An Inventory to Monitor Rusty Blackbirds in the Wetlands of Kluane National Park and Reserve

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ABSTRACT

The Rusty Blackbird has been designated a Species of Special Concern by the Committee on the Status of Endangered Wildlife in Canada and has shown steady population declines since the beginning of the 20st century. During May and June 2007 a study was carried out in southwest Yukon to examine the distribution and abundance of this species in Kluane National Park and Reserve. Seventy-four Rusty Blackbirds were observed, with relatively high densities found at two large wetland complexes. Twenty-nine locations supported one or more birds on territory and evidence suggesting colonial behaviour was discovered at one site. Southwest Yukon offers valuable nesting habitat for this species and we recommend that the park's population of Rusty Blackbirds be periodically monitored to determine if trends observed in other areas of North America are evident in Kluane National Park and Reserve.

INTRODUCTION

The Rusty Blackbird is found throughout the boreal forests of North America and is a common nesting species of southern Yukon wetlands (Sinclair et al. 2003). Very little is known about the ecology of this species and it has shown an accelerated population decline over the last century (Greenberg and Droege, 1999).

In April, 2006, the Rusty Blackbird (*Euphagus carolinus*) was listed as a Species of Special Concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC, 2006). Furthermore, the species was classified as a species of high responsibility for monitoring in Canada, with a recommendation that the highest need is to research trends in the North (Downes et al., 2000). Rusty Blackbirds have no protection under the Canadian Migratory Birds Convention Act, but are fully protected on their breeding grounds in several northern National Parks in Canada (COSEWIC, 2006).

Non-systematic observations by competent birders over the past several years suggested that Kluane National Park and Reserve (KNP&R) supports a healthy population of nesting Rusty Blackbirds, and that this breeding population may be particularly dense in certain types of riparian habitats.

In the spring of 2007 a study was initiated to determine the distribution and abundance of Rusty Blackbirds in Kluane National Park and Reserve. One objective for this project was to obtain abundance measures of nesting pairs in selected habitats that can be used as a benchmark to monitor changes in the Rusty Blackbird population of the park during future years. A second objective was to use survey methods that can be used to compare Rusty Blackbird densities with other northern databases (e.g., Yukon roadside surveys, and blackbird surveys from Alaska and the Northwest Territories).

METHODS

All wetlands accessible by foot or vehicle were identified and classified using topographic maps, and digital images. Wetlands were divided into two different sample units. Ponds and lakes that were small enough to walk around in order to get a complete survey of blackbirds were considered single units. Surveyors walked the perimeter of a pond or wetland, and any adjacent suitable habitat, at a rate of approximately 1.5 km/hr, recording all sightings of Rusty Blackbirds. All behavioral activity, movements and vocalizations were recorded as well as the time the first bird was sighted.

It was not possible to get a complete survey of wetlands greater than 1.5 km^2. These large wetland complexes were surveyed by walking transects through the parts of the wetland vegetated with shrubs and non-aquatic vegetation, mapping all sightings of Rusty Blackbirds. Often several transects, sometimes up to 5 km in length, were walked on different days to adequately survey these larger units. The riparian wetland adjacent to the Dezadeash River, encompassing more than 36 km^2, was still not adequately surveyed using these methods because of time and access constraints. During the middle of June the authors canoed the river in order to estimate the blackbird communities in this extensive wetland.

General habitat data were collected at all sites visited. Evidence of current or historical beaver activity, presence of freshwater emergent vegetation, flooded shrub-land, and the composition of and distance to surrounding upland forest were all recorded.

Surveys were initiated on 11 May 2007, ended on 24 June 2007, and conducted between sunrise and approximately 2 pm. Survey sites were re-visited as much as time permitted and three sites received two visits.

The Whitehorse office of the Canadian Wildlife Service has identified several species of concern and has been recording observations of these species during its spring roadside water-bird surveys. All sightings of Red-winged Blackbird (*Agelaius phoenicus*), Wilson's Snipe (*Gallinago delicata*), Lesser Yellowlegs (*Tringa flavipes)*, Sora (*Porzana carolina*) and Solitary Sandpiper (*Tringa solitaria*) were recorded during this project. All data collected were entered into and submitted to Parks Canada SARA and NatureServe Yukon databases.

