GYRFALCON SURVEY
NORTH YUKON 2014

Prepared for:

Wildlife Management Advisory Council (North Slope)

Prepared by:

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Acknowledgements

We thank Dave Mossop and Graeme Poile of Yukon College for their participation in this survey. We recognize the effort Dave Mossop has contributed over the past decades, as a government wildlife biologist and a research/ instructor at the Yukon College, in gathering initial nest site data and updating information as well as promoting the importance of gyrfalcon as a sentinel species that reflects change in the arctic. We thank Canadian Helicopters for safe flying during this survey. This project was recommended by the Wildlife Management Advisory Council– North Slope to be funded under the wildlife program budget.

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Introduction

Environment Yukon maintains a significant dataset of raptor nesting habitat and productivity for the North Slope. From the late 1970's to the early 1990's, annual nest productivity was monitored for many species of raptors. Every 5 years, a focussed survey of peregrine falcon nest productivity occurs across their range, including the North Slope.

Last surveyed in 2010, Wildlife Management Advisory Council North Slope (WMAC-NS) and Environment Yukon had an interest in describing current nesting habitat use and current productivity for North Slope raptors, particularly gyrfalcons. We surveyed cliffs along rivers that are known for their importance to nesting raptors and searched for recent raptor activity by helicopter using a standardized method.

Management Objectives

To validate the location and the status of the known gyrfalcon nest sites for the area east of the Babbage River. These data are added to the existing raptor database managed by Environment Yukon. They will be used in the evaluation of sensitive habitats and assessment of areas of high conservation values on the North Slope.

Project Description

We conducted a survey on the North Slope in order to update the status of known raptor nesting sites.

We focused the survey on gyrfalcons to the east of Ivvavik National Park. We visited known gyrfalcon nesting cliffs and specific nest sites by helicopter to determine which sites successfully produced young. We also recorded observations of other raptor species nesting along rivers to be incorporated into the database.

Participating Agencies and Personnel

Fish and Wildlife Branch, Environment Yukon

- Todd Powell, Manager of Biodiversity Section (project manager)
- Heather Milligan, Project Biologist (field coordinator, data recorder, photographer)
- Yukon Research Institute
- Dave Mossop, Professor Emeritus (flight navigator)
- Graeme Poile, STEP (Yukon College) (photographer and observer)

Project Timeframe

We conducted the survey June 23, 2014.

Funding & In-kind Support Sources

- IFA Implementation Funding – Wildlife Program Budget WMAC-NS reviewed and recommended project,
- Environment Yukon coordinated
- Yukon Research Institute
- Environment Yukon

Methods

We surveyed the Yukon North Slope region east of the Babbage River (Figure 1). We flew by helicopter along river valleys to revisit known nest site locations and search for active nests. At each gyrfalcon nest site we recorded whether the site was active, productive with nestlings, the number of nestlings, and estimated age of nestlings. When possible, we photographed nestlings to estimate the probability of detection and for increased confidence in the number of nestlings.

Results and Discussion

Gyrfalcons

We visited a total of 36 gyrfalcon nest sites, four of which were not previously described in the database maintained by Environment Yukon. Among the sites visited, 10 (28%) showed signs of recent occupation (fresh excrement or birds seen occupying the site). Eight sites (22%) successfully produced young. We observed a total of 19 gyrfalcon nestlings, with an average of 2.4 (range 1 to 4; standard deviation 1.1) young per productive breeding pair. The estimated hatch date was May 28th based on the age of nestlings. We observed that successful nests were predominantly on the western portion of our study area (Babbage River, Anker Creek, and Blow River).

The overall proportion of occupied and productive sites is lower than the average from 1974 to 1986 (occupied =72%; productive = 52%; Mossop et al. 1986). The proportion of occupied and productive sites in North Yukon was also lower than the 2014 in the Coast Mountains population in southern Yukon (47% occupied, 37% productive). The average number of young in North Yukon was slightly higher than the Coast Mountains population (1.8) (Environment Yukon unpublished data).

Although the proportion of occupied and productive nests is lower than historical records and a nearby population, multi-year surveys with more search effort are necessary to assess population trends. The gyrfalcons on the North Slope may have established new nestling sites since the surveys completed from 1970's to 1990's.

Gyrfalcon populations fluctuate among years and gyrfalcons can alternate nest sites within their territories (Booms et al. 2011). Gyrfalcons may also alternate nest sites with other raptor species. Photographs from 4 of the productive nests show that gyrfalcons occupied stick nests constructed by golden eagles (Figure 2). Gyrfalcons do not build their own nests, and often use bare cliff ledges or the abandoned nests of other birds, including golden eagles and ravens.

