens	Drakes	Unided	Total	Habitat Type	Comments	Wpt	LAT	LONG	NAD	Northing	Easting
									Hickson Creek - snow covered! -						
18-May	Upper Schaft/Hickson Creek	1	HADU	1	1		2	CR-Rf	see photo	037	57.2944	-131.0145	83	6351950	378601
18-May	Upper Schaft/Hickson Creek	1	AMDI			1	1	CR-Rf		038	57.2881	-131.0155	83	6351259	378523
18-May	Upper Schaft/Hickson Creek	1	HADU	1	1		2	CR-Rf		039	57.2727	-131.0279	83	6349562	377725
18-May	Upper Schaft/Hickson Creek	2	AMDI			1	1	CR-Rf		039	57.2727	-131.0279	83	6349562	377725
18-May	Upper Schaft/Hickson Creek	1	unSAND			1	1	CR-Rf	solitary sandpiper?	040	57.2673	-131.0307	83	6348972	377538
									END OF HICKSON CREEK						
									SURVEY 14:20 snow covered						
									beyond here (grizzly tracks up						
									creek)	041	57.2583	-131.0429	83	6347989	376772
									END OF SCHAFT SURVEY						
									14:30 (repeated as a measure to						
									compare between systems of						
									May 2/4 survey)	042	57.3321	-131.0836	83	6356270	374568
									START OF SKEETER SURVEY						
									14:35	043	57.3945	-130.9453	83	6362977	383089
18-May	Trib by cerry/Skeeter Creek	n/a								043	57.3945	-130.9453	83	6362977	383089
18-May	Trib by cerry/Skeeter Creek	1	BAGO		1		1	CR-GI/LK-M		044	57.4162	-130.9558	83	6365407	382528
18-May	Trib by cerry/Skeeter Creek	1	BAGO	2	2		4	LK-M		045	57.4225	-130.9595	83	6366111	382324
18-May	Trib by cerry/Skeeter Creek	1	BAGO	1	1		2	PO-L		046	57.4498	-130.9606	83	6369159	382350
18-May	Trib by cerry/Skeeter Creek	1	BAGO	1	1		2	LK-M		047	57.4644	-130.9600	83	6370775	382434
18-May	Trib by cerry/Skeeter Creek	1	GWTE			3	3	PO-S		048	57.4882	-130.9758	83	6373459	381563
18-May	Trib by cerry/Skeeter Creek	1	BAGO	1	1		2	PO-S		048	57.4882	-130.9758	83	6373459	381563
18-May	Trib by cerry/Skeeter Creek	1	GWTE			3	3	CR-GI/PO-S		049	57.4899	-130.9773	83	6373647	381475
18-May	Trib by cerry/Skeeter Creek	1	MALL	1	1		2	CR-GI/PO-S		049	57.4899	-130.9773	83	6373647	381475
18-May	Trib by cerry/Skeeter Creek	1	LESC	1	1		2	CR-GI/PO-S		049	57.4899	-130.9773	83	6373647	381475
18-May	Trib by cerry/Skeeter Creek	1	BAGO	2	2		4	CR-GI/PO-S		049	57.4899	-130.9773	83	6373647	381475
18-May	Trib by cerry/Skeeter Creek	1	GWTE	1	1		2	CR-GI/PO-S	END OF SURVEY 14:58	049	57.4899	-130.9773	83	6373647	381475

**APPENDIX 4
WATERFOWL AND RIVERINE BIRD SUMMER BREEDING
SURVEY DATA FOR THE SCHAFT CREEK AREA, SUMMER
2006**

Appendix 4
Waterfowl and Riverine Bird Summer Breeding Survey Data for the Schaft Creek Area, Summer 2006

Date	Location	WPT	Group #	Species	Brood Class and Ducklings				unID	Total	Habitat Type	Comments	WPT	LAT	LONG	NAD	Y PROJ	X PROJ	Date Time
					Hens	Drakes	unID	Total											
14-Aug-06	Mess Creek from Schaft up	1	n/a								START OF SURVEY	001	57.66	-130.94	83	6392952.93	384493.89	14-AUG-06 13:53	
14-Aug-06	Mess Creek from Schaft up	2	1	OSPR				1	1	RI-Rf	1 young osprey in tree	002	57.65	-130.94	83	6391712.68	384367.16	14-AUG-06 13:55	
14-Aug-06	Mess Creek from Schaft up	3	1	GRYE				1	1	RI-Rf	Mess creek	003	57.62	-130.93	83	6388416.06	384889.86	14-AUG-06 13:58	
14-Aug-06	Mess Creek from Schaft up	4	1	unSAND				1	1	RI-Rf	Mess creek	004	57.53	-130.86	83	6378123.90	388559.55	14-AUG-06 14:15	
14-Aug-06	Mess Creek from Schaft up	5	1	GRYE				1	1	RI-Rf		005	57.48	-130.84	83	6372513.43	389578.60	14-AUG-06 14:21	
14-Aug-06	Mess Creek from Schaft up	6	1	BUFF	3 III				3	PO-L		006	57.48	-130.83	83	6372444.22	390221.62	14-AUG-06 14:24	
14-Aug-06	Mess Creek from Schaft up	7	1	GWTE				2	2	PO-L		007	57.49	-130.83	83	6372915.59	390083.15	14-AUG-06 14:26	
14-Aug-06	Mess Creek from Schaft up	7	1	BUFF				2	2	PO-L		007	57.49	-130.83	83	6372915.59	390083.15	14-AUG-06 14:26	
14-Aug-06	Mess Creek from Schaft up	8	1	BAGO	3 III				4	LK-M		008	57.50	-130.86	83	6374309.45	388281.66	14-AUG-06 14:30	
14-Aug-06	Mess Creek from Schaft up	8	2	BAGO				7	7	LK-M	Likely some broods.	008	57.50	-130.86	83	6374309.45	388281.66	14-AUG-06 14:30	
14-Aug-06	Mess Creek from Schaft up	8	2	SCAUP				7	7	LK-M	Likely some older broods	008	57.50	-130.86	83	6374309.45	388281.66	14-AUG-06 14:30	
14-Aug-06	Mess Creek from Schaft up	9	1	UnDIVER				1	1	LK-L	Mess Lake	009	57.48	-130.88	83	6372900.51	387002.34	14-AUG-06 14:39	
14-Aug-06	Mess Creek from Schaft up	10	1	UnSCOTER	15 III				15	LK-L	Mess Lake	010	57.46	-130.88	83	6370332.10	386986.99	14-AUG-06 14:46	
14-Aug-06	Mess Creek from Schaft up	11	1	BAGO				2	2	LK-S		011	57.50	-130.88	83	6375077.86	387230.12	14-AUG-06 14:54	
14-Aug-06	Mess Creek from Schaft up	12	1	BAGO				5	5	LK-S		012	57.52	-130.88	83	6376341.08	387139.88	14-AUG-06 14:56	
14-Aug-06	Mess Creek from Schaft up	12	2	MALL					1	LK-S		012	57.52	-130.88	83	6376341.08	387139.88	14-AUG-06 14:56	
14-Aug-06	Mess Creek from Schaft up	12	2	GWTE				1	1	LK-S		012	57.52	-130.88	83	6376341.08	387139.88	14-AUG-06 14:56	
14-Aug-06	Mess Creek from Schaft up	12	3	MALL	4 III				4	LK-S		012	57.52	-130.88	83	6376341.08	387139.88	14-AUG-06 14:56	
14-Aug-06	Mess Creek from Schaft up	12	4	SCAUP	2 IIc				2	LK-S		012	57.52	-130.88	83	6376341.08	387139.88	14-AUG-06 14:56	
14-Aug-06	Mess Creek from Schaft up	12	4	MALL				3	3	LK-S		012	57.52	-130.88	83	6376341.08	387139.88	14-AUG-06 14:56	
14-Aug-06	Mess Creek from Schaft up	13	1	UnDIVER				18	18	LK-S	Mix of SCAUP & BAGO - unidentified as to age - all III or hens	013	57.53	-130.88	83	6377970.11	387674.02	14-AUG-06 15:02	
14-Aug-06	Mess Creek from Schaft up	13	1	MALL				1	1	LK-S		013	57.53	-130.88	83	6377970.11	387674.02	14-AUG-06 15:02	
14-Aug-06	Mess Creek from Schaft up	13	1	SCAUP	4 IIb				5	LK-S		013	57.53	-130.88	83	6377970.11	387674.02	14-AUG-06 15:02	
14-Aug-06	Mess Creek from Schaft up	14	1	BAGO				1	1	PO-L		014	57.61	-130.92	83	6386668.80	385225.11	14-AUG-06 15:10	
14-Aug-06	Mess Creek from Schaft up	15	1	MALL				2	2	PO-L		015	57.62	-130.92	83	6387867.09	385191.21	14-AUG-06 15:12	
14-Aug-06	Mess Creek from Schaft up	16	1	MALL				2	2	PO-L		016	57.54	-130.98	83	6379490.14	381186.12	14-AUG-06 15:41	
14-Aug-06	Mess Creek from Schaft up	16	1	MALL				2	2	PO-L		016	57.54	-130.98	83	6379490.14	381186.12	14-AUG-06 15:41	
14-Aug-06	Mess Creek from Schaft up	16	2	AMWI				13	13	PO-L		016	57.54	-130.98	83	6379490.14	381186.12	14-AUG-06 15:41	
14-Aug-06	Mess Creek from Schaft up	17	1	GWTE				2	2	RI/MA-GI	Eagle's nest nearby - empty	017	57.55	-130.98	83	6379862.96	381456.58	14-AUG-06 15:43	
14-Aug-06	Mess Creek from Schaft up	17	2	UnDABBLER	6 IIb				6	MA-L		017	57.55	-130.98	83	6379862.96	381456.58	14-AUG-06 15:43	
14-Aug-06	Mess Creek from Schaft up	18	1	MALL	3 III				3	RI-GI		018	57.58	-130.99	83	6383782.47	381146.99	14-AUG-06 15:48	
14-Aug-06	Mess Creek from Schaft up	19	1	MALL	3 III				3	MA-M		019	57.59	-130.98	83	6384477.09	381862.20	14-AUG-06 15:49	
14-Aug-06	Mess Creek from Schaft up	20	1	SCAUP	likely some III			8	8	MA/PO-L		020	57.58	-130.98	83	6383464.64	381722.82	14-AUG-06 15:50	
14-Aug-06	Mess Creek from Schaft up	20	2	MALL				1	1	MA/PO-L		020	57.58	-130.98	83	6383464.64	381722.82	14-AUG-06 15:50	
14-Aug-06	Mess Creek from Schaft up	21	1	UnDIVER				1	1	LK-S		021	57.56	-130.94	83	6381345.59	383827.72	14-AUG-06 15:54	
14-Aug-06	Mess Creek from Schaft up	22	1	RTLO				7	7	LK-M	Believe to be red-throated or arctic	022	57.53	-130.95	83	6378578.38	383184.19	14-AUG-06 15:56	
14-Aug-06	Mess Creek from Schaft up	23	1	SCAUP	3 IIb				4	LK-M		023	57.54	-130.93	83	6379565.39	384417.59	14-AUG-06 16:00	
14-Aug-06	Mess Creek from Schaft up	23	1	BAGO	3 IIb			5	5	LK-M		023	57.54	-130.93	83	6379565.39	384417.59	14-AUG-06 16:00	
14-Aug-06	Mess Creek from Schaft up	23	2	BAGO	3 IIb			1	4	LK-M		023	57.54	-130.93	83	6379565.39	384417.59	14-AUG-06 16:00	
14-Aug-06	Mess Creek from Schaft up	23	3	SCAUP	4 IIc				5	LK-M		023	57.54	-130.93	83	6379565.39	384417.59	14-AUG-06 16:00	
14-Aug-06	Mess Creek from Schaft up	24	1	BAGO				1	1	LK-S		024	57.58	-130.94	83	6384124.88	383849.31	14-AUG-06 16:06	
17-Jul-06	Mess Creek from road across from Schaft	24	n/a								START OF SURVEY	024	57.39	-130.93	83	6362366.62	384073.78	17-JUL-06 15:14	
17-Jul-06	Mess Creek from road across from Schaft	25	1	SOSA				1	1	RI-Rf		025	57.36	-130.91	83	6359048.32	385157.24	17-JUL-06 15:20	
17-Jul-06	Mess Creek from road across from Schaft	26	1	CAGO				25	25	RI-Rf/GI		026	57.35	-130.91	83	6358377.88	385161.35	17-JUL-06 15:21	
17-Jul-06	Mess Creek from road across from Schaft	27	1	CAGO	4 ic				6	RI-Rf/GI		027	57.33	-130.92	83	6355883.53	384386.98	17-JUL-06 15:24	
17-Jul-06	Mess Creek from road across from Schaft	28	1	CAGO				12	12	RI-Rf/GI		028	57.31	-130.93	83	6353748.51	383952.85	17-JUL-06 15:26	
17-Jul-06	Mess Creek from road across from Schaft	29	1	BAEA				1	1	RI-Rf	Mature forest along river	029	57.30	-130.92	83	6352459.98	384424.62	17-JUL-06 15:28	
17-Jul-06	Mess Creek from road across from Schaft	30	1	BAGO				1	1	LK-S		030	57.13	-130.93	83	6333782.13	382880.51	17-JUL-06 15:43	
17-Jul-06	Mess Creek from road across from Schaft	31	n/a									031	57.13	-130.94	83	6333293.81	382683.31	17-JUL-06 15:44	
17-Jul-06	Mess Creek from road across from Schaft	32	1	CAGO				16	16	MA-L		032	57.28	-130.93	83	6349897.52	383804.45	17-JUL-06 15:57	
17-Jul-06	Mess Creek from road across from Schaft	32	2	BAGO	2 ia				4	MA-L		032	57.28	-130.93	83	6349897.52	383804.45	17-JUL-06 15:57	
17-Jul-06	Mess Creek from road across from Schaft	32	1	MALL					2	MA-L	Eclipse drake	032	57.28	-130.93	83	6349897.52	383804.45	17-JUL-06 15:57	
17-Jul-06	Mess Creek from road across from Schaft	32	1	LESC				1	1	MA-L		032	57.28	-130.93	83	6349897.52	383804.45	17-JUL-06 15:57	
17-Jul-06	Mess Creek from road across from Schaft	33	1	COLO					3	LK-M		033	57.30	-130.91	83	6352593.81	384889.40	17-JUL-06 16:03	
17-Jul-06	Mess Creek from road across from Schaft	34	1	RNDU	3 ia				4	PO-M		034	57.31	-130.91	83	6353861.38	384682.41	17-JUL-06 16:05	
17-Jul-06	Mess Creek from road across from Schaft	34	2	RNDU					1	PO-M		034	57.31	-130.91	83	6353861.38	384682.41	17-JUL-06 16:05	
17-Jul-06	Mess Creek from road across from Schaft	35	1	BAGO					1	MA/PO-L		035	57.32	-130.91	83	6354145.79	385002.57	17-JUL-06 16:07	
17-Jul-06	Mess Creek from road across from Schaft	36	1	OSPR				1	1	MA	Trees, edge of marsh	036	57.34	-130.91	83	6356878.84	384786.30	17-JUL-06 16:11	
17-Jul-06	Mess Creek from road across from Schaft	37	1	BAGO					1	MA-M		037	57.35	-130.91	83	6357931.09	385136.32	17-JUL-06 16:12	
17-Jul-06	Mess Creek from road across from Schaft	37	1	RNDU					1	MA-M		037	57.35	-130.91	83	6357931.09	385136.32	17-JUL-06 16:12	
17-Jul-06	Mess Creek from road across from Schaft	37	1	AMWI					1	MA-M		037	57.35	-130.91	83	6357931.09	385136.32	17-JUL-06 16:12	
17-Jul-06	Mess Creek from road across from Schaft	38	1	AMWI				28	28	MA-L		038	57.37	-130.92	83	6360740.64	384324.56	17-JUL-06 16:15	
17-Jul-06	Mess Creek from road across from Schaft	38	2	GWTE	9 ia				10	MA-L		038	57.37	-130.92	83	6360740.64	384324.56	17-JUL-06 16:15	
17-Jul-06	Mess Creek from road across from Schaft	38	3	RNDU					5	MA-L		038	57.37	-130.92	83	6360740.64	384324.56	1	

Appendix 4
Waterfowl and Riverine Bird Summer Breeding Survey Data for the Schaft Creek Area, Summer 2006 (completed)