RESULTS

Wetlands surveyed ranged in size from 700 m^2 to over 36 km^2. Thirty-five units small enough to survey their complete circumference were investigated. On larger sites, 28 km of transects were walked. A total of 74 Rusty Blackbirds were observed from all wetlands visited. Birds were presumed to be on territory when either both a male and a female were seen or a male was singing from a perch. Twenty-nine sites had one or more birds on territory and three sites had five or more Rusty Blackbirds present. The smallest wetland with at least one territorial male was 7200 m^2. No female blackbirds were sighted between 20 May 2007 and 24 June 2007 suggesting that this is prime incubating and nestling time for this species at this latitude.

A 20 km stretch of the Dezadeash River was canoed in the middle of June and a total of 24 Rusty Blackbirds was found. During this trip six Rusty Blackbirds were seen in a one kilometer section of a slow moving channel of the river, while at another site 10 birds were found singing and calling in a small area. None appeared to be juveniles and twice females were seen carrying food, indicating that young were big enough to be left on their own. This evidence suggests that a loose colony of blackbirds might be nesting at this second location with a smaller, loose colony at the first location. The wetlands adjacent to Flying Squirrel Creek also appear to have relatively high densities of Rusty Blackbirds. Birds on territory were found at eight different locations and another 2 pairs were found at either end of a lake 300 m to the north (Map 1 in Appendix 2).

Three sites were visited twice during the season, with a different number of birds found during each visit, suggesting some variability in this regard. At one site a male and female were seen on May 12 but no birds were found here on May 24. A second site had five Rusty

Blackbirds on June 24 but only one male a month earlier. A pond 500 m away produced one male on May 24 and no birds on June 24. This variance of within-site number of birds recorded will have to be addressed in future monitoring projects for this species. Sites will probably have to be surveyed repeatedly during the same month to establish a reliable average number of blackbirds residing at this site.

No effort was spent searching for nests during this study. One nest was found on 1 June 2007 by one of the authors (TH) while working on another research project. The nest was a grass cup hidden at the centre of a willow bush about a half a metre above standing water, and contained 6 dull turquoise eggs with brown spots. On June 20 the nest was empty with no sign of predation.

Sites with territorial birds (e.g., singing males, a male and female together, or adults carrying food) always had several habitat characteristics in common. All sites had areas of both seasonally flooded shrub-land and emergent graminoids. Standing shallow water was also common to all locations with territorial birds.

Of the five other bird species of concern and being tracked by the Canadian Wildlife Service, two were regularly found on our surveys. Wilson's Snipes were found at 22 of the sites visited and a total of 45 birds were observed. Lesser Yellowlegs were also fairly common with 29 birds found at 19 sites. Solitary Sandpipers were almost always seen singlely with 10 birds noted on nine different days. No Sora were found during this study and only one Red-Winged Blackbird was seen. Greater Yellowlegs (*Tringa melanoleuca*) are not common in Kluane and three were seen during our surveys.

DISCUSSION

Kluane National Park and Reserve seems to have a healthy population of Rusty Blackbirds. The wetlands adjacent to Flying Squirrel Creek and the Dezadeash River riparian floodplain both have relatively high densities of Rusty Blackbirds. No attempt was made to examine nesting success, juvenile survival, or availability and quality of forage. These or other parameters could all have an impact on population stability and should be considered for future research.

During this project detectability of Rusty Blackbirds in KNP&R appeared to change through the breeding season. Birds appeared to be most conspicuous between May 12 and May 20, the period of pair formation and early incubation. No females were seen between May 20 and June 24 and were presumed to be incubating eggs. After the young have hatched both parents will feed the chicks (Avery, 1995) and so may be foraging away from the nest during a survey. In-site variability was found at three sites that were visited twice and this should be considered if repeating the study. Most of our surveys (70%) were completed during the month of May and we recommend that attempts to repeat this study in future years should do so during this month.

Loose colonial behaviour in this species has been observed in Vermont, Newfoundland and Labrador but has not been reported for other parts of the breeding range (Avery, 1995). This may be due to a lack of field work on this species. In Kluane evidence suggestive of colonial behaviour was only found in the large wetland complex adjacent to the Dezadeash River. An opportunity exists in KNP&R to further explore this possibility in the intact and undisturbed wetlands of the park. Both the riparian floodplain of the Dezadeash River and the rich habitats surrounding Flying Squirrel Creek deserve further investigation.

