

# Avian Field Report — Summer 2021



## Wildlife Conservation Society Canada Northern Boreal Mountains Cumulative Effects Program



WCS Canada

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# Summary



## Context

Wildlife Conservation Society (WCS) Canada is a conservation organization that uses science to help protect wildlife and wild places and to inform better land management decisions. Yukon is a region with one of the lowest levels of human disturbance in Canada but with increasing pressures from industry. To help maintain these wild places and to have a better understanding of how human disturbance affects wildlife, WCS Canada is conducting research on the cumulative effects of mining, roads, and other disturbances throughout Yukon. An avian field survey is part of this research.



Photo credit: Malcolm Boothroyd

## Objectives

WCS Canada's Northern Boreal Mountains Cumulative Effects Program has the following primary objectives:

- Understand the cumulative effects of human disturbance and climate change stressors on wildlife and important habitat.
- Inform conservation targets to ensure they are built around ecological thresholds for sustaining healthy wildlife populations and ecosystems.

The project findings will help to inform regional land use planning, and other key decisions that will shape the future of central Yukon.

## Study species and site selection

This current study and objectives are focused on the main anthropogenic disturbance in Yukon, which is the mining industry. To better understand the cumulative impact of mining sites and roads on wildlife, songbirds were selected as a study species because they are good ecological indicators. We investigated changes to bird biodiversity in relation to disturbance types at different spatial scales. Study sites were selected from a gradient of untouched habitat to heavily disturbed habitat.



## Protocol

Field work involved conducting surveys on breeding birds and avian species at risk using point counts and acoustic recording technology with emphasis on regions near Dawson City and Mayo, YT. Point counts (PC) consisted of running one 10 minute survey per station and noting all the birds present by sounds (song and calls) and with visual detection. Autonomous Recording Units (ARU) were left at some hard to access stations for several days, which recorded bird sounds during nights and early mornings. Audio recordings will be analyzed to identify individual bird species after the field work.



# General results



65 species recorded by Point Count (see Annex I)



22 bird families



4 species at risk (see Annex I)



1,854 individuals recorded by Point Count



49 sites surveyed



162 Point counts and 150 ARU stations



5866 hours of audio recordings



10 people worked as part of the field crew



Traditional territories of Na-cho Nyäk Dun and Tr'ondëk Hwëch'in First Nations



63560 km<sup>2</sup> study area



Data shared with First Nations and other partners



Species list available on Ebird

## Future results

The next steps of the project are to analyze and summarize the data in greater detail and provide recommendations on ecological thresholds for disturbance, important bird habitat, and conservation priorities for the region. These results will then be shared with our partners.

# Key Partnerships

- Na-cho Nyäk Dun and Tr'ondëk Hwëch'in were part of the project in every step from conceptualization to site selection and field work
- First Nation citizens were trained to reproduce surveys and protocols in other areas of interest
- The Canadian Wildlife Service played an instrumental role by lending Acoustic Recording Units and sharing data to gain a larger picture of cumulative effects within Yukon



Photo credit : Malkolm Boothroyd

From left to right: Daniel Yip (postdoctoral research fellow), Evan Warren (Tr'ondëk Hwëch'in field technician), Patrice Mathieu (field technician), Chrystal Mantyka-Pringle (Conservation Planning Biologist). Special thanks also to Kadrienne Hummel, Natasha Ayoub, Alice McCulley, Malkolm Boothroyd, Dennis Nicloux and Joel Potie for their assistance in the field. All photos not marked credited to Patrice Mathieu.

WCS Canada would like to express thanks to all partners and funders that have contributed to the field work and project so far. Integration and sharing of knowledge among partners is crucial for land planning to sustain a balance between conservation and other land interests.

## Partners

- Tr'ondëk Hwëch'in
- First Nation of Na-cho Nyäk Dun
- Canadian Wildlife Service
- Yukon Environment
- University of Saskatchewan
- South Beringia Priority Place Initiative

## Funding from

- Environment and Climate Change Canada
- William and Flora Hewlett Foundation
- Yukon Fish and Wildlife Enhancement Trust
- Weston Family Foundation
- Wilburforce Foundation

# Annexes

## Annex I: Bird species recorded during Point Counts

<b>Code</b>	<b>Common Name</b>	<b>Code</b>	<b>Common Name</b>
ALFL	Alder Flycatcher	MALL	Mallard Anas
ATTW	Three-toed Woodpecker	MEGU	Mew Gull
AMKE	American Kestrel	NOFL	Northern Flicker
AMRO	American Robin	NOWA	Northern Waterthrush
ATSP	American Tree Sparrow	OCWA	Orange-crowned Warbler
BAGO	Barrow's Goldeneye	OSFL*	Olive-sided Flycatcher*
BASW*	Barn Swallow*	PIGR	Pine Grosbeak
BCCH	Black-capped Chickadee	PISI	Pine Siskin
BEKI	Belted Kingfisher	RBNU	Red-breasted Nuthatch
BOCH	Boreal Chickadee	RCKI	Ruby-crowned Kinglet
CAJA	Canada Jay	RECR	Red Crossbill
CANG	Canada Goose	RTHA	Red-tailed Hawk
CHSP	Chipping Sparrow	RUBL*	Rusty Blackbird*
CLSW	Cliff Swallow	RUGR	Ruffed Grouse
COLO	Common Loon	SASP	Savannah Sparrow
COME	Common Merganser	SPGR	Spruce Grouse
CORA	Common Raven	SPSA	Spotted Sandpiper
CORE	Common Redpoll	SWTH	Swainson's Thrush
DEJU	Dark-eyed Junco	TOWA	Townsend's Warbler
GCSP	Golden-crowned Sparrow	TRSW	Tree Swallow
GCTH	Grey-cheeked Thrush	VATH	Varied Thrush
GHOW	Great Horned Owl	VGSW	Violet-green Swallow
GRSC	Greater Scaup	WAVI	Warbling Vireo
GWTE	Green-winged Teal	WCSP	White-crowned Sparrow
HADU	Harlequin Duck	WEWP	Western Wood-pewee
HAFL	Hammond's Flycatcher	WISN	Wilson's Snipe
HETH	Hermit Thrush	WIWA	Wilson's Warbler
LEFL	Least Flycatcher	WWCR	White-Winged Crossbill
LEYE*	Lesser Yellowlegs*	YEWA	Yellow Warbler
LISP	Lincoln's Sparrow	YRWA	Yellow-rumped Warbler

\*Species at risk