Date	Location	WPT	Group #	Species	Brood Class			unID	Total	Habitat Type	Comments	WPT	LAT	LONG	NAD	Y_PROJ	X_PROJ	Date Time
					and Ducklings	Hens	Drakes											
17-Jul-06	Mess Creek from road across from Schaft	40	1	RNDU					1	MA-L		040	57.39	-130.92	83	6362376.59	384590.16	17-JUL-06 16:22
18-Jul-06	Schaft Creek	1	n/a								START OF SURVEY - see notes	001	57.43	-131.07	83	6366915.74	375730.21	18-JUL-06 16:13
18-Jul-06	Schaft Creek	2	1	unkSAND			1	1	RI-Rf		002	57.34	-131.07	83	6356661.05	375588.84	18-JUL-06 16:23	
18-Jul-06	Schaft Creek	3	1	unkSAND			1	1	RI-Rf		003	57.31	-131.01	83	6353318.57	378816.04	18-JUL-06 16:29	
18-Jul-06	Schaft Creek	4	1							Grizzly with 2 cubs	004	57.26	-131.04	83	6348410.19	377212.30	18-JUL-06 16:34	
18-Jul-06	Schaft Creek	5	1	HADU		2		2	RI/CR-Rf	Head waters of Hickman	005	57.25	-131.06	83	6347125.85	375795.94	18-JUL-06 16:37	
18-Jul-06	Schaft Creek	6	n/a							END OF HICKMAN	006	57.24	-131.07	83	6346286.34	374990.13	18-JUL-06 16:39	
19-Jul-06	Mess Creek - Skeeter drainage	1	n/a							START OF SURVEY - down Mess to Mess Lake from Skeeter drainage	001	57.39	-130.92	83	6362476.02	384559.72	19-JUL-06 15:40	
19-Jul-06	Mess Creek - Skeeter drainage	2	1	CAGO			70	70	RI-GI/Rf	Big flock of CAGO	002	57.40	-130.91	83	6363968.26	385224.89	19-JUL-06 15:41	
19-Jul-06	Mess Creek - Skeeter drainage	3	1	CAGO			1	1	CR-GI		003	57.40	-130.92	83	6363943.95	384919.61	19-JUL-06 15:43	
19-Jul-06	Mess Creek - Skeeter drainage	4	1	BAEA			1	1	RI-Rf		004	57.45	-130.90	83	6368517.33	386031.82	19-JUL-06 15:48	
19-Jul-06	Mess Creek - Skeeter drainage	5	1	unTERN			2	2	LK	Edge of lake. Also turn around - END and head up Mess	005	57.46	-130.88	83	6370136.02	387005.11	19-JUL-06 15:49	
19-Jul-06	Mess Creek - Skeeter drainage	6	n/a							Mineral Lick	006	57.45	-130.88	83	6369474.04	387300.97	19-JUL-06 15:51	
19-Jul-06	Mess Creek - Skeeter drainage	7	1	BAGO	3 ii/ab	1		4	LK-M		007	57.43	-130.89	83	6366530.09	386518.29	19-JUL-06 15:56	
19-Jul-06	Mess Creek - Skeeter drainage	8	1	RNDU	8 ia	1		9	MA-L		008	57.42	-130.90	83	6365854.91	385732.56	19-JUL-06 16:00	
19-Jul-06	Mess Creek - Skeeter drainage	9	1	RNDU		1		1	MA-L		009	57.41	-130.91	83	6365152.78	385169.68	19-JUL-06 16:01	
19-Jul-06	Mess Creek - Skeeter drainage	10	1	RNDU		2		4	PO-L		010	57.40	-130.91	83	6363526.83	385277.21	19-JUL-06 16:05	
19-Jul-06	Mess Creek - Skeeter drainage	10	1	GWTE			3	3	PO-L		010	57.40	-130.91	83	6363526.83	385277.21	19-JUL-06 16:05	
19-Jul-06	Mess Creek - Skeeter drainage	11	1	EAGR			2	2	MA-L	eared grebe	011	57.40	-130.91	83	6363431.00	385064.87	19-JUL-06 16:07	
19-Jul-06	Mess Creek - Skeeter drainage	12	n/a							END OF MESS CREEK	012	57.40	-130.92	83	6363391.51	384373.45	19-JUL-06 16:08	
19-Jul-06	Mess Creek - Skeeter drainage	13	1	BAGO	9 ia			9	LK-S	no hen seen - just brood - likely BAGO	013	57.42	-130.95	83	6365861.75	382605.96	19-JUL-06 16:10	
19-Jul-06	Mess Creek - Skeeter drainage	14	1	BAGO	3 ib			3	LK-S	no hen seen	014	57.43	-130.95	83	6367135.22	382718.31	19-JUL-06 16:13	
19-Jul-06	Mess Creek - Skeeter drainage	15	1	BAGO	1 ib	1		2	LK-S		015	57.43	-130.95	83	6366809.21	382846.65	19-JUL-06 16:15	
19-Jul-06	Mess Creek - Skeeter drainage	16	1	AMWI		2		2	LK-S		016	57.44	-130.96	83	6368241.44	382427.69	19-JUL-06 16:16	
19-Jul-06	Mess Creek - Skeeter drainage	17	1	MAKE			1	1	RI-Rf		017	57.49	-131.00	83	6374135.43	379944.25	19-JUL-06 16:22	
19-Jul-06	Mess Creek - Skeeter drainage	18	1	RTHA			1	1	RI-Rf		018	57.48	-131.03	83	6372208.10	378193.42	19-JUL-06 16:25	
19-Jul-06	Mess Creek - Skeeter drainage	19	1	unkSAND			1	1	RI-Rf		019	57.46	-131.03	83	6370749.74	377969.79	19-JUL-06 16:26	
19-Jul-06	Mess Creek - Skeeter drainage	20	n/a							stop Schaft upstream	020	57.44	-131.07	83	6367766.92	375879.29	19-JUL-06 16:30	
19-Jul-06	Mess Creek - Skeeter drainage	21	1	AMDI			1	1	CR-Rf/Ca		021	57.47	-131.06	83	6372055.02	376592.05	19-JUL-06 16:38	
19-Jul-06	Mess Creek - Skeeter drainage	22	1	AMDI			1	1	CR-Rf/Ca		022	57.47	-131.08	83	6371606.12	375369.73	19-JUL-06 16:39	
19-Jul-06	Mess Creek - Skeeter drainage	23	n/a							END OF SURVEY	023	57.51	-130.99	83	6375798.56	380932.64	19-JUL-06 16:46	

APPENDIX 5
NORTHERN GOSHAWK CALL PLAYBACK SURVEY DATA
FOR THE SCHAFT CREEK STUDY AREA, 2006

Appendix 5
Northern Goshawk Call Playback Survey Data for the Schaft Creek Study Area, 2006

Date	Poly Id	WP #	NAD	UTM (E)	UTM (N)	Elevation (m)	Start	End	Time	Cloud %	Wind (bf.) ¹	Precip.	Temp. °C	Species	#	Response	Obs ²	Comments
15-Jun-06	SG1	177	83	0384476	6356421	735	0540	0545	5.00	70	0	None	4	Northern Goshawk	1	Territorial vocalization from app. 130 m south.	GLM	Bird called 3 times before flying back towards river (SW).
15-Jun-06	SG2	179	83	0384697	6356748	735	0712	0717	5.00	100	0	Light Rain	10	Rusty Blackbird	2	Mobbing.	GLM	
16-Jun-06	SG3	183	83	0383906	6337589	839	0516	0521	5.00	100	1	Light Rain	10	None	0	None.	GLM	
16-Jun-06	SG4	185	83	0384076	6337959	835	0546	0551	5.00	100	1	Mod. Rain	10	None	0	None.	GLM	
16-Jun-06	SG5	187	83	0384323	6338277	831	0526	0537	5.00	100	1	Mod. Rain	10	None	0	None.	GLM	
16-Jun-06	SG6	189	83	0384564	6338590	832	0814	0819	5.00	100	1	Light Rain	12	None	0	None.	GLM	
16-Jun-06	SG7	191	83	0384628	6338980	826	0911	0916	5.00	90	1	No Precipitation	14	None	0	None.	GLM	
17-Jun-06	SG8	193	83	0380502	6359924	1191	0531	0536	5.00	65	2	No Precipitation	4	None	0	None.	GLM	
17-Jun-06	SG9	195	83	0380238	6360221	1154	0612	0617	5.00	65	2	No Precipitation	4	None	0	None.	GLM	
17-Jun-06	SG10	196	83	0380422	6359808	1147	0638	0643	5.00	60	2	No Precipitation	5	None	0	None.	GLM	
17-Jun-06	SG11	198	83	0380183	6359650	1017	0713	0718	5.00	40	1	No Precipitation	7	None	0	None.	GLM	
17-Jun-06	SG12	200	83	0379999	6359603	963	0746	0751	5.00	40	1	No Precipitation	7	None	0	None.	GLM	
17-Jun-06	SG13	202	83	0379655	6359398	904	0817	0822	5.00	40	1	No Precipitation	12	None	0	None.	GLM	
17-Jun-06	SG14	204	83	0379341	6359101	908	0849	0853	5.00	40	1	No Precipitation	14	None	0	None.	GLM	
18-Jun-06	SG15	220	83	0380521	6360700	1413	0900	0905	5.00	60	1	No Precipitation	11	None	0	None.	GLM	
19-Jun-06	SG16	223	83	0382653	6333233	1022	0524	0529	5.00	10	1	No Precipitation	-2	None	0	None.	GLM	
19-Jun-06	SG17	225	83	0382765	6333592	1017	0604	0609	5.00	10	1	No Precipitation	-2	None	0	None.	GLM	
19-Jun-06	SG18	228	83	0382929	6333955	1016	0717	0722	5.00	15	1	No Precipitation	-2	None	0	None.	GLM	
20-Jun-06	SG19	231	83	0384372	6346862	764	0517	0522	5.00	100	1	No Precipitation	6	None	0	None.	GLM	
20-Jun-06	SG20	233	83	0384083	6346580	777	0555	0600	5.00	100	1	No Precipitation	6	None	0	None.	GLM	
20-Jun-06	SG21	235	83	0384181	6346977	768	0628	0633	5.00	100	1	No Precipitation	8	None	0	None.	GLM	
20-Jun-06	SG22	237	83	0384123	6347337	764	0746	0751	5.00	65	1	No Precipitation	9	None	0	None.	GLM	
20-Jun-06	SG23	239	83	0383946	6347697	760	0824	0829	5.00	65	1	No Precipitation	9	None	0	None.	GLM	
20-Jun-06	SG24	241	83	0383872	6348085	760	0901	0906	5.00	45	2	No Precipitation	10	None	0	None.	GLM	

¹Beaufort Scale: 0 to 1 - calm, smoke rises vertically; 1 to 3 - light air, direction of wind shown by smoke drift, but not by wind vanes.

²GLM = Guy L. Monty.

**APPENDIX 6
STAND WATCH SURVEY DATA FOR THE SCHAFT CREEK
STUDY AREA, 2006**

Appendix 6
Stand Watch Survey Data for the Schaft Creek Study Area, 2006

Date	Poly Id	WP #	NAD	UTM (E)	UTM (N)	Elevation (m)	Start	End	Cloud %	Wind (bf.) ¹	Precip.	Temp. °C	Obs. ²	Species	#	Comments
15-Jun-06	SAS1	182	83	0384642	6355237	N/A	1100	1200	80	1	No Precipitation	16'	GLM	Osprey	2	Nest.
16-Jun-06	SAS2	192	83	0385833	6340018	N/A	1105	1125	90	1	No Precipitation	16'	GLM	None observed.	0	Aerial search of cliff bands. No raptors or likely nests observed. Two Mountain Goats present.
17-Jun-06	SAS3	208 & 210	83	0384375	6361964	N/A	1030	1100	40	1	No Precipitation	15'	GLM	Osprey	1	Aerial survey of all of Mess Creek. Active nest at Way point # 209; 0384524 x 6359408
17-Jun-06	SAS3	208 & 210	83	0384375	6361964	N/A	1030	1100	40	1	No Precipitation	15'	GLM	Osprey	1	Active nest at Way point # 182; 0384642 x 6355237
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Alder Flycatcher	7	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	American Robin	7	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Barrow's Goldeneye	2	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Blackpoll Warbler	4	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Bohemian Waxwing	11	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Canada Goose	2	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Common Yellowthroat	7	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Greater Yellowlegs	1	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Green-winged Teal	2	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Harlequin Duck	1	Adult male.
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Hooded Merganser	1	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Lesser Scaup	4	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Lincoln's Sparrow	3	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Mallard	2	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Northern Rough-winged Swallow	8	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Orange-crowned Warbler	1	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Osprey	1	Carrying nesting material upstream.
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Pine Siskin	30	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Ring-necked Duck	2	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Ruby-crowned Kinglet	1	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Rusty Blackbird	16	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Solitary Sandpiper	3	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Song Sparrow	4	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Swainson's Thrush	4	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Tennessee Warbler	8	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Tree Swallow	1	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Wilson's Snipe	5	
15-Jun-06	SSW1	181	83	0384803	6356976	731	0800	1030	100	1	No Precipitation	15'	GLM	Yellow Warbler	13	
16-Jun-06	SSW2	191	83	0384628	6338980	826	0920	1100	90	1	No Precipitation	14'	GLM	American Three-toed Woodpecker	1	
16-Jun-06	SSW2	191	83	0384628	6338980	826	0920	1100	90	1	No Precipitation	14'	GLM	Golden-crowned Kinglet	5	
16-Jun-06	SSW2	191	83	0384628	6338980	826	0920	1100	90	1	No Precipitation	14'	GLM	MacGillivray's Warbler	1	
16-Jun-06	SSW2	191	83	0384628	6338980	826	0920	1100	90	1	No Precipitation	14'	GLM	Orange-crowned Warbler	3	
16-Jun-06	SSW2	191	83	0384628	6338980	826	0920	1100	90	1	No Precipitation	14'	GLM	Pine Siskin	3	
16-Jun-06	SSW2	191	83	0384628	6338980	826	0920	1100	90	1	No Precipitation	14'	GLM	Spotted Sandpiper	2	
16-Jun-06	SSW2	191	83	0384628	6338980	826	0920	1100	90	1	No Precipitation	14'	GLM	Swainson's Thrush	1	
16-Jun-06	SSW2	191	83	0384628	6338980	826	0920	1100	90	1	No Precipitation	14'	GLM	Townsend's Warbler	3	
16-Jun-06	SSW2	191	83	0384628	6338980	826	0920	1100	90	1	No Precipitation	14'	GLM	Varied Thrush	2	
16-Jun-06	SSW2	191	83	0384628	6338980	826	0920	1100	90	1	No Precipitation	14'	GLM	Yellow Warbler	2	
18-Jun-06	SSW3	222	83	0380554	6360048	N/A	0945	0955	60	1	No Precipitation	11'	GLM	Sooty Grouse	1	Female Sooty Grouse on nest under overhanging bank. 5 eggs. Photographed.
19-Jun-06	SSW4	230	83	0382881	6333817	1016	0830	1030	10	1	No Precipitation	0'	GLM	Hammond's Flycatcher	1	
19-Jun-06	SSW4	230	83	0382881	6333817	1016	0830	1030	10	1	No Precipitation	0'	GLM	Hermit Thrush	1	
19-Jun-06	SSW4	230	83	0382881	6333817	1016	0830	1030	10	1	No Precipitation	0'	GLM	Pine Siskin	24	
19-Jun-06	SSW4	230	83	0382881	6333817	1016	0830	1030	10	1	No Precipitation	0'	GLM	Townsend's Warbler	1	
19-Jun-06	SSW4	230	83	0382881	6333817	1016	0830	1030	10	1	No Precipitation	0'	GLM	Winter Wren	3	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Alder Flycatcher	3	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Barrow's Goldeneye	1	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Bohemian Waxwing	1	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Canada Goose	3	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Cedar Waxwing	4	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Common Merganser	1	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Common Raven	2	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Common Yellowthroat	1	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Green-winged Teal	1	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Lesser Scaup	2	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Lincoln's Sparrow	1	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Mallard	5	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Merlin	1	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Orange-crowned Warbler	1	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Osprey	1	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Pine Siskin	16	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Red-tailed Hawk	1	Soaring high above us, moving west.
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Ruby-crowned Kinglet	1	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Ruffed Grouse	1	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Spotted Sandpiper	4	
20-Jun-06	SSW5	241	83	0383872	6348085	760	0915	1100	25	2	No Precipitation	15'	GLM	Yellow Warbler	5	
21-Jun-06	SSW6	256	83	0387384	6345482	1520	0910	1000	100	2	Heavy Snow	2'	GLM	Willow Ptarmigan	4	
														American Pipit	7	Standwatch cut short due to weather.

¹Beaufort Scale: 0 to 1 - calm, smoke rises vertically; 1 to 3 - light air, direction of wind shown by smoke drift, but not by wind vanes.

²GLM = Guy L. Monty.