CONCLUSION

Findings from this study add evidence that KNP&R offers important habitat for nesting Rusty Blackbirds and provides future opportunities to monitor trends in this local population, as strongly recommended by Downes et al (2000). We recommend that the park's population of this Species of Special Concern be monitored again, possibly in five years time. No blackbirds were found at sites smaller than 7000 m^2 and we recommend that future efforts should be concentrated at sites larger than this size.

Despite the limits of access, the Kluane region provides an excellent opportunity for a detailed study of the behavior and habitat requirements of this intriguing Species of Special Concern. This species is showing significant declines over much of its geographic range (Greenberg and Droege, 1999; Downes et al., 2000). Periodic monitoring the population of Rusty Blackbirds in KNP&R can provide important population trend information both for the

park and for efforts being carried out in the USA and Canada to assist this species in its recovery.

ACKNOWLEDGEMENTS

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APPENDICES

Appendix 1. The table given on the next page provides the following information for each sighting of Rusty Blackbirds made during this project: location, UTM coordinates and behaviour. All UTM coordinates were made using NAD 83 as the map datum.

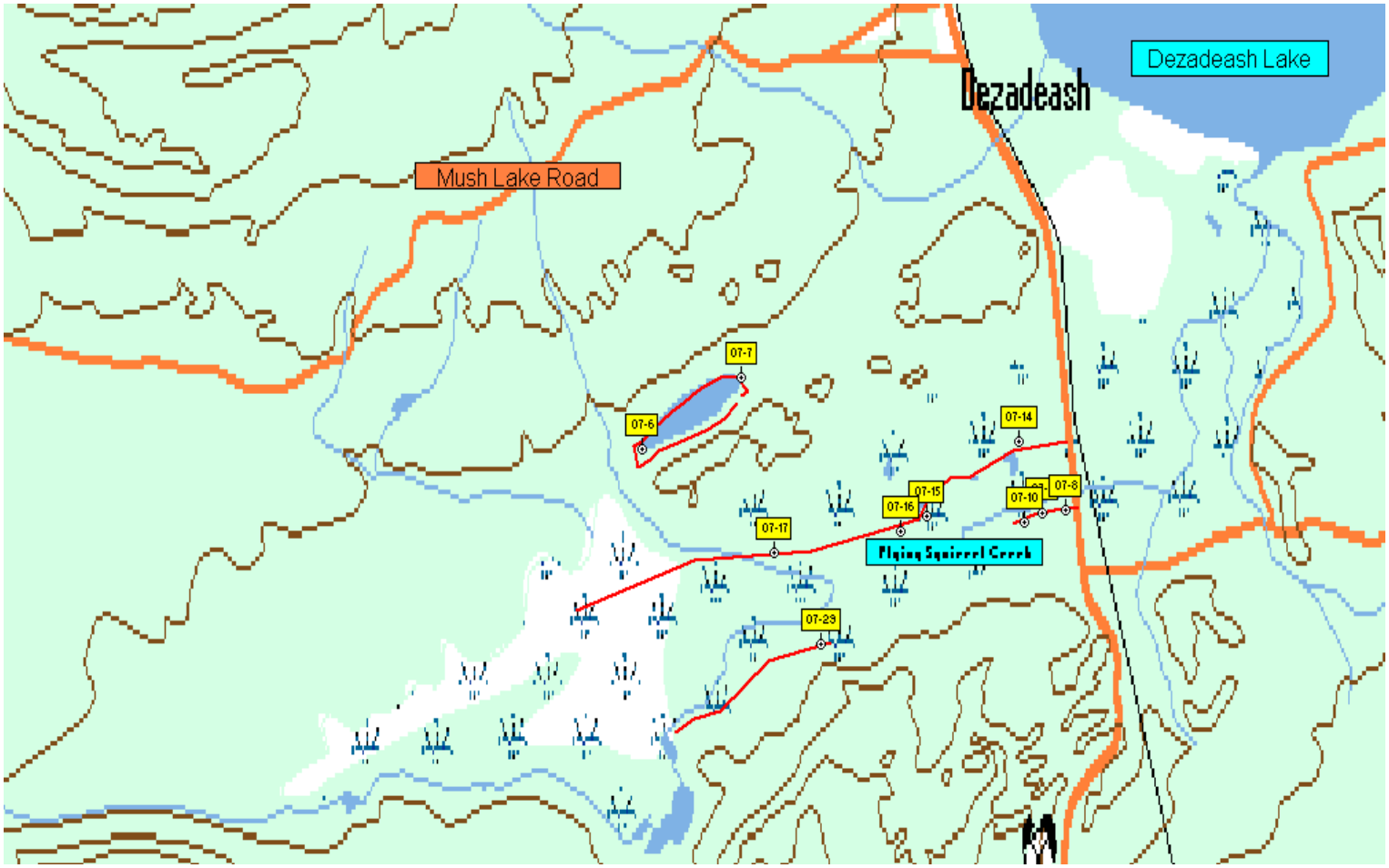
Appendix 2. Includes six maps that show all sightings for which the location, number of birds and behavioural data were collected.