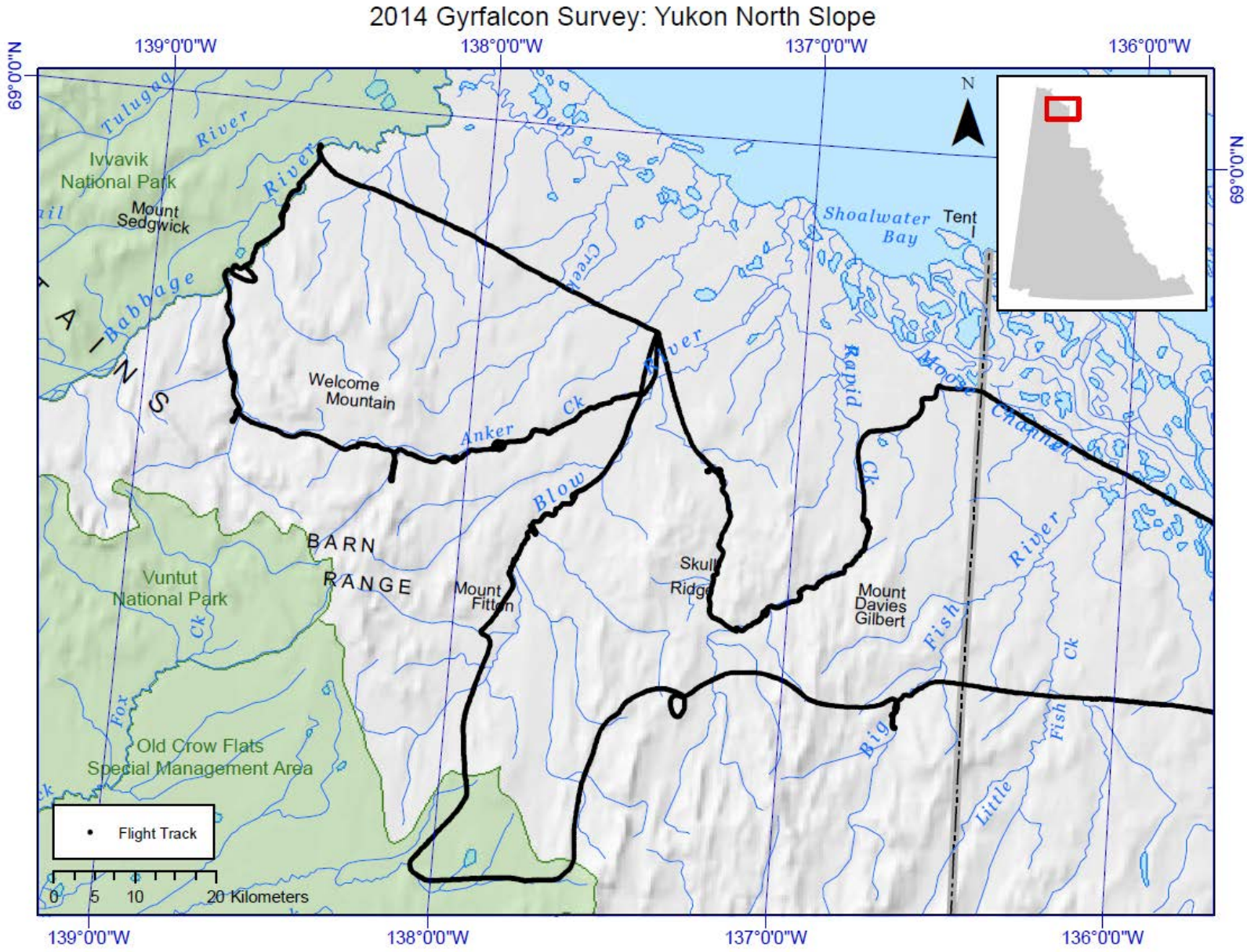

Figure 1. North Yukon 2014 gyrfalcon survey area.