APPENDIX 7
VARIABLE RADIUS POINT COUNT (VRPC) DATA FOR THE
SCHAFT CREEK STUDY AREA, 2006

Appendix 7
Variable Radius Point Count (VRPC) Data for the Schaft Creek Study Area, 2006

Date:	Project:	Poly Id:	WP #	NAD	UTM (E)	UTM (N)	Elevation	BEC Label	Start:	End:	Cloud %:	Wind (bf.) ¹ :	Precip:	Temp. C:	Species:	Distance	Obs ² :	Comments:
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Ruffed Grouse	20	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Northern Flicker	16	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Western Wood-Pewee	59	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Hammond's Flycatcher	46	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Alder Flycatcher	27	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Warbling Vireo	18	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Warbling Vireo	30	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Gray Jay	29	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Gray Jay	29	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Gray Jay	29	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Swainson's Thrush	40	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Swainson's Thrush	40	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	American Robin	24	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	American Robin	38	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	American Robin	45	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Yellow Warbler	5	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Yellow Warbler	17	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Yellow-rumped Warbler	22	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	American Redstart	10	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	American Redstart	16	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Northern Waterthrush	26	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Wilson's Warbler	20	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Wilson's Warbler	21	GLM	
15-Jun-06	Schaft	SS1	177	83	0384476	6356421	735	ESSFmc	0530	0535	70	0	None	4'	Lincoln's Sparrow	28	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Green-winged Teal	11	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Green-winged Teal	11	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Ruffed Grouse	12	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Solitary Sandpiper	18	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Northern Flicker	32	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Western Wood-Pewee	10	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Alder Flycatcher	30	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Warbling Vireo	30	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Gray Jay	6	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	American Robin	15	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	American Robin	23	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Tennessee Warbler	11	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Tennessee Warbler	24	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Yellow Warbler	6	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Yellow Warbler	19	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Blackpoll Warbler	18	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Song Sparrow	50	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Lincoln's Sparrow	45	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Pine Siskin	21	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Pine Siskin	21	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Pine Siskin	21	GLM	
15-Jun-06	Schaft	SS2	178	83	0384607	6356575	733	ESSFmc	0635	0640	70	0	None	4'	Pine Siskin	21	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Mallard	31	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Mallard	31	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Ruffed Grouse	2	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Solitary Sandpiper	40	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Wilson's Snipe	4	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Wilson's Snipe	7	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Western Wood-Pewee	60	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Alder Flycatcher	10	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Swainson's Thrush	31	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Swainson's Thrush	34	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	American Robin	1	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	American Robin	7	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Bohemian Waxwing	31	GLM	

¹ Beaufort Scale: 0 to 1 - calm, smoke rises vertically; 1 to 3 - light air, direction of wind shown by smoke drift, but not by wind vanes.

² GLM = Guy L. Monty

Appendix 7
Variable Radius Point Count (VRPC) Data for the Schaft Creek Study Area, 2006 (continued)

Date:	Project:	Poly Id:	WP #	NAD	UTM (E)	UTM (N)	Elevation	BEC Label	Start:	End:	Cloud %:	Wind (bf.) ¹ :	Precip:	Temp. C:	Species:	Distance	Obs ² :	Comments:
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Bohemian Waxwing	31	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Tennessee Warbler	8	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Tennessee Warbler	16	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Yellow Warbler	5	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Yellow Warbler	13	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Yellow Warbler	18	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Yellow Warbler	22	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Yellow Warbler	30	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Northern Waterthrush	2	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Northern Waterthrush	23	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Song Sparrow	14	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Lincoln's Sparrow	17	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Rusty Blackbird	1	GLM	
15-Jun-06	Schaft	SS3	179	83	0384697	6356748	735	ESSFmc	0702	0707	100	0	Light Rain	10'	Rusty Blackbird	3	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Western Wood-Pewee	27	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Alder Flycatcher	22	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Alder Flycatcher	45	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	American Robin	18	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Bohemian Waxwing	23	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Bohemian Waxwing	26	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Tennessee Warbler	18	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Tennessee Warbler	22	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Yellow Warbler	5	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Yellow Warbler	10	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Yellow Warbler	16	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Yellow Warbler	29	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Common Yellowthroat	7	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Common Yellowthroat	18	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Song Sparrow	24	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Lincoln's Sparrow	7	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Rusty Blackbird	15	GLM	
15-Jun-06	Schaft	SS4	180	83	0384763	6356941	734	ESSFmc	0736	0741	100	0	Light Rain	10'	Rusty Blackbird	15	GLM	
16-Jun-06	Schaft	SS5	183	83	0383906	6337589	839	ESSFmc	0507	0512	100	1	Light Rain	10'	Yellow Warbler	20	GLM	
16-Jun-06	Schaft	SS5	183	83	0383906	6337589	839	ESSFmc	0507	0512	100	1	Light Rain	10'	Yellow Warbler	23	GLM	
16-Jun-06	Schaft	SS5	183	83	0383906	6337589	839	ESSFmc	0507	0512	100	1	Light Rain	10'	American Redstart	5	GLM	
16-Jun-06	Schaft	SS5	183	83	0383906	6337589	839	ESSFmc	0507	0512	100	1	Light Rain	10'	American Redstart	23	GLM	
16-Jun-06	Schaft	SS5	183	83	0383906	6337589	839	ESSFmc	0507	0512	100	1	Light Rain	10'	Wilson's Warbler	11	GLM	
16-Jun-06	Schaft	SS5	183	83	0383906	6337589	839	ESSFmc	0507	0512	100	1	Light Rain	10'	Wilson's Warbler	30	GLM	
16-Jun-06	Schaft	SS6	184	83	0383970	6337784	835	ESSFmc	0528	0533	100	1	Light Rain	10'	Hammond's Flycatcher	42	GLM	
16-Jun-06	Schaft	SS6	184	83	0383970	6337784	835	ESSFmc	0528	0533	100	1	Light Rain	10'	Black-capped Chickadee	18	GLM	
16-Jun-06	Schaft	SS6	184	83	0383970	6337784	835	ESSFmc	0528	0533	100	1	Light Rain	10'	Black-capped Chickadee	20	GLM	
16-Jun-06	Schaft	SS6	184	83	0383970	6337784	835	ESSFmc	0528	0533	100	1	Light Rain	10'	Swainson's Thrush	36	GLM	
16-Jun-06	Schaft	SS6	184	83	0383970	6337784	835	ESSFmc	0528	0533	100	1	Light Rain	10'	American Robin	50	GLM	
16-Jun-06	Schaft	SS6	184	83	0383970	6337784	835	ESSFmc	0528	0533	100	1	Light Rain	10'	Yellow Warbler	13	GLM	
16-Jun-06	Schaft	SS6	184	83	0383970	6337784	835	ESSFmc	0528	0533	100	1	Light Rain	10'	Townsend's Warbler	37	GLM	
16-Jun-06	Schaft	SS6	184	83	0383970	6337784	835	ESSFmc	0528	0533	100	1	Light Rain	10'	American Redstart	20	GLM	
16-Jun-06	Schaft	SS6	184	83	0383970	6337784	835	ESSFmc	0528	0533	100	1	Light Rain	10'	American Redstart	21	GLM	
16-Jun-06	Schaft	SS6	184	83	0383970	6337784	835	ESSFmc	0528	0533	100	1	Light Rain	10'	Wilson's Warbler	5	GLM	
16-Jun-06	Schaft	SS6	184	83	0383970	6337784	835	ESSFmc	0528	0533	100	1	Light Rain	10'	Dark-eyed Junco	18	GLM	
16-Jun-06	Schaft	SS7	185	83	0384076	6337959	835	ESSFmc	0540	0545	100	1	Light Rain	10'	Alder Flycatcher	7	GLM	
16-Jun-06	Schaft	SS7	185	83	0384076	6337959	835	ESSFmc	0540	0545	100	1	Light Rain	10'	Golden-crowned Kinglet	19	GLM	
16-Jun-06	Schaft	SS7	185	83	0384076	6337959	835	ESSFmc	0540	0545	100	1	Light Rain	10'	Swainson's Thrush	41	GLM	
16-Jun-06	Schaft	SS7	185	83	0384076	6337959	835	ESSFmc	0540	0545	100	1	Light Rain	10'	Yellow Warbler	10	GLM	
16-Jun-06	Schaft	SS7	185	83	0384076	6337959	835	ESSFmc	0540	0545	100	1	Light Rain	10'	Townsend's Warbler	26	GLM	
16-Jun-06	Schaft	SS7	185	83	0384076	6337959	835	ESSFmc	0540	0545	100	1	Light Rain	10'	Wilson's Warbler	26	GLM	
16-Jun-06	Schaft	SS7	185	83	0384076	6337959	835	ESSFmc	0540	0545	100	1	Light Rain	10'	Dark-eyed Junco	12	GLM	
16-Jun-06	Schaft	SS7	185	83	0384076	6337959	835	ESSFmc	0540	0545	100	1	Light Rain	10'	Dark-eyed Junco	17	GLM	
16-Jun-06	Schaft	SS8	186	83	0384190	6338128	833	ESSFmc	0600	0605	100	1	Moderate Rain	10'	Winter Wren	60	GLM	
16-Jun-06	Schaft	SS8	186	83	0384190	6338128	833	ESSFmc	0600	0605	100	1	Moderate Rain	10'	Swainson's Thrush	11	GLM	

¹ Beaufort Scale: 0 to 1 - calm, smoke rises vertically; 1 to 3 - light air, direction of wind shown by smoke drift, but not by wind vanes.

² GLM = Guy L. Monty

Appendix 7
Variable Radius Point Count (VRPC) Data for the Schaft Creek Study Area, 2006 (continued)

Date:	Project:	Poly Id:	WP #	NAD	UTM (E)	UTM (N)	Elevation	BEC Label	Start:	End:	Cloud %:	Wind (bf.) ¹ :	Precip:	Temp. C:	Species:	Distance	Obs ² :	Comments:
16-Jun-06	Schaft	SS8	186	83	0384190	6338128	833	ESSFmc	0600	0605	100	1	Moderate Rain	10'	Swainson's Thrush	17	GLM	
16-Jun-06	Schaft	SS8	186	83	0384190	6338128	833	ESSFmc	0600	0605	100	1	Moderate Rain	10'	Hermit Thrush	80	GLM	
16-Jun-06	Schaft	SS8	186	83	0384190	6338128	833	ESSFmc	0600	0605	100	1	Moderate Rain	10'	Yellow Warbler	29	GLM	
16-Jun-06	Schaft	SS8	186	83	0384190	6338128	833	ESSFmc	0600	0605	100	1	Moderate Rain	10'	Yellow-rumped Warbler	55	GLM	
16-Jun-06	Schaft	SS8	186	83	0384190	6338128	833	ESSFmc	0600	0605	100	1	Moderate Rain	10'	Townsend's Warbler	24	GLM	
16-Jun-06	Schaft	SS8	186	83	0384190	6338128	833	ESSFmc	0600	0605	100	1	Moderate Rain	10'	American Redstart	16	GLM	
16-Jun-06	Schaft	SS8	186	83	0384190	6338128	833	ESSFmc	0600	0605	100	1	Moderate Rain	10'	Blackpoll Warbler	16	GLM	
16-Jun-06	Schaft	SS8	186	83	0384190	6338128	833	ESSFmc	0600	0605	100	1	Moderate Rain	10'	Blackpoll Warbler	18	GLM	
16-Jun-06	Schaft	SS8	186	83	0384190	6338128	833	ESSFmc	0600	0605	100	1	Moderate Rain	10'	Wilson's Warbler	15	GLM	
16-Jun-06	Schaft	SS8	186	83	0384190	6338128	833	ESSFmc	0600	0605	100	1	Moderate Rain	10'	Wilson's Warbler	23	GLM	
16-Jun-06	Schaft	SS9	187	83	0384323	6338277	831	ESSFmc	0620	0625	100	1	Moderate Rain	10'	Winter Wren	26	GLM	
16-Jun-06	Schaft	SS9	187	83	0384323	6338277	831	ESSFmc	0620	0625	100	1	Moderate Rain	10'	Golden-crowned Kinglet	18	GLM	
16-Jun-06	Schaft	SS9	187	83	0384323	6338277	831	ESSFmc	0620	0625	100	1	Moderate Rain	10'	Hermit Thrush	68	GLM	
16-Jun-06	Schaft	SS9	187	83	0384323	6338277	831	ESSFmc	0620	0625	100	1	Moderate Rain	10'	Yellow Warbler	7	GLM	
16-Jun-06	Schaft	SS9	187	83	0384323	6338277	831	ESSFmc	0620	0625	100	1	Moderate Rain	10'	Townsend's Warbler	32	GLM	
16-Jun-06	Schaft	SS9	187	83	0384323	6338277	831	ESSFmc	0620	0625	100	1	Moderate Rain	10'	American Redstart	16	GLM	
16-Jun-06	Schaft	SS9	187	83	0384323	6338277	831	ESSFmc	0620	0625	100	1	Moderate Rain	10'	Wilson's Warbler	21	GLM	
16-Jun-06	Schaft	SS9	187	83	0384323	6338277	831	ESSFmc	0620	0625	100	1	Moderate Rain	10'	Red Crossbill	36	GLM	
16-Jun-06	Schaft	SS10	188	83	0384467	6338411	836	ESSFmc	0712	0717	100	1	Light Rain	12'	Winter Wren	37	GLM	
16-Jun-06	Schaft	SS10	188	83	0384467	6338411	836	ESSFmc	0712	0717	100	1	Light Rain	12'	Varied Thrush	45	GLM	
16-Jun-06	Schaft	SS10	188	83	0384467	6338411	836	ESSFmc	0712	0717	100	1	Light Rain	12'	Townsend's Warbler	22	GLM	
16-Jun-06	Schaft	SS11	189	83	0384564	6338590	832	ESSFmc	0808	0813	100	1	Light Rain	12'	Golden-crowned Kinglet	2	GLM	
16-Jun-06	Schaft	SS11	189	83	0384564	6338590	832	ESSFmc	0808	0813	100	1	Light Rain	12'	Hermit Thrush	62	GLM	
16-Jun-06	Schaft	SS11	189	83	0384564	6338590	832	ESSFmc	0808	0813	100	1	Light Rain	12'	Varied Thrush	20	GLM	
16-Jun-06	Schaft	SS11	189	83	0384564	6338590	832	ESSFmc	0808	0813	100	1	Light Rain	12'	Yellow Warbler	10	GLM	
16-Jun-06	Schaft	SS11	189	83	0384564	6338590	832	ESSFmc	0808	0813	100	1	Light Rain	12'	Townsend's Warbler	16	GLM	
16-Jun-06	Schaft	SS11	189	83	0384564	6338590	832	ESSFmc	0808	0813	100	1	Light Rain	12'	Wilson's Warbler	5	GLM	
16-Jun-06	Schaft	SS11	189	83	0384564	6338590	832	ESSFmc	0808	0813	100	1	Light Rain	12'	Wilson's Warbler	37	GLM	
16-Jun-06	Schaft	SS11	189	83	0384564	6338590	832	ESSFmc	0808	0813	100	1	Light Rain	12'	Pine Siskin	3	GLM	
16-Jun-06	Schaft	SS12	190	83	0384570	6338789	843	ESSFmc	0852	0857	100	1	Light Rain	12'	Winter Wren	26	GLM	
16-Jun-06	Schaft	SS12	190	83	0384570	6338789	843	ESSFmc	0852	0857	100	1	Light Rain	12'	Varied Thrush	60	GLM	
16-Jun-06	Schaft	SS12	190	83	0384570	6338789	843	ESSFmc	0852	0857	100	1	Light Rain	12'	Townsend's Warbler	23	GLM	
16-Jun-06	Schaft	SS12	190	83	0384570	6338789	843	ESSFmc	0852	0857	100	1	Light Rain	12'	Townsend's Warbler	41	GLM	
16-Jun-06	Schaft	SS13	191	83	0384628	6338980	826	ESSFmc	0905	0910	90	1	No Precipitation	14'	Golden-crowned Kinglet	27	GLM	
16-Jun-06	Schaft	SS13	191	83	0384628	6338980	826	ESSFmc	0905	0910	90	1	No Precipitation	14'	Orange-crowned Warbler	11	GLM	
16-Jun-06	Schaft	SS13	191	83	0384628	6338980	826	ESSFmc	0905	0910	90	1	No Precipitation	14'	Yellow Warbler	36	GLM	
17-Jun-06	Schaft	SS14	193	83	0380502	6359924	1191	ESSFmc	0525	0530	65	2	No Precipitation	4'	Olive-sided Flycatcher	35	GLM	
17-Jun-06	Schaft	SS14	193	83	0380502	6359924	1191	ESSFmc	0525	0530	65	2	No Precipitation	4'	Olive-sided Flycatcher	80	GLM	
17-Jun-06	Schaft	SS14	193	83	0380502	6359924	1191	ESSFmc	0525	0530	65	2	No Precipitation	4'	Yellow-rumped Warbler	19	GLM	
17-Jun-06	Schaft	SS14	193	83	0380502	6359924	1191	ESSFmc	0525	0530	65	2	No Precipitation	4'	MacGillivray's Warbler	28	GLM	
17-Jun-06	Schaft	SS14	193	83	0380502	6359924	1191	ESSFmc	0525	0530	65	2	No Precipitation	4'	Dark-eyed Junco	4	GLM	
17-Jun-06	Schaft	SS14	193	83	0380502	6359924	1191	ESSFmc	0525	0530	65	2	No Precipitation	4'	Dark-eyed Junco	11	GLM	
17-Jun-06	Schaft	SS14	193	83	0380502	6359924	1191	ESSFmc	0525	0530	65	2	No Precipitation	4'	Pine Siskin	4	GLM	
17-Jun-06	Schaft	SS14	193	83	0380502	6359924	1191	ESSFmc	0525	0530	65	2	No Precipitation	4'	Pine Siskin	4	GLM	
17-Jun-06	Schaft	SS14	193	83	0380502	6359924	1191	ESSFmc	0525	0530	65	2	No Precipitation	4'	Pine Siskin	6	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Olive-sided Flycatcher	27	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Dusky Flycatcher	16	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Dusky Flycatcher	45	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Hermit Thrush	68	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Yellow Warbler	30	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Yellow-rumped Warbler	27	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Dark-eyed Junco	12	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Dark-eyed Junco	17	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Pine Siskin	16	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Pine Siskin	16	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Pine Siskin	16	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Pine Siskin	16	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Pine Siskin	16	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Pine Siskin	16	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Pine Siskin	16	GLM	
17-Jun-06	Schaft	SS15	194	83	0380371	6360077	1167	ESSFmc	0550	0555	65	2	No Precipitation	4'	Pine Grosbeak	28	GLM	

¹ Beaufort Scale: 0 to 1 - calm, smoke rises vertically; 1 to 3 - light air, direction of wind shown by smoke drift, but not by wind vanes.