Year	M	Day	Location	UTM E[1]	UTM N[1]	Observation	No. of Birds
2007	5	11	4 km SE of Kathleen Lake	381959	6715134	flyover, no evidence of birds on territory	1
2007	5	12	2 km SW of Haines Junction	362363	6736762	male, female calling	2
2007	5	12	2.5 km SW of Haines Junction	361097	6737088	male singing, calling; female calling	2
2007	5	12	3 km W of Haines Junction	360370	6737128	male singing, calling; female calling	2
2007	5	12	3.5 km W of Haines Junction	360236	6737137	male singing, calling; female calling	2
2007	5	13	unnamed lake 1 km S of ~km 2 on the Mush Lake road	385118	6693026	male singing, calling; female calling	2
2007	5	13	unnamed lake 1 km S of ~km 2 on the Mush Lake road	385540	6693280	male singing, calling; female calling	2
2007	5	13	1.5 km S of south end of Dezadeash Lake	386878	6692740	male singing	1
2007	5	13	1.5 km S of south end of Dezadeash Lake	386783	6692735	male singing	1
2007	5	13	1.5 km S of south end of Dezadeash Lake	386706	6692704	mating chase; 2males, 1 female, 2 unknown sex	4
2007	5	14	300 m W of km 210, Haines Road	385033	6710984	flyover, no evidence of birds on territory	4
2007	5	14	300 m W of km 210, Haines Road	384604	6711584	male singing, calling; female calling	2
2007	5	14	300 m W of km 210, Haines Road	384842	6711162	male singing, calling; female calling	2
2007	5	20	1.5 km SW of south end of Dezadeash Lake	386694	6693004	male singing	1
2007	5	20	1.75 km SW of south end of Dezadeash Lake	386299	6692729	male, female calling, nest suspected in the area	2
2007	5	20	2 km SW of south end of Dezadeash Lake	386186	6692685	male singing, calling; female calling	2
2007	5	20	2.25 km SW of south end of Dezadeash Lake	385660	6692618	male singing	1
2007	5	21	south end of Kluane Lake	635675	6764237	male singing	1
2007	5	23	4 Km NW of Kathleen Lake outflow	375665	6722597	male singing	1
2007	5	24	800 m SW of km 210, Haines Road	384681	6710645	male singing	1
2007	5	24	1.5 km W of km 210, Haines Road	383526	6711340	male singing	1
2007	5	26	1.6 km W of Dezadeash River/Pine Creek confluence	356945	6739498	male singing	1
2007	5	26	2 km W of Dezadeash River/Pine Creek confluence	356549	6739402	male singing, another bird heard calling	2
2007	5	26	2.2 km W of Dezadeash River/Pine Creek confluence	356375	6739506	male singing	1
2007	6	2	1.25 km NE of Lake Ray	380391	6693917	male singing	1
2007	6	2	outflow of Lake Ray	379596	6692950	male singing	1
2007	6	12	1 km S of km 10, Mush Lake Road	378447	6689932	male singing	1
2007	6	12	1 km S of km 12, Mush Lake Road	377150	6689820	male singing	1
2007	6	16	1.5 km SW of south end of Dezadeash Lake	385846	6692270	male singing	1
2007	6	14	Dezadeash River, 2.4 km W of Haines Junction	360805	6737563	males singing	6
2007	6	14	Dezadeash River, 10 km W of Haines Junction	353252	6737659	males singing, female feeding young	10
2007	6	24	Dezadeash River,7 km W of Haines Junction	356390	6739789	2 adults carrying food	4