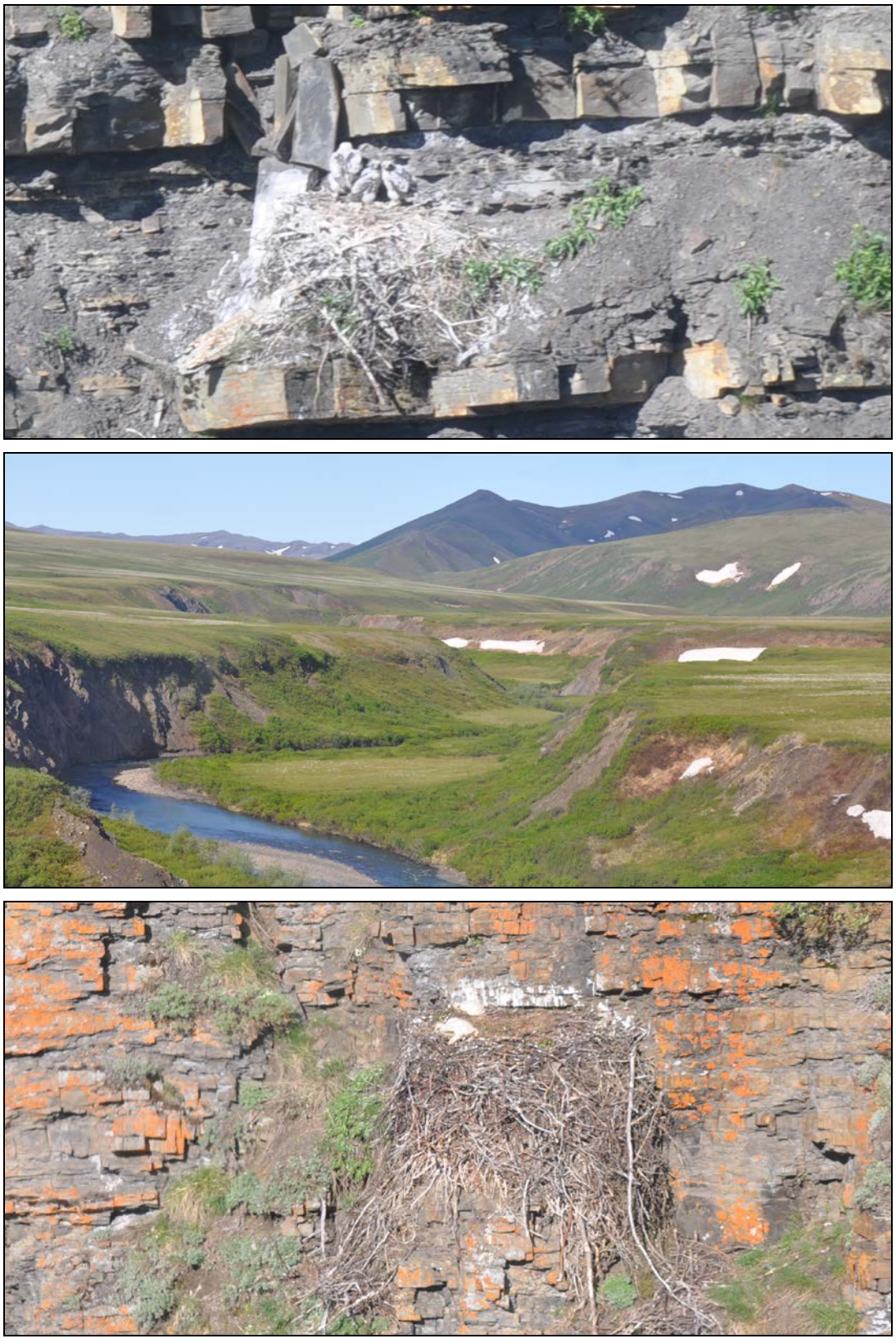

Figure 2. Top: Gyrfalcon nestlings in stick nest made by golden eagles. Middle: River valleys cliffs surveyed for raptor nests. Bottom: golden eagle nestlings **.**

Golden Eagles

We observed 3 active golden eagle nests, 2 of which successfully produced young. A total of 3 nestlings were observed, with an average of 1.5 (± 0.7 SD) young per productive breeding pair. The estimated hatch date was June 8th based on the age of nestlings. Several non-active golden eagle nests were also observed.

Both the number of young per successful breeding pair and the estimated hatch date are similar to the averages from surveys in the North Slope conducted from 1974 to 1985 (1.4 (± 0.5 SD) and June 12th, respectively; Mossop et al. 1986).

Other Raptors

We observed rough-legged hawks on two occasions, including an adult sitting on a nest. We also observed a common raven nest.

Incidental Mammal Observations

We observed 2 small groups of muskoxen in Ivvavik National Park and Northwest Territories. We also observed a lone caribou near the Babbage River and a group of approximately 200 caribou in Old Crow Special Management Area. We saw 4 grizzly bears and 2 moose.

Resource Management Implications in Inuvialuit Settlement Region

The North Yukon gyrfalcon survey updated active gyrfalcon nest sites being used to rear young.

This survey included incidental observations of nesting activity for golden eagles, rough-legged hawks and common ravens. This information will be used to support environmental assessments, species status assessments, and conservation and management planning.

This year's survey indicates that gyrfalcon nest occupancy and breeding may be lower than historical records. Multi-year surveys with additional search effort are recommended in order to assess a population trend because gyrfalcons are known to alternate nest sites and their populations fluctuate naturally among years.

Gyrfalcons are considered an indicator species for ecosystem health because they are an apex predator and year-round residents of the North Slope. Gyrfalcon populations may fluctuate with prey abundance associated with climate variability. The pattern of climate warming on the North Slope is well understood but the implications for many wildfire species are not.

Communication Products and Meetings

This work will be presented on request and at the WMAC-NS research day. The report will be filed as a technical report with Environment Yukon, with copies sent to WMAC-NS and Yukon College.

Literature Cited

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