² GLM = Guy L. Monty

Appendix 7
Variable Radius Point Count (VRPC) Data for the Schaft Creek Study Area, 2006 (continued)

Date:	Project:	Poly Id:	WP #	NAD	UTM (E)	UTM (N)	Elevation	BEC Label	Start:	End:	Cloud %:	Wind (bf.) ¹ :	Precip:	Temp. C:	Species:	Distance	Obs: ²	Comments:
17-Jun-06	Schaft	SS16	195	83	0380238	6360221	1154	ESSFmc	0606	0611	65	2	No Precipitation	4'	Olive-sided Flycatcher	90	GLM	
17-Jun-06	Schaft	SS16	195	83	0380238	6360221	1154	ESSFmc	0606	0611	65	2	No Precipitation	4'	Dusky Flycatcher	8	GLM	
17-Jun-06	Schaft	SS16	195	83	0380238	6360221	1154	ESSFmc	0606	0611	65	2	No Precipitation	4'	Dusky Flycatcher	23	GLM	
17-Jun-06	Schaft	SS16	195	83	0380238	6360221	1154	ESSFmc	0606	0611	65	2	No Precipitation	4'	Hermit Thrush	46	GLM	
17-Jun-06	Schaft	SS16	195	83	0380238	6360221	1154	ESSFmc	0606	0611	65	2	No Precipitation	4'	Orange-crowned Warbler	27	GLM	
17-Jun-06	Schaft	SS16	195	83	0380238	6360221	1154	ESSFmc	0606	0611	65	2	No Precipitation	4'	Dark-eyed Junco	4	GLM	
17-Jun-06	Schaft	SS16	195	83	0380238	6360221	1154	ESSFmc	0606	0611	65	2	No Precipitation	4'	Dark-eyed Junco	4	GLM	
17-Jun-06	Schaft	SS16	195	83	0380238	6360221	1154	ESSFmc	0606	0611	65	2	No Precipitation	4'	Dark-eyed Junco	16	GLM	
17-Jun-06	Schaft	SS16	195	83	0380238	6360221	1154	ESSFmc	0606	0611	65	2	No Precipitation	4'	Dark-eyed Junco	21	GLM	
17-Jun-06	Schaft	SS16	195	83	0380238	6360221	1154	ESSFmc	0606	0611	65	2	No Precipitation	4'	Pine Siskin	6	GLM	
17-Jun-06	Schaft	SS16	195	83	0380238	6360221	1154	ESSFmc	0606	0611	65	2	No Precipitation	4'	Pine Siskin	6	GLM	
17-Jun-06	Schaft	SS17	196	83	0380422	6359808	1147	ESSFmc	0632	0637	60	2	No Precipitation	5'	Olive-sided Flycatcher	73	GLM	
17-Jun-06	Schaft	SS17	196	83	0380422	6359808	1147	ESSFmc	0632	0637	60	2	No Precipitation	5'	Olive-sided Flycatcher	74	GLM	
17-Jun-06	Schaft	SS17	196	83	0380422	6359808	1147	ESSFmc	0632	0637	60	2	No Precipitation	5'	Warbling Vireo	60	GLM	
17-Jun-06	Schaft	SS17	196	83	0380422	6359808	1147	ESSFmc	0632	0637	60	2	No Precipitation	5'	Steller's Jay	19	GLM	
17-Jun-06	Schaft	SS17	196	83	0380422	6359808	1147	ESSFmc	0632	0637	60	2	No Precipitation	5'	Hermit Thrush	42	GLM	
17-Jun-06	Schaft	SS17	196	83	0380422	6359808	1147	ESSFmc	0632	0637	60	2	No Precipitation	5'	Hermit Thrush	45	GLM	
17-Jun-06	Schaft	SS17	196	83	0380422	6359808	1147	ESSFmc	0632	0637	60	2	No Precipitation	5'	Orange-crowned Warbler	10	GLM	
17-Jun-06	Schaft	SS17	196	83	0380422	6359808	1147	ESSFmc	0632	0637	60	2	No Precipitation	5'	Yellow Warbler	44	GLM	
17-Jun-06	Schaft	SS17	196	83	0380422	6359808	1147	ESSFmc	0632	0637	60	2	No Precipitation	5'	MacGillivray's Warbler	57	GLM	
17-Jun-06	Schaft	SS17	196	83	0380422	6359808	1147	ESSFmc	0632	0637	60	2	No Precipitation	5'	Wilson's Warbler	22	GLM	
17-Jun-06	Schaft	SS17	196	83	0380422	6359808	1147	ESSFmc	0632	0637	60	2	No Precipitation	5'	Dark-eyed Junco	8	GLM	
17-Jun-06	Schaft	SS18	197	83	0380384	6359600	1090	ESSFmc	0650	0655	60	2	No Precipitation	5'	Olive-sided Flycatcher	34	GLM	
17-Jun-06	Schaft	SS18	197	83	0380384	6359600	1090	ESSFmc	0650	0655	60	2	No Precipitation	5'	Swainson's Thrush	52	GLM	
17-Jun-06	Schaft	SS18	197	83	0380384	6359600	1090	ESSFmc	0650	0655	60	2	No Precipitation	5'	MacGillivray's Warbler	23	GLM	
17-Jun-06	Schaft	SS18	197	83	0380384	6359600	1090	ESSFmc	0650	0655	60	2	No Precipitation	5'	MacGillivray's Warbler	28	GLM	
17-Jun-06	Schaft	SS18	197	83	0380384	6359600	1090	ESSFmc	0650	0655	60	2	No Precipitation	5'	Wilson's Warbler	11	GLM	
17-Jun-06	Schaft	SS18	197	83	0380384	6359600	1090	ESSFmc	0650	0655	60	2	No Precipitation	5'	Dark-eyed Junco	34	GLM	
17-Jun-06	Schaft	SS18	197	83	0380384	6359600	1090	ESSFmc	0650	0655	60	2	No Precipitation	5'	Dark-eyed Junco	50	GLM	
17-Jun-06	Schaft	SS19	198	83	0380183	6359650	1017	ESSFmc	0707	0712	60	2	No Precipitation	5'	Olive-sided Flycatcher	28	GLM	
17-Jun-06	Schaft	SS19	198	83	0380183	6359650	1017	ESSFmc	0707	0712	60	2	No Precipitation	5'	Warbling Vireo	31	GLM	
17-Jun-06	Schaft	SS19	198	83	0380183	6359650	1017	ESSFmc	0707	0712	60	2	No Precipitation	5'	Swainson's Thrush	1	GLM	
17-Jun-06	Schaft	SS19	198	83	0380183	6359650	1017	ESSFmc	0707	0712	60	2	No Precipitation	5'	Swainson's Thrush	7	GLM	
17-Jun-06	Schaft	SS19	198	83	0380183	6359650	1017	ESSFmc	0707	0712	60	2	No Precipitation	5'	American Redstart	5	GLM	
17-Jun-06	Schaft	SS19	198	83	0380183	6359650	1017	ESSFmc	0707	0712	60	2	No Precipitation	5'	American Redstart	24	GLM	
17-Jun-06	Schaft	SS19	198	83	0380183	6359650	1017	ESSFmc	0707	0712	60	2	No Precipitation	5'	Tennessee Warbler	11	GLM	
17-Jun-06	Schaft	SS19	198	83	0380183	6359650	1017	ESSFmc	0707	0712	60	2	No Precipitation	5'	Dark-eyed Junco	3	GLM	
17-Jun-06	Schaft	SS19	198	83	0380183	6359650	1017	ESSFmc	0707	0712	60	2	No Precipitation	5'	Dark-eyed Junco	3	GLM	
17-Jun-06	Schaft	SS20	199	83	0380047	6359802	994	ESSFmc	0727	0732	40	1	No Precipitation	7'	Warbling Vireo	16	GLM	
17-Jun-06	Schaft	SS20	199	83	0380047	6359802	994	ESSFmc	0727	0732	40	1	No Precipitation	7'	Swainson's Thrush	4	GLM	
17-Jun-06	Schaft	SS20	199	83	0380047	6359802	994	ESSFmc	0727	0732	40	1	No Precipitation	7'	Swainson's Thrush	6	GLM	
17-Jun-06	Schaft	SS20	199	83	0380047	6359802	994	ESSFmc	0727	0732	40	1	No Precipitation	7'	Swainson's Thrush	19	GLM	
17-Jun-06	Schaft	SS20	199	83	0380047	6359802	994	ESSFmc	0727	0732	40	1	No Precipitation	7'	Yellow Warbler	3	GLM	
17-Jun-06	Schaft	SS20	199	83	0380047	6359802	994	ESSFmc	0727	0732	40	1	No Precipitation	7'	Yellow-rumped Warbler	14	GLM	
17-Jun-06	Schaft	SS20	199	83	0380047	6359802	994	ESSFmc	0727	0732	40	1	No Precipitation	7'	American Redstart	21	GLM	
17-Jun-06	Schaft	SS20	199	83	0380047	6359802	994	ESSFmc	0727	0732	40	1	No Precipitation	7'	MacGillivray's Warbler	10	GLM	
17-Jun-06	Schaft	SS20	199	83	0380047	6359802	994	ESSFmc	0727	0732	40	1	No Precipitation	7'	Wilson's Warbler	8	GLM	
17-Jun-06	Schaft	SS20	199	83	0380047	6359802	994	ESSFmc	0727	0732	40	1	No Precipitation	7'	Dark-eyed Junco	1	GLM	
17-Jun-06	Schaft	SS20	199	83	0380047	6359802	994	ESSFmc	0727	0732	40	1	No Precipitation	7'	Pine Siskin	44	GLM	
17-Jun-06	Schaft	SS21	200	83	0379999	6359603	963	ESSFmc	0740	0745	40	1	No Precipitation	7'	Warbling Vireo	17	GLM	
17-Jun-06	Schaft	SS21	200	83	0379999	6359603	963	ESSFmc	0740	0745	40	1	No Precipitation	7'	Swainson's Thrush	21	GLM	
17-Jun-06	Schaft	SS21	200	83	0379999	6359603	963	ESSFmc	0740	0745	40	1	No Precipitation	7'	Yellow Warbler	37	GLM	
17-Jun-06	Schaft	SS21	200	83	0379999	6359603	963	ESSFmc	0740	0745	40	1	No Precipitation	7'	American Redstart	10	GLM	
17-Jun-06	Schaft	SS21	200	83	0379999	6359603	963	ESSFmc	0740	0745	40	1	No Precipitation	7'	MacGillivray's Warbler	20	GLM	
17-Jun-06	Schaft	SS21	200	83	0379999	6359603	963	ESSFmc	0740	0745	40	1	No Precipitation	7'	Wilson's Warbler	14	GLM	
17-Jun-06	Schaft	SS21	200	83	0379999	6359603	963	ESSFmc	0740	0745	40	1	No Precipitation	7'	Dark-eyed Junco	12	GLM	
17-Jun-06	Schaft	SS21	200	83	0379999	6359603	963	ESSFmc	0740	0745	40	1	No Precipitation	7'	Pine Siskin	1	GLM	
17-Jun-06	Schaft	SS21	200	83	0379999	6359603	963	ESSFmc	0740	0745	40	1	No Precipitation	7'	Pine Siskin	1	GLM	
17-Jun-06	Schaft	SS21	200	83	0379999	6359603	963	ESSFmc	0740	0745	40	1	No Precipitation	7'	Pine Siskin	1	GLM	

¹ Beaufort Scale: 0 to 1 - calm, smoke rises vertically; 1 to 3 - light air, direction of wind shown by smoke drift, but not by wind vanes.

² GLM = Guy L. Monty

(continued)

Appendix 7
Variable Radius Point Count (VRPC) Data for the Schaft Creek Study Area, 2006 (continued)

Date:	Project:	Poly Id:	WP #	NAD	UTM (E)	UTM (N)	Elevation	BEC Label	Start:	End:	Cloud %:	Wind (bf.) ¹ :	Precip:	Temp. C:	Species:	Distance	Obs ² :	Comments:
17-Jun-06	Schaft	SS21	200	83	0379999	6359603	963	ESSFmc	0740	0745	40	1	No Precipitation	7'	Pine Siskin	1	GLM	
17-Jun-06	Schaft	SS22	201	83	0379835	6359495	931	ESSFmc	0800	0805	40	1	No Precipitation	12'	Swainson's Thrush	5	GLM	
17-Jun-06	Schaft	SS22	201	83	0379835	6359495	931	ESSFmc	0800	0805	40	1	No Precipitation	12'	Swainson's Thrush	23	GLM	
17-Jun-06	Schaft	SS22	201	83	0379835	6359495	931	ESSFmc	0800	0805	40	1	No Precipitation	12'	Cedar Waxwing	28	GLM	
17-Jun-06	Schaft	SS22	201	83	0379835	6359495	931	ESSFmc	0800	0805	40	1	No Precipitation	12'	Cedar Waxwing	28	GLM	
17-Jun-06	Schaft	SS22	201	83	0379835	6359495	931	ESSFmc	0800	0805	40	1	No Precipitation	12'	Yellow Warbler	2	GLM	
17-Jun-06	Schaft	SS22	201	83	0379835	6359495	931	ESSFmc	0800	0805	40	1	No Precipitation	12'	Yellow Warbler	3	GLM	
17-Jun-06	Schaft	SS22	201	83	0379835	6359495	931	ESSFmc	0800	0805	40	1	No Precipitation	12'	Yellow Warbler	4	GLM	
17-Jun-06	Schaft	SS22	201	83	0379835	6359495	931	ESSFmc	0800	0805	40	1	No Precipitation	12'	American Redstart	1	GLM	
17-Jun-06	Schaft	SS22	201	83	0379835	6359495	931	ESSFmc	0800	0805	40	1	No Precipitation	12'	American Redstart	11	GLM	
17-Jun-06	Schaft	SS22	201	83	0379835	6359495	931	ESSFmc	0800	0805	40	1	No Precipitation	12'	Fox Sparrow	22	GLM	
17-Jun-06	Schaft	SS22	201	83	0379835	6359495	931	ESSFmc	0800	0805	40	1	No Precipitation	12'	Dark-eyed Junco	28	GLM	
17-Jun-06	Schaft	SS23	202	83	0379655	6359398	904	ESSFmc	0811	0816	40	1	No Precipitation	12'	Olive-sided Flycatcher	23	GLM	
17-Jun-06	Schaft	SS23	202	83	0379655	6359398	904	ESSFmc	0811	0816	40	1	No Precipitation	12'	Alder Flycatcher	17	GLM	
17-Jun-06	Schaft	SS23	202	83	0379655	6359398	904	ESSFmc	0811	0816	40	1	No Precipitation	12'	Yellow Warbler	6	GLM	
17-Jun-06	Schaft	SS23	202	83	0379655	6359398	904	ESSFmc	0811	0816	40	1	No Precipitation	12'	Yellow Warbler	29	GLM	
17-Jun-06	Schaft	SS23	202	83	0379655	6359398	904	ESSFmc	0811	0816	40	1	No Precipitation	12'	American Redstart	28	GLM	
17-Jun-06	Schaft	SS23	202	83	0379655	6359398	904	ESSFmc	0811	0816	40	1	No Precipitation	12'	MacGillivray's Warbler	13	GLM	
17-Jun-06	Schaft	SS23	202	83	0379655	6359398	904	ESSFmc	0811	0816	40	1	No Precipitation	12'	Wilson's Warbler	19	GLM	
17-Jun-06	Schaft	SS23	202	83	0379655	6359398	904	ESSFmc	0811	0816	40	1	No Precipitation	12'	Fox Sparrow	20	GLM	
17-Jun-06	Schaft	SS23	202	83	0379655	6359398	904	ESSFmc	0811	0816	40	1	No Precipitation	12'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS23	202	83	0379655	6359398	904	ESSFmc	0811	0816	40	1	No Precipitation	12'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS23	202	83	0379655	6359398	904	ESSFmc	0811	0816	40	1	No Precipitation	12'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS24	203	83	0379456	6359264	898	ESSFmc	0825	0830	40	1	No Precipitation	12'	Western Wood-Pewee	12	GLM	
17-Jun-06	Schaft	SS24	203	83	0379456	6359264	898	ESSFmc	0825	0830	40	1	No Precipitation	12'	Olive-sided Flycatcher	23	GLM	
17-Jun-06	Schaft	SS24	203	83	0379456	6359264	898	ESSFmc	0825	0830	40	1	No Precipitation	12'	Swainson's Thrush	50	GLM	
17-Jun-06	Schaft	SS24	203	83	0379456	6359264	898	ESSFmc	0825	0830	40	1	No Precipitation	12'	Orange-crowned Warbler	22	GLM	
17-Jun-06	Schaft	SS24	203	83	0379456	6359264	898	ESSFmc	0825	0830	40	1	No Precipitation	12'	Townsend's Warbler	5	GLM	
17-Jun-06	Schaft	SS24	203	83	0379456	6359264	898	ESSFmc	0825	0830	40	1	No Precipitation	12'	Townsend's Warbler	24	GLM	
17-Jun-06	Schaft	SS24	203	83	0379456	6359264	898	ESSFmc	0825	0830	40	1	No Precipitation	12'	American Redstart	18	GLM	
17-Jun-06	Schaft	SS24	203	83	0379456	6359264	898	ESSFmc	0825	0830	40	1	No Precipitation	12'	American Redstart	19	GLM	
17-Jun-06	Schaft	SS24	203	83	0379456	6359264	898	ESSFmc	0825	0830	40	1	No Precipitation	12'	Dark-eyed Junco	14	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Rufous Hummingbird	1	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Olive-sided Flycatcher	11	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Red-breasted Nuthatch	12	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Cedar Waxwing	38	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Yellow-rumped Warbler	5	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Yellow-rumped Warbler	19	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Townsend's Warbler	2	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Townsend's Warbler	10	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Townsend's Warbler	15	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	3	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	3	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	3	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	3	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	3	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	3	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	3	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	3	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	7	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	7	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	7	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	7	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	7	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	7	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	7	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	7	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS25	204	83	0379341	6359101	908	ESSFmc	0843	0848	40	1	No Precipitation	14'	Pine Siskin	7	GLM	

¹ Beaufort Scale: 0 to 1 - calm, smoke rises vertically; 1 to 3 - light air, direction of wind shown by smoke drift, not by wind vanes.