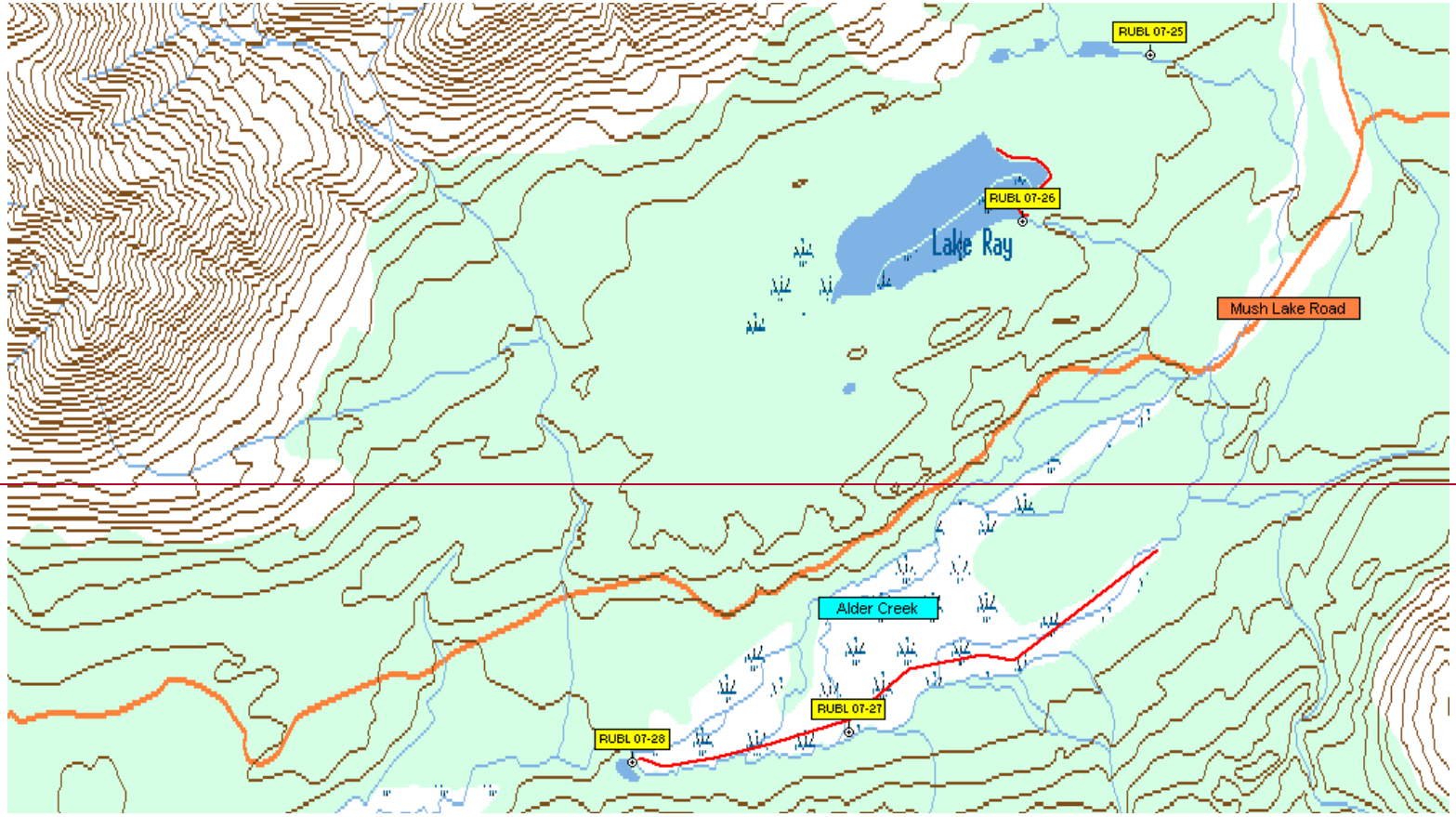
Appendix 1. Specific locations for Rusty Blackbird sightings.

[1] NAD 83 used for all sightings, all UTM's Zone 8 except one sighting at the south end of Kluane Lake that was in Zone 7

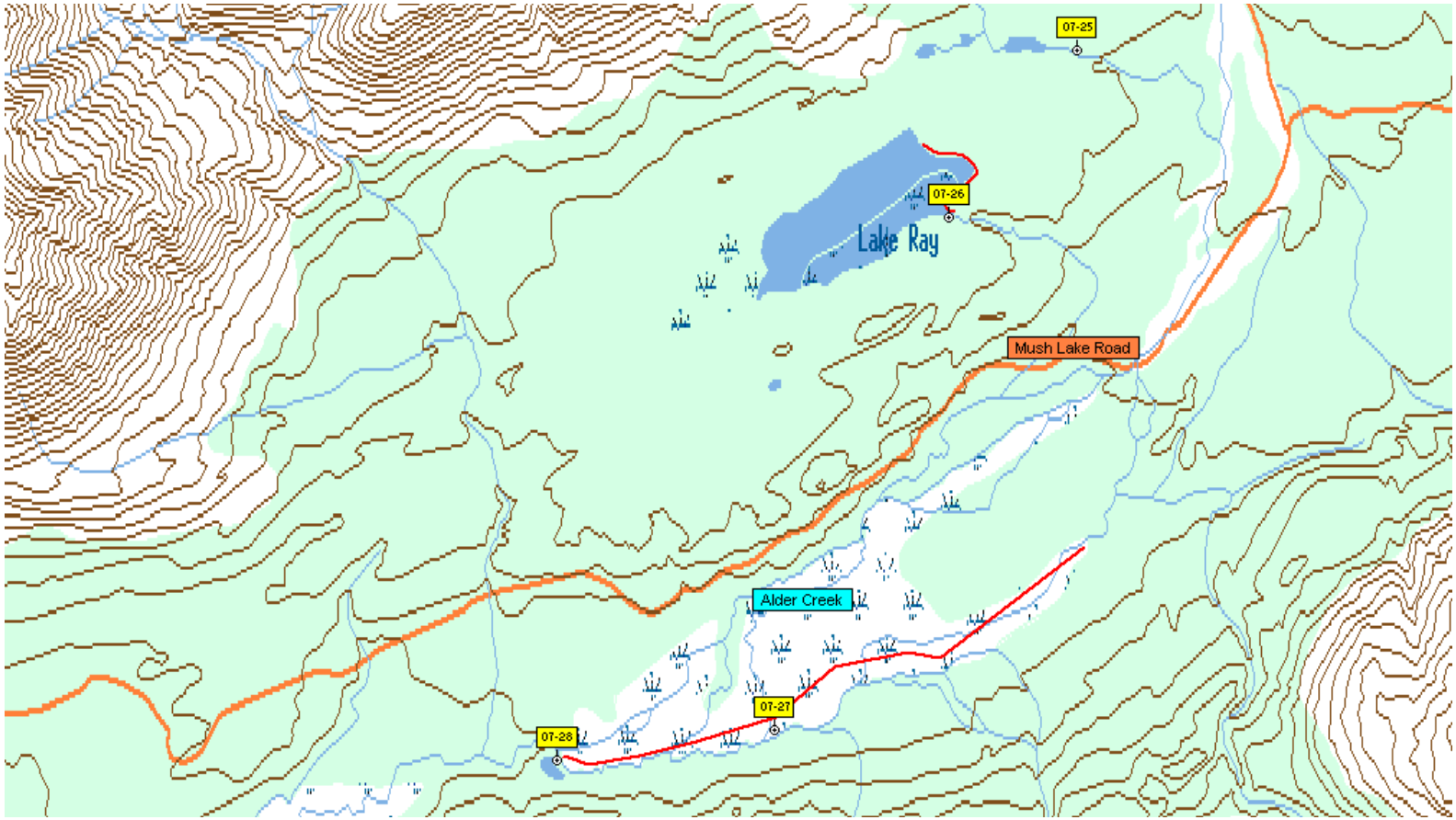
*8 additional observations were made while canoeing the Dezadeash River on June 14. No data was collected for these sightings.