² GLM = Guy L. Monty

**Appendix 7
Variable Radius Point Count (VRPC) Data for the Schaft Creek Study Area, 2006 (continued)**

Date:	Project:	Poly Id:	WP #	NAD	UTM (E)	UTM (N)	Elevation	BEC Label	Start:	End:	Cloud %:	Wind (bf.) ¹ :	Precip:	Temp. C:	Species:	Distance	Obs ² :	Comments:
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	13	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	21	GLM	
17-Jun-06	Schaft	SS26	205	83	0379199	6358957	899	ESSFmc	0859	0904	40	1	No Precipitation	14'	Pine Siskin	21	GLM	
17-Jun-06	Schaft	SS27	206	83	0379004	6358896	895	ESSFmc	0910	0915	40	1	No Precipitation	14'	Red-breasted Nuthatch	3	GLM	
17-Jun-06	Schaft	SS27	206	83	0379004	6358896	895	ESSFmc	0910	0915	40	1	No Precipitation	14'	Golden-crowned Kinglet	10	GLM	
17-Jun-06	Schaft	SS27	206	83	0379004	6358896	895	ESSFmc	0910	0915	40	1	No Precipitation	14'	Swainson's Thrush	26	GLM	
17-Jun-06	Schaft	SS27	206	83	0379004	6358896	895	ESSFmc	0910	0915	40	1	No Precipitation	14'	Varied Thrush	20	GLM	
17-Jun-06	Schaft	SS27	206	83	0379004	6358896	895	ESSFmc	0910	0915	40	1	No Precipitation	14'	Varied Thrush	31	GLM	
17-Jun-06	Schaft	SS27	206	83	0379004	6358896	895	ESSFmc	0910	0915	40	1	No Precipitation	14'	Townsend's Warbler	11	GLM	
17-Jun-06	Schaft	SS27	206	83	0379004	6358896	895	ESSFmc	0910	0915	40	1	No Precipitation	14'	Townsend's Warbler	17	GLM	male
17-Jun-06	Schaft	SS27	206	83	0379004	6358896	895	ESSFmc	0910	0915	40	1	No Precipitation	14'	Townsend's Warbler	24	GLM	female
17-Jun-06	Schaft	SS27	206	83	0379004	6358896	895	ESSFmc	0910	0915	40	1	No Precipitation	14'	Pine Siskin	32	GLM	
17-Jun-06	Schaft	SS27	206	83	0379004	6358896	895	ESSFmc	0910	0915	40	1	No Precipitation	14'	Pine Siskin	32	GLM	
17-Jun-06	Schaft	SS27	206	83	0379004	6358896	895	ESSFmc	0910	0915	40	1	No Precipitation	14'	Pine Siskin	32	GLM	
17-Jun-06	Schaft	SS27	206	83	0379004	6358896	895	ESSFmc	0910	0915	40	1	No Precipitation	14'	Pine Siskin	32	GLM	
17-Jun-06	Schaft	SS27	206	83	0379004	6358896	895	ESSFmc	0910	0915	40	1	No Precipitation	14'	Pine Siskin	32	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Swainson's Thrush	32	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Swainson's Thrush	35	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Varied Thrush	27	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Dark-eyed Junco	2	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Dark-eyed Junco	16	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Dark-eyed Junco	21	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS28	207	83	0378819	6358806	873	ESSFmc	0918	0923	40	1	No Precipitation	17'	Pine Siskin	12	GLM	
17-Jun-06	Schaft	SS29	211	83	0380781	6362021	1828	BAFAunp	0555	0600	80	1	No Precipitation	-1'	Horned Lark	40	GLM	

¹ Beaufort Scale: 0 to 1 - calm, smoke rises vertically; 1 to 3 - light air, direction of wind shown by smoke drift, but not by wind vanes.

² GLM = Guy L. Monty

(continued)

Appendix 7
Variable Radius Point Count (VRPC) Data for the Schaft Creek Study Area, 2006 (continued)

Date:	Project:	Poly Id:	WP #	NAD	UTM (E)	UTM (N)	Elevation	BEC Label	Start:	End:	Cloud %:	Wind (bf.) ¹ :	Precip:	Temp. C:	Species:	Distance	Obs ² :	Comments:
18-Jun-06	Schaft	SS29	211	83	0380781	6362021	1828	BAFAunp	0555	0600	80	1	No Precipitation	-1'	Horned Lark	44	GLM	
18-Jun-06	Schaft	SS29	211	83	0380781	6362021	1828	BAFAunp	0555	0600	80	1	No Precipitation	-1'	Gray-crowned Rosy-Finch	12	GLM	
18-Jun-06	Schaft	SS29	211	83	0380781	6362021	1828	BAFAunp	0555	0600	80	1	No Precipitation	-1'	Gray-crowned Rosy-Finch	30	GLM	
18-Jun-06	Schaft	SS30	212	83	0380651	6362210	1868	BAFAunp	0632	0637	80	1	No Precipitation	-1'	Horned Lark	4	GLM	
18-Jun-06	Schaft	SS30	212	83	0380651	6362210	1868	BAFAunp	0632	0637	80	1	No Precipitation	-1'	Horned Lark	5	GLM	
18-Jun-06	Schaft	SS30	212	83	0380651	6362210	1868	BAFAunp	0632	0637	80	1	No Precipitation	-1'	Horned Lark	12	GLM	
18-Jun-06	Schaft	SS30	212	83	0380651	6362210	1868	BAFAunp	0632	0637	80	1	No Precipitation	-1'	Horned Lark	32	GLM	
18-Jun-06	Schaft	SS30	212	83	0380651	6362210	1868	BAFAunp	0632	0637	80	1	No Precipitation	-1'	Horned Lark	35	GLM	
18-Jun-06	Schaft	SS30	212	83	0380651	6362210	1868	BAFAunp	0632	0637	80	1	No Precipitation	-1'	Gray-crowned Rosy-Finch	80	GLM	
18-Jun-06	Schaft	SS31	214	83	0380654	6361864	1792	BAFAunp	0720	0725	100	1	Light Snow	-1'	White-tailed Ptarmagin	16	GLM	
18-Jun-06	Schaft	SS31	214	83	0380654	6361864	1792	BAFAunp	0720	0725	100	1	Light Snow	-1'	Horned Lark	3	GLM	
18-Jun-06	Schaft	SS31	214	83	0380654	6361864	1792	BAFAunp	0720	0725	100	1	Light Snow	-1'	Horned Lark	5	GLM	
18-Jun-06	Schaft	SS31	214	83	0380654	6361864	1792	BAFAunp	0720	0725	100	1	Light Snow	-1'	Horned Lark	77	GLM	
18-Jun-06	Schaft	SS31	214	83	0380654	6361864	1792	BAFAunp	0720	0725	100	1	Light Snow	-1'	American Pipit	34	GLM	
18-Jun-06	Schaft	SS31	214	83	0380654	6361864	1792	BAFAunp	0720	0725	100	1	Light Snow	-1'	American Pipit	45	GLM	
18-Jun-06	Schaft	SS32	215	83	0380582	6361676	1747	BAFAunp	0735	0740	60	0	No Precipitation	5'	Horned Lark	6	GLM	
18-Jun-06	Schaft	SS32	215	83	0380582	6361676	1747	BAFAunp	0735	0740	60	0	No Precipitation	5'	Horned Lark	4	GLM	
18-Jun-06	Schaft	SS32	215	83	0380582	6361676	1747	BAFAunp	0735	0740	60	0	No Precipitation	5'	Horned Lark	11	GLM	
18-Jun-06	Schaft	SS32	215	83	0380582	6361676	1747	BAFAunp	0735	0740	60	0	No Precipitation	5'	Horned Lark	18	GLM	
18-Jun-06	Schaft	SS32	215	83	0380582	6361676	1747	BAFAunp	0735	0740	60	0	No Precipitation	5'	Horned Lark	58	GLM	
18-Jun-06	Schaft	SS32	215	83	0380582	6361676	1747	BAFAunp	0735	0740	60	0	No Precipitation	5'	American Pipit	10	GLM	
18-Jun-06	Schaft	SS32	215	83	0380582	6361676	1747	BAFAunp	0735	0740	60	0	No Precipitation	5'	American Pipit	60	GLM	
18-Jun-06	Schaft	SS33	216	83	0380593	6361477	1708	BAFAunp	0745	0750	60	0	No Precipitation	5'	Horned Lark	32	GLM	
18-Jun-06	Schaft	SS33	216	83	0380593	6361477	1708	BAFAunp	0745	0750	60	0	No Precipitation	5'	Horned Lark	40	GLM	
18-Jun-06	Schaft	SS33	216	83	0380593	6361477	1708	BAFAunp	0745	0750	60	0	No Precipitation	5'	American Pipit	3	GLM	
18-Jun-06	Schaft	SS33	216	83	0380593	6361477	1708	BAFAunp	0745	0750	60	0	No Precipitation	5'	American Pipit	8	GLM	
18-Jun-06	Schaft	SS33	216	83	0380593	6361477	1708	BAFAunp	0745	0750	60	0	No Precipitation	5'	American Pipit	12	GLM	
18-Jun-06	Schaft	SS33	216	83	0380593	6361477	1708	BAFAunp	0745	0750	60	0	No Precipitation	5'	Savannah Sparrow	3	GLM	
18-Jun-06	Schaft	SS34	217	83	0380620	6361278	1654	ESSFmc	0755	0800	60	0	No Precipitation	5'	Horned Lark	6	GLM	
18-Jun-06	Schaft	SS34	217	83	0380620	6361278	1654	ESSFmc	0755	0800	60	0	No Precipitation	5'	Horned Lark	7	GLM	
18-Jun-06	Schaft	SS34	217	83	0380620	6361278	1654	ESSFmc	0755	0800	60	0	No Precipitation	5'	Horned Lark	35	GLM	
18-Jun-06	Schaft	SS34	217	83	0380620	6361278	1654	ESSFmc	0755	0800	60	0	No Precipitation	5'	American Pipit	23	GLM	
18-Jun-06	Schaft	SS35	218	83	0380571	6361084	1567	ESSFmc	0815	0820	60	0	No Precipitation	5'	Hermit Thrush	4	GLM	
18-Jun-06	Schaft	SS35	218	83	0380571	6361084	1567	ESSFmc	0815	0820	60	0	No Precipitation	5'	Hermit Thrush	28	GLM	
18-Jun-06	Schaft	SS35	218	83	0380571	6361084	1567	ESSFmc	0815	0820	60	0	No Precipitation	5'	Hermit Thrush	60	GLM	
18-Jun-06	Schaft	SS35	218	83	0380571	6361084	1567	ESSFmc	0815	0820	60	0	No Precipitation	5'	Wilson's Warbler	12	GLM	
18-Jun-06	Schaft	SS35	218	83	0380571	6361084	1567	ESSFmc	0815	0820	60	0	No Precipitation	5'	Wilson's Warbler	26	GLM	
18-Jun-06	Schaft	SS35	218	83	0380571	6361084	1567	ESSFmc	0815	0820	60	0	No Precipitation	5'	Fox Sparrow	10	GLM	
18-Jun-06	Schaft	SS35	218	83	0380571	6361084	1567	ESSFmc	0815	0820	60	0	No Precipitation	5'	Fox Sparrow	22	GLM	
18-Jun-06	Schaft	SS35	218	83	0380571	6361084	1567	ESSFmc	0815	0820	60	0	No Precipitation	5'	Golden-crowned Sparrow	7	GLM	
18-Jun-06	Schaft	SS36	219	83	0380595	6360885	1477	ESSFmc	0840	0845	60	1	No Precipitation	11'	Ruby-crowned Kinglet	7	GLM	Likely a vagrant or accidental in this region.
18-Jun-06	Schaft	SS36	219	83	0380595	6360885	1477	ESSFmc	0840	0845	60	1	No Precipitation	11'	Ruby-crowned Kinglet	25	GLM	
18-Jun-06	Schaft	SS36	219	83	0380595	6360885	1477	ESSFmc	0840	0845	60	1	No Precipitation	11'	Cedar Waxwing	4	GLM	
18-Jun-06	Schaft	SS36	219	83	0380595	6360885	1477	ESSFmc	0840	0845	60	1	No Precipitation	11'	Cedar Waxwing	9	GLM	
18-Jun-06	Schaft	SS36	219	83	0380595	6360885	1477	ESSFmc	0840	0845	60	1	No Precipitation	11'	Wilson's Warbler	10	GLM	
18-Jun-06	Schaft	SS36	219	83	0380595	6360885	1477	ESSFmc	0840	0845	60	1	No Precipitation	11'	Wilson's Warbler	12	GLM	
18-Jun-06	Schaft	SS36	219	83	0380595	6360885	1477	ESSFmc	0840	0845	60	1	No Precipitation	11'	Fox Sparrow	2	GLM	
18-Jun-06	Schaft	SS36	219	83	0380595	6360885	1477	ESSFmc	0840	0845	60	1	No Precipitation	11'	Fox Sparrow	17	GLM	
18-Jun-06	Schaft	SS36	219	83	0380595	6360885	1477	ESSFmc	0840	0845	60	1	No Precipitation	11'	Pine Siskin	21	GLM	
18-Jun-06	Schaft	SS36	219	83	0380595	6360885	1477	ESSFmc	0840	0845	60	1	No Precipitation	11'	Pine Siskin	21	GLM	
18-Jun-06	Schaft	SS36	219	83	0380595	6360885	1477	ESSFmc	0840	0845	60	1	No Precipitation	11'	Pine Siskin	21	GLM	
18-Jun-06	Schaft	SS36	219	83	0380595	6360885	1477	ESSFmc	0840	0845	60	1	No Precipitation	11'	Pine Siskin	21	GLM	
18-Jun-06	Schaft	SS36	219	83	0380595	6360885	1477	ESSFmc	0840	0845	60	1	No Precipitation	11'	Pine Siskin	21	GLM	
18-Jun-06	Schaft	SS36	219	83	0380595	6360885	1477	ESSFmc	0840	0845	60	1	No Precipitation	11'	Pine Siskin	21	GLM	
18-Jun-06	Schaft	SS37	220	83	0380521	6360700	1413	ESSFmc	0853	0858	60	1	No Precipitation	11'	Hermit Thrush	23	GLM	
18-Jun-06	Schaft	SS37	220	83	0380521	6360700	1413	ESSFmc	0853	0858	60	1	No Precipitation	11'	American Robin	40	GLM	
18-Jun-06	Schaft	SS37	220	83	0380521	6360700	1413	ESSFmc	0853	0858	60	1	No Precipitation	11'	Ruby-crowned Kinglet	8	GLM	

¹ Beaufort Scale: 0 to 1 - calm, smoke rises vertically; 1 to 3 - light air, direction of wind shown by smoke drift, but not by wind vanes.