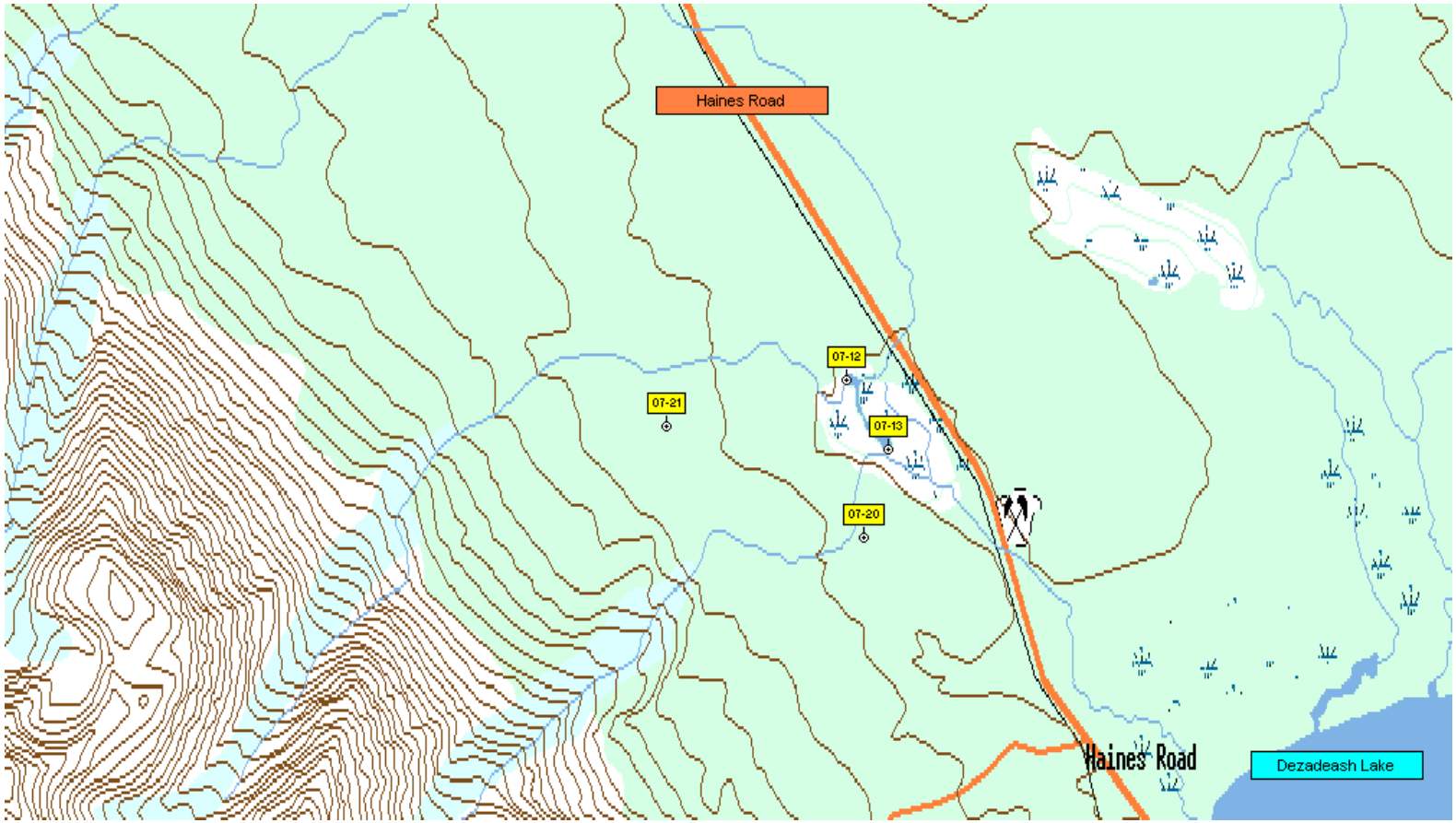
Map 1. Flying Squirrel Creek. Transects walked are shown as red lines. Territorial males or pairs are indicated by a yellow box.