² GLM = Guy L. Monty

**Appendix 7
Variable Radius Point Count (VRPC) Data for the Schaft Creek Study Area, 2006 (continued)**

Date:	Project:	Poly Id:	WP #	NAD	UTM (E)	UTM (N)	Elevation	BEC Label	Start:	End:	Cloud %:	Wind (bf.) ¹ :	Precip:	Temp. C:	Species:	Distance	Obs ² :	Comments:
18-Jun-06	Schaft	SS37	220	83	0380521	6360700	1413	ESSFmc	0853	0858	60	1	No Precipitation	11'	Ruby-crowned Kinglet	18	GLM	
18-Jun-06	Schaft	SS37	220	83	0380521	6360700	1413	ESSFmc	0853	0858	60	1	No Precipitation	11'	Cedar Waxwing	12	GLM	
18-Jun-06	Schaft	SS37	220	83	0380521	6360700	1413	ESSFmc	0853	0858	60	1	No Precipitation	11'	Cedar Waxwing	13	GLM	
18-Jun-06	Schaft	SS37	220	83	0380521	6360700	1413	ESSFmc	0853	0858	60	1	No Precipitation	11'	Dark-eyed Junco	15	GLM	
18-Jun-06	Schaft	SS37	220	83	0380521	6360700	1413	ESSFmc	0853	0858	60	1	No Precipitation	11'	Fox Sparrow	26	GLM	
18-Jun-06	Schaft	SS37	220	83	0380521	6360700	1413	ESSFmc	0853	0858	60	1	No Precipitation	11'	Fox Sparrow	41	GLM	
18-Jun-06	Schaft	SS38	221	83	0380564	6360504	1371	ESSFmc	0910	0915	60	1	No Precipitation	11'	Boreal Chickadee	21	GLM	
18-Jun-06	Schaft	SS38	221	83	0380564	6360504	1371	ESSFmc	0910	0915	60	1	No Precipitation	11'	American Robin	26	GLM	
18-Jun-06	Schaft	SS38	221	83	0380564	6360504	1371	ESSFmc	0910	0915	60	1	No Precipitation	11'	Yellow-rumped Warbler	22	GLM	
18-Jun-06	Schaft	SS38	221	83	0380564	6360504	1371	ESSFmc	0910	0915	60	1	No Precipitation	11'	Yellow-rumped Warbler	28	GLM	
18-Jun-06	Schaft	SS38	221	83	0380564	6360504	1371	ESSFmc	0910	0915	60	1	No Precipitation	11'	Dark-eyed Junco	18	GLM	
18-Jun-06	Schaft	SS38	221	83	0380564	6360504	1371	ESSFmc	0910	0915	60	1	No Precipitation	11'	Dark-eyed Junco	32	GLM	
18-Jun-06	Schaft	SS38	221	83	0380564	6360504	1371	ESSFmc	0910	0915	60	1	No Precipitation	11'	Pine Siskin	0	GLM	
18-Jun-06	Schaft	SS38	221	83	0380564	6360504	1371	ESSFmc	0910	0915	60	1	No Precipitation	11'	Pine Siskin	0	GLM	
18-Jun-06	Schaft	SS38	221	83	0380564	6360504	1371	ESSFmc	0910	0915	60	1	No Precipitation	11'	Pine Siskin	0	GLM	
18-Jun-06	Schaft	SS38	221	83	0380564	6360504	1371	ESSFmc	0910	0915	60	1	No Precipitation	11'	Pine Siskin	0	GLM	
18-Jun-06	Schaft	SS38	221	83	0380564	6360504	1371	ESSFmc	0910	0915	60	1	No Precipitation	11'	Pine Siskin	0	GLM	
18-Jun-06	Schaft	SS38	221	83	0380564	6360504	1371	ESSFmc	0910	0915	60	1	No Precipitation	11'	Pine Siskin	0	GLM	
18-Jun-06	Schaft	SS38	221	83	0380564	6360504	1371	ESSFmc	0910	0915	60	1	No Precipitation	11'	Pine Siskin	0	GLM	
18-Jun-06	Schaft	SS38	221	83	0380564	6360504	1371	ESSFmc	0910	0915	60	1	No Precipitation	11'	Pine Siskin	0	GLM	
19-Jun-06	Schaft	SS39	223	83	0382653	6333233	1022	ESSFmc	0515	0520	10	1	No Precipitation	-2'	Harlequin Duck	12	GLM	
19-Jun-06	Schaft	SS39	223	83	0382653	6333233	1022	ESSFmc	0515	0520	10	1	No Precipitation	-2'	Harlequin Duck	14	GLM	
19-Jun-06	Schaft	SS39	223	83	0382653	6333233	1022	ESSFmc	0515	0520	10	1	No Precipitation	-2'	Spotted Sandpiper	7	GLM	
19-Jun-06	Schaft	SS39	223	83	0382653	6333233	1022	ESSFmc	0515	0520	10	1	No Precipitation	-2'	Spotted Sandpiper	10	GLM	
19-Jun-06	Schaft	SS39	223	83	0382653	6333233	1022	ESSFmc	0515	0520	10	1	No Precipitation	-2'	Winter Wren	18	GLM	
19-Jun-06	Schaft	SS39	223	83	0382653	6333233	1022	ESSFmc	0515	0520	10	1	No Precipitation	-2'	Winter Wren	37	GLM	
19-Jun-06	Schaft	SS39	223	83	0382653	6333233	1022	ESSFmc	0515	0520	10	1	No Precipitation	-2'	Ruby-crowned Kinglet	13	GLM	
19-Jun-06	Schaft	SS39	223	83	0382653	6333233	1022	ESSFmc	0515	0520	10	1	No Precipitation	-2'	Ruby-crowned Kinglet	25	GLM	
19-Jun-06	Schaft	SS39	223	83	0382653	6333233	1022	ESSFmc	0515	0520	10	1	No Precipitation	-2'	Townsend's Warbler	40	GLM	
19-Jun-06	Schaft	SS39	223	83	0382653	6333233	1022	ESSFmc	0515	0520	10	1	No Precipitation	-2'	Townsend's Warbler	55	GLM	
19-Jun-06	Schaft	SS39	223	83	0382653	6333233	1022	ESSFmc	0515	0520	10	1	No Precipitation	-2'	Blackpoll Warbler	4	GLM	
19-Jun-06	Schaft	SS39	223	83	0382653	6333233	1022	ESSFmc	0515	0520	10	1	No Precipitation	-2'	Wilson's Warbler	6	GLM	
19-Jun-06	Schaft	SS39	223	83	0382653	6333233	1022	ESSFmc	0515	0520	10	1	No Precipitation	-2'	Wilson's Warbler	12	GLM	
19-Jun-06	Schaft	SS39	223	83	0382653	6333233	1022	ESSFmc	0515	0520	10	1	No Precipitation	-2'	Wilson's Warbler	12	GLM	
19-Jun-06	Schaft	SS39	223	83	0382653	6333233	1022	ESSFmc	0515	0520	10	1	No Precipitation	-2'	Wilson's Warbler	28	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Hammond's Flycatcher	17	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Varied Thrush	40	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Ruby-crowned Kinglet	16	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Ruby-crowned Kinglet	20	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Townsend's Warbler	4	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Townsend's Warbler	18	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Blackpoll Warbler	3	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Wilson's Warbler	12	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Wilson's Warbler	18	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS40	224	83	0382633	6333434	1025	ESSFmc	0539	0544	10	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS41	225	83	0382765	6333592	1017	ESSFmc	0557	0602	10	1	No Precipitation	-2'	Canada Goose	60	GLM	
19-Jun-06	Schaft	SS41	225	83	0382765	6333592	1017	ESSFmc	0557	0602	10	1	No Precipitation	-2'	Canada Goose	60	GLM	
19-Jun-06	Schaft	SS41	225	83	0382765	6333592	1017	ESSFmc	0557	0602	10	1	No Precipitation	-2'	Spotted Sandpiper	40	GLM	
19-Jun-06	Schaft	SS41	225	83	0382765	6333592	1017	ESSFmc	0557	0602	10	1	No Precipitation	-2'	Winter Wren	17	GLM	
19-Jun-06	Schaft	SS41	225	83	0382765	6333592	1017	ESSFmc	0557	0602	10	1	No Precipitation	-2'	Winter Wren	23	GLM	
19-Jun-06	Schaft	SS41	225	83	0382765	6333592	1017	ESSFmc	0557	0602	10	1	No Precipitation	-2'	Hermit Thrush	27	GLM	
19-Jun-06	Schaft	SS41	225	83	0382765	6333592	1017	ESSFmc	0557	0602	10	1	No Precipitation	-2'	Yellow-rumped Warbler	8	GLM	
19-Jun-06	Schaft	SS41	225	83	0382765	6333592	1017	ESSFmc	0557	0602	10	1	No Precipitation	-2'	Wilson's Warbler	1	GLM	
19-Jun-06	Schaft	SS41	225	83	0382765	6333592	1017	ESSFmc	0557	0602	10	1	No Precipitation	-2'	Townsend's Warbler	32	GLM	
19-Jun-06	Schaft	SS41	225	83	0382765	6333592	1017	ESSFmc	0557	0602	10	1	No Precipitation	-2'	Dark-eyed Junco	2	GLM	
19-Jun-06	Schaft	SS41	225	83	0382765	6333592	1017	ESSFmc	0557	0602	10	1	No Precipitation	-2'	Pine Siskin	2	GLM	

¹ Beaufort Scale: 0 to 1 - calm, smoke rises vertically; 1 to 3 - light air, direction of wind shown by smoke drift, but not by wind vanes.

² GLM = Guy L. Monty

(continued)

Appendix 7
Variable Radius Point Count (VRPC) Data for the Schaft Creek Study Area, 2006 (continued)

Date:	Project:	Poly Id:	WP #	NAD	UTM (E)	UTM (N)	Elevation	BEC Label	Start:	End:	Cloud %:	Wind (bf.) ¹ :	Precip:	Temp. C:	Species:	Distance	Obs ² :	Comments:
19-Jun-06	Schaft	SS41	225	83	0382765	6333592	1017	ESSFmc	0557	0602	10	1	No Precipitation	-2'	Pine Siskin	2	GLM	
19-Jun-06	Schaft	SS42	227	83	0382841	6333777	1016	ESSFmc	0645	0650	15	1	No Precipitation	-2'	Spotted Sandpiper	35	GLM	
19-Jun-06	Schaft	SS42	227	83	0382841	6333777	1016	ESSFmc	0645	0650	15	1	No Precipitation	-2'	Yellow-bellied Flycatcher	67	GLM	
19-Jun-06	Schaft	SS42	227	83	0382841	6333777	1016	ESSFmc	0645	0650	15	1	No Precipitation	-2'	Winter Wren	2	GLM	
19-Jun-06	Schaft	SS42	227	83	0382841	6333777	1016	ESSFmc	0645	0650	15	1	No Precipitation	-2'	Winter Wren	18	GLM	
19-Jun-06	Schaft	SS42	227	83	0382841	6333777	1016	ESSFmc	0645	0650	15	1	No Precipitation	-2'	Winter Wren	27	GLM	
19-Jun-06	Schaft	SS42	227	83	0382841	6333777	1016	ESSFmc	0645	0650	15	1	No Precipitation	-2'	Wilson's Warbler	17	GLM	
19-Jun-06	Schaft	SS42	227	83	0382841	6333777	1016	ESSFmc	0645	0650	15	1	No Precipitation	-2'	MacGillivray's Warbler	52	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Ruby-crowned Kinglet	11	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Ruby-crowned Kinglet	26	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Hermit Thrush	25	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Orange-crowned Warbler	5	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Orange-crowned Warbler	29	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Yellow Warbler	28	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Townsend's Warbler	37	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Townsend's Warbler	55	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	MacGillivray's Warbler	18	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS43	228	83	0382929	6333955	1016	ESSFmc	0710	0715	15	1	No Precipitation	-2'	Pine Siskin	10	GLM	
19-Jun-06	Schaft	SS44	229	83	0382890	6334152	978	ESSFmc	0745	0750	10	1	No Precipitation	0'	Winter Wren	6	GLM	
19-Jun-06	Schaft	SS44	229	83	0382890	6334152	978	ESSFmc	0745	0750	10	1	No Precipitation	0'	Winter Wren	22	GLM	
19-Jun-06	Schaft	SS44	229	83	0382890	6334152	978	ESSFmc	0745	0750	10	1	No Precipitation	0'	Winter Wren	50	GLM	
19-Jun-06	Schaft	SS44	229	83	0382890	6334152	978	ESSFmc	0745	0750	10	1	No Precipitation	0'	Ruby-crowned Kinglet	28	GLM	
19-Jun-06	Schaft	SS44	229	83	0382890	6334152	978	ESSFmc	0745	0750	10	1	No Precipitation	0'	Townsend's Warbler	36	GLM	
19-Jun-06	Schaft	SS44	229	83	0382890	6334152	978	ESSFmc	0745	0750	10	1	No Precipitation	0'	Pine Siskin	25	GLM	
20-Jun-06	Schaft	SS45	231	83	0384372	6346862	764	ESSFmc	0510	0515	100	1	No Precipitation	6'	Ruffed Grouse	20	GLM	
20-Jun-06	Schaft	SS45	231	83	0384372	6346862	764	ESSFmc	0510	0515	100	1	No Precipitation	6'	Warbling Vireo	6	GLM	
20-Jun-06	Schaft	SS45	231	83	0384372	6346862	764	ESSFmc	0510	0515	100	1	No Precipitation	6'	Swainson's Thrush	45	GLM	
20-Jun-06	Schaft	SS45	231	83	0384372	6346862	764	ESSFmc	0510	0515	100	1	No Precipitation	6'	Yellow Warbler	21	GLM	
20-Jun-06	Schaft	SS45	231	83	0384372	6346862	764	ESSFmc	0510	0515	100	1	No Precipitation	6'	Yellow Warbler	30	GLM	
20-Jun-06	Schaft	SS45	231	83	0384372	6346862	764	ESSFmc	0510	0515	100	1	No Precipitation	6'	Yellow Warbler	31	GLM	

¹ Beaufort Scale: 0 to 1 - calm, smoke rises vertically; 1 to 3 - light air, direction of wind shown by smoke drift, but not by wind vanes.

² GLM = Guy L. Monty

Appendix 7
Variable Radius Point Count (VRPC) Data for the Schaft Creek Study Area, 2006 (continued)

Date:	Project:	Poly Id:	WP #	NAD	UTM (E)	UTM (N)	Elevation	BEC Label	Start:	End:	Cloud %:	Wind (bf.) ¹ :	Precip:	Temp. C:	Species:	Distance	Obs ² :	Comments:
20-Jun-06	Schaft	SS45	231	83	0384372	6346862	764	ESSFmc	0510	0515	100	1	No Precipitation	6'	Wilson's Warbler	24	GLM	
20-Jun-06	Schaft	SS46	232	83	0384244	6346702	772	ESSFmc	0530	0535	100	1	No Precipitation	6'	Ruffed Grouse	11	GLM	
20-Jun-06	Schaft	SS46	232	83	0384244	6346702	772	ESSFmc	0530	0535	100	1	No Precipitation	6'	Alder Flycatcher	37	GLM	
20-Jun-06	Schaft	SS46	232	83	0384244	6346702	772	ESSFmc	0530	0535	100	1	No Precipitation	6'	Swainson's Thrush	12	GLM	
20-Jun-06	Schaft	SS46	232	83	0384244	6346702	772	ESSFmc	0530	0535	100	1	No Precipitation	6'	Swainson's Thrush	40	GLM	
20-Jun-06	Schaft	SS46	232	83	0384244	6346702	772	ESSFmc	0530	0535	100	1	No Precipitation	6'	Swainson's Thrush	42	GLM	
20-Jun-06	Schaft	SS46	232	83	0384244	6346702	772	ESSFmc	0530	0535	100	1	No Precipitation	6'	American Robin	16	GLM	
20-Jun-06	Schaft	SS46	232	83	0384244	6346702	772	ESSFmc	0530	0535	100	1	No Precipitation	6'	American Robin	52	GLM	
20-Jun-06	Schaft	SS46	232	83	0384244	6346702	772	ESSFmc	0530	0535	100	1	No Precipitation	6'	Yellow Warbler	1	GLM	
20-Jun-06	Schaft	SS46	232	83	0384244	6346702	772	ESSFmc	0530	0535	100	1	No Precipitation	6'	Yellow Warbler	4	GLM	
20-Jun-06	Schaft	SS46	232	83	0384244	6346702	772	ESSFmc	0530	0535	100	1	No Precipitation	6'	Yellow Warbler	20	GLM	
20-Jun-06	Schaft	SS46	232	83	0384244	6346702	772	ESSFmc	0530	0535	100	1	No Precipitation	6'	Savannah Sparrow	16	GLM	
20-Jun-06	Schaft	SS46	232	83	0384244	6346702	772	ESSFmc	0530	0535	100	1	No Precipitation	6'	Savannah Sparrow	35	GLM	
20-Jun-06	Schaft	SS46	232	83	0384244	6346702	772	ESSFmc	0530	0535	100	1	No Precipitation	6'	Lincoln's Sparrow	65	GLM	
20-Jun-06	Schaft	SS47	233	83	0384083	6346580	777	ESSFmc	0545	0550	100	1	No Precipitation	6'	Ruffed Grouse	42	GLM	
20-Jun-06	Schaft	SS47	233	83	0384083	6346580	777	ESSFmc	0545	0550	100	1	No Precipitation	6'	Alder Flycatcher	50	GLM	
20-Jun-06	Schaft	SS47	233	83	0384083	6346580	777	ESSFmc	0545	0550	100	1	No Precipitation	6'	Swainson's Thrush	13	GLM	
20-Jun-06	Schaft	SS47	233	83	0384083	6346580	777	ESSFmc	0545	0550	100	1	No Precipitation	6'	Swainson's Thrush	18	GLM	
20-Jun-06	Schaft	SS47	233	83	0384083	6346580	777	ESSFmc	0545	0550	100	1	No Precipitation	6'	Yellow Warbler	5	GLM	
20-Jun-06	Schaft	SS47	233	83	0384083	6346580	777	ESSFmc	0545	0550	100	1	No Precipitation	6'	Yellow Warbler	19	GLM	
20-Jun-06	Schaft	SS47	233	83	0384083	6346580	777	ESSFmc	0545	0550	100	1	No Precipitation	6'	Yellow Warbler	26	GLM	
20-Jun-06	Schaft	SS47	233	83	0384083	6346580	777	ESSFmc	0545	0550	100	1	No Precipitation	6'	American Redstart	14	GLM	
20-Jun-06	Schaft	SS47	233	83	0384083	6346580	777	ESSFmc	0545	0550	100	1	No Precipitation	6'	American Redstart	60	GLM	
20-Jun-06	Schaft	SS47	233	83	0384083	6346580	777	ESSFmc	0545	0550	100	1	No Precipitation	6'	Common Yellowthroat	8	GLM	
20-Jun-06	Schaft	SS47	233	83	0384083	6346580	777	ESSFmc	0545	0550	100	1	No Precipitation	6'	Lincoln's Sparrow	50	GLM	
20-Jun-06	Schaft	SS48	234	83	0384111	6346779	769	ESSFmc	0605	0610	100	1	No Precipitation	8'	Ruffed Grouse	22	GLM	
20-Jun-06	Schaft	SS48	234	83	0384111	6346779	769	ESSFmc	0605	0610	100	1	No Precipitation	8'	Alder Flycatcher	2	GLM	
20-Jun-06	Schaft	SS48	234	83	0384111	6346779	769	ESSFmc	0605	0610	100	1	No Precipitation	8'	Alder Flycatcher	28	GLM	
20-Jun-06	Schaft	SS48	234	83	0384111	6346779	769	ESSFmc	0605	0610	100	1	No Precipitation	8'	Warbling Vireo	11	GLM	
20-Jun-06	Schaft	SS48	234	83	0384111	6346779	769	ESSFmc	0605	0610	100	1	No Precipitation	8'	American Robin	6	GLM	
20-Jun-06	Schaft	SS48	234	83	0384111	6346779	769	ESSFmc	0605	0610	100	1	No Precipitation	8'	American Robin	25	GLM	
20-Jun-06	Schaft	SS48	234	83	0384111	6346779	769	ESSFmc	0605	0610	100	1	No Precipitation	8'	Yellow Warbler	2	GLM	
20-Jun-06	Schaft	SS48	234	83	0384111	6346779	769	ESSFmc	0605	0610	100	1	No Precipitation	8'	Yellow Warbler	28	GLM	
20-Jun-06	Schaft	SS48	234	83	0384111	6346779	769	ESSFmc	0605	0610	100	1	No Precipitation	8'	Common Yellowthroat	30	GLM	
20-Jun-06	Schaft	SS48	234	83	0384111	6346779	769	ESSFmc	0605	0610	100	1	No Precipitation	8'	Wilson's Warbler	56	GLM	
20-Jun-06	Schaft	SS48	234	83	0384111	6346779	769	ESSFmc	0605	0610	100	1	No Precipitation	8'	Savannah Sparrow	4	GLM	
20-Jun-06	Schaft	SS48	234	83	0384111	6346779	769	ESSFmc	0605	0610	100	1	No Precipitation	8'	Lincoln's Sparrow	22	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Alder Flycatcher	25	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Alder Flycatcher	38	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Warbling Vireo	22	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Cedar Waxwing	19	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Cedar Waxwing	19	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Cedar Waxwing	19	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Cedar Waxwing	19	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Yellow Warbler	12	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Yellow Warbler	18	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Yellow Warbler	23	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Yellow Warbler	23	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Yellow Warbler	25	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Lincoln's Sparrow	12	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Pine Siskin	30	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Pine Siskin	30	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Pine Siskin	30	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Pine Siskin	30	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Pine Siskin	30	GLM	
20-Jun-06	Schaft	SS49	235	83	0384181	6346977	768	ESSFmc	0622	0627	100	1	No Precipitation	8'	Pine Siskin	30	GLM	
20-Jun-06	Schaft	SS50	236	83	0384235	6347173	768	ESSFmc	0647	0652	100	1	No Precipitation	8'	Canada Goose	45	GLM	

¹ Beaufort Scale: 0 to 1 - calm, smoke rises vertically; 1 to 3 - light air, direction of wind shown by smoke drift, but not by wind vanes.

² GLM = Guy L. Monty

Appendix 7
Variable Radius Point Count (VRPC) Data for the Schaft Creek Study Area, 2006 (continued)

Date:	Project:	Poly Id:	WP #	NAD	UTM (E)	UTM (N)	Elevation	BEC Label	Start:	End:	Cloud %:	Wind (bf.) ¹ :	Precip:	Temp. C:	Species:	Distance	Obs: ²	Comments:
20-Jun-06	Schaft	SS50	236	83	0384235	6347173	768	ESSFmc	0647	0652	100	1	No Precipitation	8'	Alder Flycatcher	26	GLM	
20-Jun-06	Schaft	SS50	236	83	0384235	6347173	768	ESSFmc	0647	0652	100	1	No Precipitation	8'	Alder Flycatcher	40	GLM	
20-Jun-06	Schaft	SS50	236	83	0384235	6347173	768	ESSFmc	0647	0652	100	1	No Precipitation	8'	Black-capped Chickadee	5	GLM	
20-Jun-06	Schaft	SS50	236	83	0384235	6347173	768	ESSFmc	0647	0652	100	1	No Precipitation	8'	Swainson's Thrush	21	GLM	
20-Jun-06	Schaft	SS50	236	83	0384235	6347173	768	ESSFmc	0647	0652	100	1	No Precipitation	8'	American Robin	55	GLM	
20-Jun-06	Schaft	SS50	236	83	0384235	6347173	768	ESSFmc	0647	0652	100	1	No Precipitation	8'	Yellow Warbler	2	GLM	
20-Jun-06	Schaft	SS50	236	83	0384235	6347173	768	ESSFmc	0647	0652	100	1	No Precipitation	8'	Yellow Warbler	7	GLM	
20-Jun-06	Schaft	SS50	236	83	0384235	6347173	768	ESSFmc	0647	0652	100	1	No Precipitation	8'	Yellow Warbler	29	GLM	
20-Jun-06	Schaft	SS50	236	83	0384235	6347173	768	ESSFmc	0647	0652	100	1	No Precipitation	8'	Orange-crowned Warbler	4	GLM	
20-Jun-06	Schaft	SS50	236	83	0384235	6347173	768	ESSFmc	0647	0652	100	1	No Precipitation	8'	American Redstart	3	GLM	
20-Jun-06	Schaft	SS50	236	83	0384235	6347173	768	ESSFmc	0647	0652	100	1	No Precipitation	8'	Common Yellowthroat	5	GLM	
20-Jun-06	Schaft	SS50	236	83	0384235	6347173	768	ESSFmc	0647	0652	100	1	No Precipitation	8'	Song Sparrow	11	GLM	
20-Jun-06	Schaft	SS50	236	83	0384235	6347173	768	ESSFmc	0647	0652	100	1	No Precipitation	8'	Lincoln's Sparrow	24	GLM	
20-Jun-06	Schaft	SS51	237	83	0384123	6347337	764	ESSFmc	0740	0745	65	1	No Precipitation	9'	Alder Flycatcher	22	GLM	
20-Jun-06	Schaft	SS51	237	83	0384123	6347337	764	ESSFmc	0740	0745	65	1	No Precipitation	9'	Alder Flycatcher	28	GLM	
20-Jun-06	Schaft	SS51	237	83	0384123	6347337	764	ESSFmc	0740	0745	65	1	No Precipitation	9'	Alder Flycatcher	36	GLM	
20-Jun-06	Schaft	SS51	237	83	0384123	6347337	764	ESSFmc	0740	0745	65	1	No Precipitation	9'	Warbling Vireo	21	GLM	
20-Jun-06	Schaft	SS51	237	83	0384123	6347337	764	ESSFmc	0740	0745	65	1	No Precipitation	9'	Swainson's Thrush	15	GLM	
20-Jun-06	Schaft	SS51	237	83	0384123	6347337	764	ESSFmc	0740	0745	65	1	No Precipitation	9'	Swainson's Thrush	20	GLM	
20-Jun-06	Schaft	SS51	237	83	0384123	6347337	764	ESSFmc	0740	0745	65	1	No Precipitation	9'	Swainson's Thrush	23	GLM	
20-Jun-06	Schaft	SS51	237	83	0384123	6347337	764	ESSFmc	0740	0745	65	1	No Precipitation	9'	Yellow Warbler	14	GLM	
20-Jun-06	Schaft	SS51	237	83	0384123	6347337	764	ESSFmc	0740	0745	65	1	No Precipitation	9'	Yellow Warbler	26	GLM	
20-Jun-06	Schaft	SS51	237	83	0384123	6347337	764	ESSFmc	0740	0745	65	1	No Precipitation	9'	Wilson's Warbler	35	GLM	
20-Jun-06	Schaft	SS51	237	83	0384123	6347337	764	ESSFmc	0740	0745	65	1	No Precipitation	9'	Savannah Sparrow	40	GLM	
20-Jun-06	Schaft	SS52	238	83	0384015	6347507	763	ESSFmc	0805	0810	65	1	No Precipitation	9'	Alder Flycatcher	32	GLM	
20-Jun-06	Schaft	SS52	238	83	0384015	6347507	763	ESSFmc	0805	0810	65	1	No Precipitation	9'	Alder Flycatcher	40	GLM	
20-Jun-06	Schaft	SS52	238	83	0384015	6347507	763	ESSFmc	0805	0810	65	1	No Precipitation	9'	Common Raven	30	GLM	
20-Jun-06	Schaft	SS52	238	83	0384015	6347507	763	ESSFmc	0805	0810	65	1	No Precipitation	9'	Swainson's Thrush	23	GLM	
20-Jun-06	Schaft	SS52	238	83	0384015	6347507	763	ESSFmc	0805	0810	65	1	No Precipitation	9'	Cedar Waxwing	5	GLM	
20-Jun-06	Schaft	SS52	238	83	0384015	6347507	763	ESSFmc	0805	0810	65	1	No Precipitation	9'	Cedar Waxwing	5	GLM	
20-Jun-06	Schaft	SS52	238	83	0384015	6347507	763	ESSFmc	0805	0810	65	1	No Precipitation	9'	Yellow Warbler	2	GLM	
20-Jun-06	Schaft	SS52	238	83	0384015	6347507	763	ESSFmc	0805	0810	65	1	No Precipitation	9'	Yellow Warbler	4	GLM	
20-Jun-06	Schaft	SS52	238	83	0384015	6347507	763	ESSFmc	0805	0810	65	1	No Precipitation	9'	Yellow Warbler	17	GLM	
20-Jun-06	Schaft	SS52	238	83	0384015	6347507	763	ESSFmc	0805	0810	65	1	No Precipitation	9'	Common Yellowthroat	10	GLM	
20-Jun-06	Schaft	SS52	238	83	0384015	6347507	763	ESSFmc	0805	0810	65	1	No Precipitation	9'	Savannah Sparrow	18	GLM	
20-Jun-06	Schaft	SS52	238	83	0384015	6347507	763	ESSFmc	0805	0810	65	1	No Precipitation	9'	Lincoln's Sparrow	23	GLM	
20-Jun-06	Schaft	SS53	239	83	0383946	6347697	760	ESSFmc	0818	0823	65	1	No Precipitation	9'	Alder Flycatcher	18	GLM	
20-Jun-06	Schaft	SS53	239	83	0383946	6347697	760	ESSFmc	0818	0823	65	1	No Precipitation	9'	Alder Flycatcher	32	GLM	
20-Jun-06	Schaft	SS53	239	83	0383946	6347697	760	ESSFmc	0818	0823	65	1	No Precipitation	9'	Alder Flycatcher	37	GLM	
20-Jun-06	Schaft	SS53	239	83	0383946	6347697	760	ESSFmc	0818	0823	65	1	No Precipitation	9'	Swainson's Thrush	16	GLM	
20-Jun-06	Schaft	SS53	239	83	0383946	6347697	760	ESSFmc	0818	0823	65	1	No Precipitation	9'	Cedar Waxwing	11	GLM	
20-Jun-06	Schaft	SS53	239	83	0383946	6347697	760	ESSFmc	0818	0823	65	1	No Precipitation	9'	Cedar Waxwing	11	GLM	Adult soaring to the Northwest.
20-Jun-06	Schaft	SS53	239	83	0383946	6347697	760	ESSFmc	0818	0823	65	1	No Precipitation	9'	Yellow Warbler	15	GLM	
20-Jun-06	Schaft	SS53	239	83	0383946	6347697	760	ESSFmc	0818	0823	65	1	No Precipitation	9'	Yellow Warbler	21	GLM	
20-Jun-06	Schaft	SS53	239	83	0383946	6347697	760	ESSFmc	0818	0823	65	1	No Precipitation	9'	Yellow Warbler	46	GLM	
20-Jun-06	Schaft	SS53	239	83	0383946	6347697	760	ESSFmc	0818	0823	65	1	No Precipitation	9'	American Redstart	17	GLM	
20-Jun-06	Schaft	SS53	239	83	0383946	6347697	760	ESSFmc	0818	0823	65	1	No Precipitation	9'	Savannah Sparrow	26	GLM	
20-Jun-06	Schaft	SS53	239	83	0383946	6347697	760	ESSFmc	0818	0823	65	1	No Precipitation	9'	Lincoln's Sparrow	19	GLM	
20-Jun-06	Schaft	SS53	239	83	0383946	6347697	760	ESSFmc	0818	0823	65	1	No Precipitation	9'	Pine Siskin	46	GLM	
20-Jun-06	Schaft	SS53	239	83	0383946	6347697	760	ESSFmc	0818	0823	65	1	No Precipitation	9'	Pine Siskin	46	GLM	
20-Jun-06	Schaft	SS53	239	83	0383946	6347697	760	ESSFmc	0818	0823	65	1	No Precipitation	9'	Pine Siskin	46	GLM	
20-Jun-06	Schaft	SS54	240	83	0383885	6347887	760	ESSFmc	0838	0843	45	2	No Precipitation	10'	Alder Flycatcher	26	GLM	
20-Jun-06	Schaft	SS54	240	83	0383885	6347887	760	ESSFmc	0838	0843	45	2	No Precipitation	10'	Alder Flycatcher	60	GLM	
20-Jun-06	Schaft	SS54	240	83	0383885	6347887	760	ESSFmc	0838	0843	45	2	No Precipitation	10'	Yellow Warbler	8	GLM	
20-Jun-06	Schaft	SS54	240	83	0383885	6347887	760	ESSFmc	0838	0843	45	2	No Precipitation	10'	Yellow Warbler	15	GLM	
20-Jun-06	Schaft	SS54	240	83	0383885	6347887	760	ESSFmc	0838	0843	45	2	No Precipitation	10'	American Redstart	5	GLM	
20-Jun-06	Schaft	SS54	240	83	0383885	6347887	760	ESSFmc	0838	0843	45	2	No Precipitation	10'	Song Sparrow	3	GLM	
20-Jun-06	Schaft	SS54	240	83	0383885	6347887	760	ESSFmc	0838	0843	45	2	No Precipitation	10'	Lincoln's Sparrow	56	GLM	
20-Jun-06	Schaft	SS55	241	83	0383872	6348085	760	ESSFmc	0855	0900	45	2	No Precipitation	10'	Canada Goose	62	GLM	

¹ Beaufort Scale: 0 to 1 - calm, smoke rises vertically; 1 to 3 - light air, direction of wind shown by smoke drift, but not by wind vanes.

² GLM = Guy L. Monty

Appendix 7
Variable Radius Point Count (VRPC) Data for the Schaft Creek Study Area, 2006 (continued)

Date:	Project:	Poly Id:	WP #	NAD	UTM (E)	UTM (N)	Elevation	BEC Label	Start:	End:	Cloud %:	Wind (bf.) ¹ :	Precip:	Temp. C:	Species:	Distance	Obs: ²	Comments:
20-Jun-06	Schaft	SS55	241	83	0383872	6348085	760	ESSFmc	0855	0900	45	2	No Precipitation	10'	Spotted Sandpiper	2	GLM	
20-Jun-06	Schaft	SS55	241	83	0383872	6348085	760	ESSFmc	0855	0900	45	2	No Precipitation	10'	Spotted Sandpiper	12	GLM	
20-Jun-06	Schaft	SS55	241	83	0383872	6348085	760	ESSFmc	0855	0900	45	2	No Precipitation	10'	Bohemian Waxwing	29	GLM	
20-Jun-06	Schaft	SS55	241	83	0383872	6348085	760	ESSFmc	0855	0900	45	2	No Precipitation	10'	Yellow Warbler	6	GLM	
20-Jun-06	Schaft	SS55	241	83	0383872	6348085	760	ESSFmc	0855	0900	45	2	No Precipitation	10'	Yellow Warbler	15	GLM	
20-Jun-06	Schaft	SS55	241	83	0383872	6348085	760	ESSFmc	0855	0900	45	2	No Precipitation	10'	Common Yellowthroat	23	GLM	
20-Jun-06	Schaft	SS55	241	83	0383872	6348085	760	ESSFmc	0855	0900	45	2	No Precipitation	10'	Common Yellowthroat	26	GLM	
20-Jun-06	Schaft	SS55	241	83	0383872	6348085	760	ESSFmc	0855	0900	45	2	No Precipitation	10'	Wilson's Warbler	18	GLM	
20-Jun-06	Schaft	SS55	241	83	0383872	6348085	760	ESSFmc	0855	0900	45	2	No Precipitation	10'	White-winged Crossbill	21	GLM	
20-Jun-06	Schaft	SS55	241	83	0383872	6348085	760	ESSFmc	0855	0900	45	2	No Precipitation	10'	White-winged Crossbill	21	GLM	
20-Jun-06	Schaft	SS55	241	83	0383872	6348085	760	ESSFmc	0855	0900	45	2	No Precipitation	10'	White-winged Crossbill	21	GLM	
20-Jun-06	Schaft	SS55	241	83	0383872	6348085	760	ESSFmc	0855	0900	45	2	No Precipitation	10'	White-winged Crossbill	21	GLM	
20-Jun-06	Schaft	SS55	241	83	0383872	6348085	760	ESSFmc	0855	0900	45	2	No Precipitation	10'	White-winged Crossbill	21	GLM	
20-Jun-06	Schaft	SS55	241	83	0383872	6348085	760	ESSFmc	0855	0900	45	2	No Precipitation	10'	White-winged Crossbill	21	GLM	
21-Jun-06	Schaft	SS56	242	83	0388315	6344798	1786	BAFAunp	0515	0520	80	2	No Precipitation	0'	None	N/A	GLM	
21-Jun-06	Schaft	SS57	243	83	0388281	6344597	1757	BAFAunp	0545	0550	80	2	No Precipitation	0'	None	N/A	GLM	
21-Jun-06	Schaft	SS58	244	83	0388210	6344396	1672	BAFAunp	0605	0610	80	2	No Precipitation	0'	Horned Lark	60	GLM	
21-Jun-06	Schaft	SS58	244	83	0388210	6344396	1672	BAFAunp	0605	0610	80	2	No Precipitation	0'	American Pipit	45	GLM	
21-Jun-06	Schaft	SS59	245	83	0388000	6344385	1624	BAFAunp	0620	0625	80	2	No Precipitation	0'	Horned Lark	90	GLM	
21-Jun-06	Schaft	SS59	245	83	0388000	6344385	1624	BAFAunp	0620	0625	80	2	No Precipitation	0'	American Pipit	50	GLM	
21-Jun-06	Schaft	SS59	245	83	0388000	6344385	1624	BAFAunp	0620	0625	80	2	No Precipitation	0'	American Pipit	80	GLM	
21-Jun-06	Schaft	SS60	246	83	0387801	6344368	1581	BAFAunp	0635	0640	80	2	No Precipitation	0'	Horned Lark	7	GLM	
21-Jun-06	Schaft	SS60	246	83	0387801	6344368	1581	BAFAunp	0635	0640	80	2	No Precipitation	0'	Horned Lark	55	GLM	
21-Jun-06	Schaft	SS60	246	83	0387801	6344368	1581	BAFAunp	0635	0640	80	2	No Precipitation	0'	Horned Lark	60	GLM	
21-Jun-06	Schaft	SS60	246	83	0387801	6344368	1581	BAFAunp	0635	0640	80	2	No Precipitation	0'	American Pipit	80	GLM	
21-Jun-06	Schaft	SS60	246	83	0387801	6344368	1581	BAFAunp	0635	0640	80	2	No Precipitation	0'	Golden-crowned Sparrow	70	GLM	
21-Jun-06	Schaft	SS61	247	83	0387619	6344292	1537	BAFAunp	0650	0655	80	2	No Precipitation	0'	Horned Lark	12	GLM	
21-Jun-06	Schaft	SS61	247	83	0387619	6344292	1537	BAFAunp	0650	0655	80	2	No Precipitation	0'	Horned Lark	32	GLM	
21-Jun-06	Schaft	SS61	247	83	0387619	6344292	1537	BAFAunp	0650	0655	80	2	No Precipitation	0'	Horned Lark	50	GLM	
21-Jun-06	Schaft	SS61	247	83	0387619	6344292	1537	BAFAunp	0650	0655	80	2	No Precipitation	0'	American Pipit	18	GLM	
21-Jun-06	Schaft	SS61	247	83	0387619	6344292	1537	BAFAunp	0650	0655	80	2	No Precipitation	0'	American Pipit	26	GLM	
21-Jun-06	Schaft	SS61	247	83	0387619	6344292	1537	BAFAunp	0650	0655	80	2	No Precipitation	0'	Golden-crowned Sparrow	23	GLM	
21-Jun-06	Schaft	SS62	248	83	0387495	6344133	1531	BAFAunp	0705	0710	100	2	No Precipitation	2'	Horned Lark	12	GLM	
21-Jun-06	Schaft	SS62	248	83	0387495	6344133	1531	BAFAunp	0705	0710	100	2	No Precipitation	2'	Horned Lark	43	GLM	
21-Jun-06	Schaft	SS62	248	83	0387495	6344133	1531	BAFAunp	0705	0710	100	2	No Precipitation	2'	American Pipit	20	GLM	
21-Jun-06	Schaft	SS62	248	83	0387495	6344133	1531	BAFAunp	0705	0710	100	2	No Precipitation	2'	American Pipit	35	GLM	
21-Jun-06	Schaft	SS63	249	83	0387271	6344092	1541	BAFAunp	0720	0725	100	2	No Precipitation	2'	Horned Lark	52	GLM	
21-Jun-06	Schaft	SS63	249	83	0387271	6344092	1541	BAFAunp	0720	0725	100	2	No Precipitation	2'	American Pipit	5	GLM	
21-Jun-06	Schaft	SS63	249	83	0387271	6344092	1541	BAFAunp	0720	0725	100	2	No Precipitation	2'	American Pipit	16	GLM	
21-Jun-06	Schaft	SS63	249	83	0387271	6344092	1541	BAFAunp	0720	0725	100	2	No Precipitation	2'	American Pipit	17	GLM	
21-Jun-06	Schaft	SS63	249	83	0387271	6344092	1541	BAFAunp	0720	0725	100	2	No Precipitation	2'	Savannah Sparrow	2	GLM	
21-Jun-06	Schaft	SS63	249	83	0387271	6344092	1541	BAFAunp	0720	0725	100	2	No Precipitation	2'	Savannah Sparrow	37	GLM	
21-Jun-06	Schaft	SS63	249	83	0387271	6344092	1541	BAFAunp	0720	0725	100	2	No Precipitation	2'	Golden-crowned Sparrow	30	GLM	
21-Jun-06	Schaft	SS64	250	83	0387381	6344268	1538	BAFAunp	0733	0738	100	2	No Precipitation	2'	Horned Lark	23	GLM	
21-Jun-06	Schaft	SS64	250	83	0387381	6344268	1538	BAFAunp	0733	0738	100	2	No Precipitation	2'	Horned Lark	40	GLM	Nest.
21-Jun-06	Schaft	SS64	250	83	0387381	6344268	1538	BAFAunp	0733	0738	100	2	No Precipitation	2'	American Pipit	80	GLM	Nest.
21-Jun-06	Schaft	SS64	250	83	0387381	6344268	1538	BAFAunp	0733	0738	100	2	No Precipitation	2'	Savannah Sparrow	5	GLM	
21-Jun-06	Schaft	SS64	250	83	0387381	6344268	1538	BAFAunp	0733	0738	100	2	No Precipitation	2'	Savannah Sparrow	6	GLM	
21-Jun-06	Schaft	SS64	250	83	0387381	6344268	1538	BAFAunp	0733	0738	100	2	No Precipitation	2'	Savannah Sparrow	27	GLM	
21-Jun-06	Schaft	SS64	250	83	0387381	6344268	1538	BAFAunp	0733	0738	100	2	No Precipitation	2'	Golden-crowned Sparrow	50	GLM	
21-Jun-06	Schaft	SS65	251	83	0387471	6344445	1540	BAFAunp	0745	0750	100	2	No Precipitation	2'	American Pipit	22	GLM	
21-Jun-06	Schaft	SS65	251	83	0387471	6344445	1540	BAFAunp	0745	0750	100	2	No Precipitation	2'	Savannah Sparrow	30	GLM	
21-Jun-06	Schaft	SS65	251	83	0387471	6344445	1540	BAFAunp	0745	0750	100	2	No Precipitation	2'	Savannah Sparrow	41	GLM	
21-Jun-06	Schaft	SS66	252	83	0387566	6344643	1544	BAFAunp	0800	0805	100	2	No Precipitation	3'	American Pipit	6	GLM	
21-Jun-06	Schaft	SS66	252	83	0387566	6344643	1544	BAFAunp	0800	0805	100	2	No Precipitation	3'	American Pipit	7	GLM	
21-Jun-06	Schaft	SS66	252	83	0387566	6344643	1544	BAFAunp	0800	0805	100	2	No Precipitation	3'	American Pipit	24	GLM	
21-Jun-06	Schaft	SS66	252	83	0387566	6344643	1544	BAFAunp	0800	0805	100	2	No Precipitation	3'	American Pipit	35	GLM	
21-Jun-06	Schaft	SS66	252	83	0387566	6344643	1544	BAFAunp	0800	0805	100	2	No Precipitation	3'	Savannah Sparrow	21	GLM	
21-Jun-06	Schaft	SS66	252	83	0387566	6344643	1544	BAFAunp	0800	0805	100	2	No Precipitation	3'	Savannah Sparrow	30	GLM	

¹ Beaufort Scale: 0 to 1 - calm, smoke rises vertically; 1 to 3 - light air, direction of wind shown by smoke drift, but not by wind vanes.

² GLM = Guy L. Monty

Appendix 7
Variable Radius Point Count (VRPC) Data for the Schaft Creek Study Area, 2006 (completed)

Date:	Project:	Poly Id:	WP #	NAD	UTM (E)	UTM (N)	Elevation	BEC Label	Start:	End:	Cloud %:	Wind (bf.) ¹ :	Precip:	Temp. C:	Species:	Distance	Obs ² :	Comments:
21-Jun-06	Schaft	SS66	252	83	0387566	6344643	1544	BAFAunp	0800	0805	100	2	No Precipitation	3'	Golden-crowned Sparrow	10	GLM	
21-Jun-06	Schaft	SS67	253	83	0387688	6344808	1539	BAFAunp	0812	0817	100	2	No Precipitation	3'	Golden Eagle	5	GLM	
21-Jun-06	Schaft	SS67	253	83	0387688	6344808	1539	BAFAunp	0812	0817	100	2	No Precipitation	3'	Semipalmated Plover	28	GLM	
21-Jun-06	Schaft	SS67	253	83	0387688	6344808	1539	BAFAunp	0812	0817	100	2	No Precipitation	3'	Horned Lark	24	GLM	
21-Jun-06	Schaft	SS67	253	83	0387688	6344808	1539	BAFAunp	0812	0817	100	2	No Precipitation	3'	Horned Lark	25	GLM	
21-Jun-06	Schaft	SS67	253	83	0387688	6344808	1539	BAFAunp	0812	0817	100	2	No Precipitation	3'	American Pipit	27	GLM	
21-Jun-06	Schaft	SS67	253	83	0387688	6344808	1539	BAFAunp	0812	0817	100	2	No Precipitation	3'	American Pipit	40	GLM	
21-Jun-06	Schaft	SS67	253	83	0387688	6344808	1539	BAFAunp	0812	0817	100	2	No Precipitation	3'	Savannah Sparrow	16	GLM	
21-Jun-06	Schaft	SS67	253	83	0387688	6344808	1539	BAFAunp	0812	0817	100	2	No Precipitation	3'	Pine Siskin	30	GLM	
21-Jun-06	Schaft	SS67	253	83	0387688	6344808	1539	BAFAunp	0812	0817	100	2	No Precipitation	3'	Pine Siskin	30	GLM	
21-Jun-06	Schaft	SS67	253	83	0387688	6344808	1539	BAFAunp	0812	0817	100	2	No Precipitation	3'	Pine Siskin	30	GLM	
21-Jun-06	Schaft	SS67	253	83	0387688	6344808	1539	BAFAunp	0812	0817	100	2	No Precipitation	3'	Pine Siskin	30	GLM	
21-Jun-06	Schaft	SS68	254	83	0387767	6344995	1544	BAFAunp	0823	0828	100	2	No Precipitation	3'	Semipalmated Plover	48	GLM	
21-Jun-06	Schaft	SS68	254	83	0387767	6344995	1544	BAFAunp	0823	0828	100	2	No Precipitation	3'	Semipalmated Plover	53	GLM	
21-Jun-06	Schaft	SS68	254	83	0387767	6344995	1544	BAFAunp	0823	0828	100	2	No Precipitation	3'	Horned Lark	29	GLM	
21-Jun-06	Schaft	SS68	254	83	0387767	6344995	1544	BAFAunp	0823	0828	100	2	No Precipitation	3'	American Pipit	21	GLM	
21-Jun-06	Schaft	SS68	254	83	0387767	6344995	1544	BAFAunp	0823	0828	100	2	No Precipitation	3'	American Pipit	25	GLM	
21-Jun-06	Schaft	SS68	254	83	0387767	6344995	1544	BAFAunp	0823	0828	100	2	No Precipitation	3'	American Pipit	60	GLM	
21-Jun-06	Schaft	SS68	254	83	0387767	6344995	1544	BAFAunp	0823	0828	100	2	No Precipitation	3'	Savannah Sparrow	18	GLM	
21-Jun-06	Schaft	SS68	254	83	0387767	6344995	1544	BAFAunp	0823	0828	100	2	No Precipitation	3'	Savannah Sparrow	21	GLM	
21-Jun-06	Schaft	SS69	255	83	0387827	6345245	1538	BAFAunp	0840	0845	100	2	No Precipitation	3'	Willow Ptarmagin	88	GLM	
21-Jun-06	Schaft	SS69	255	83	0387827	6345245	1538	BAFAunp	0840	0845	100	2	No Precipitation	3'	Horned Lark	16	GLM	
21-Jun-06	Schaft	SS69	255	83	0387827	6345245	1538	BAFAunp	0840	0845	100	2	No Precipitation	3'	American Pipit	6	GLM	
21-Jun-06	Schaft	SS69	255	83	0387827	6345245	1538	BAFAunp	0840	0845	100	2	No Precipitation	3'	American Pipit	21	GLM	
21-Jun-06	Schaft	SS69	255	83	0387827	6345245	1538	BAFAunp	0840	0845	100	2	No Precipitation	3'	American Pipit	37	GLM	
21-Jun-06	Schaft	SS69	255	83	0387827	6345245	1538	BAFAunp	0840	0845	100	2	No Precipitation	3'	Savannah Sparrow	40	GLM	
21-Jun-06	Schaft	SS69	255	83	0387827	6345245	1538	BAFAunp	0840	0845	100	2	No Precipitation	3'	Golden-crowned Sparrow	23	GLM	
21-Jun-06	Schaft	SS70	256	83	0387384	6345482	1520	BAFAunp	0855	0900	80	2	Heavy Snow	2'	Horned Lark	25	GLM	
21-Jun-06	Schaft	SS70	256	83	0387384	6345482	1520	BAFAunp	0855	0900	80	2	Heavy Snow	2'	American Pipit	10	GLM	
21-Jun-06	Schaft	SS70	256	83	0387384	6345482	1520	BAFAunp	0855	0900	80	2	Heavy Snow	2'	American Pipit	11	GLM	
21-Jun-06	Schaft	SS70	256	83	0387384	6345482	1520	BAFAunp	0855	0900	80	2	Heavy Snow	2'	American Pipit	45	GLM	
21-Jun-06	Schaft	SS70	256	83	0387384	6345482	1520	BAFAunp	0855	0900	80	2	Heavy Snow	2'	Savannah Sparrow	37	GLM	
21-Jun-06	Schaft	SS70	256	83	0387384	6345482	1520	BAFAunp	0855	0900	80	2	Heavy Snow	2'	Pine Siskin	25	GLM	

¹ Beaufort Scale: 0 to 1 - calm, smoke rises vertically; 1 to 3 - light air, direction of wind shown by smoke drift, but not by wind vanes.

² GLM = Guy L. Monty