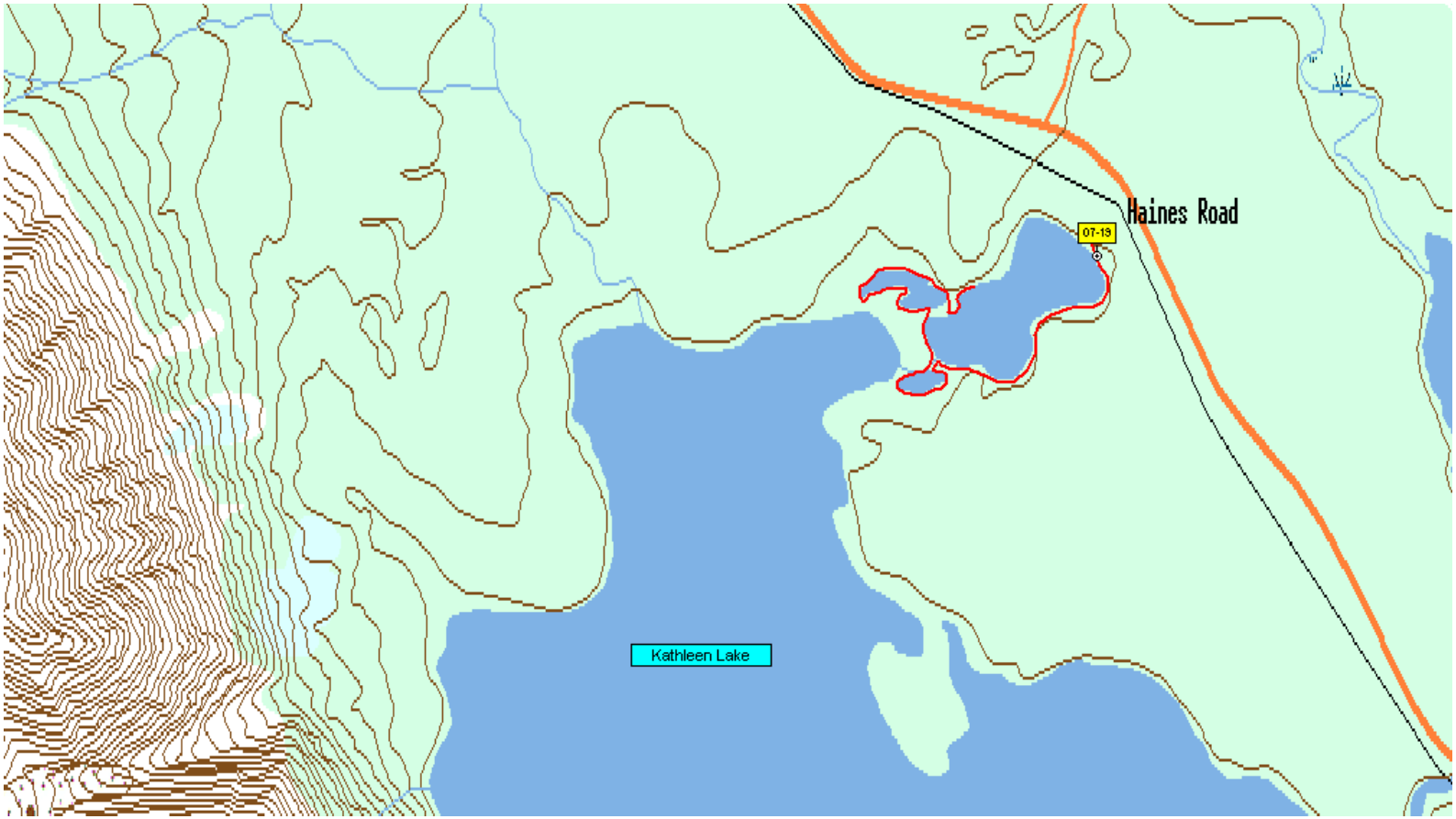
Map 2. Alder Creek wetlands. Transects walked are shown as red lines. Territorial males or pairs are indicated by a yellow box.



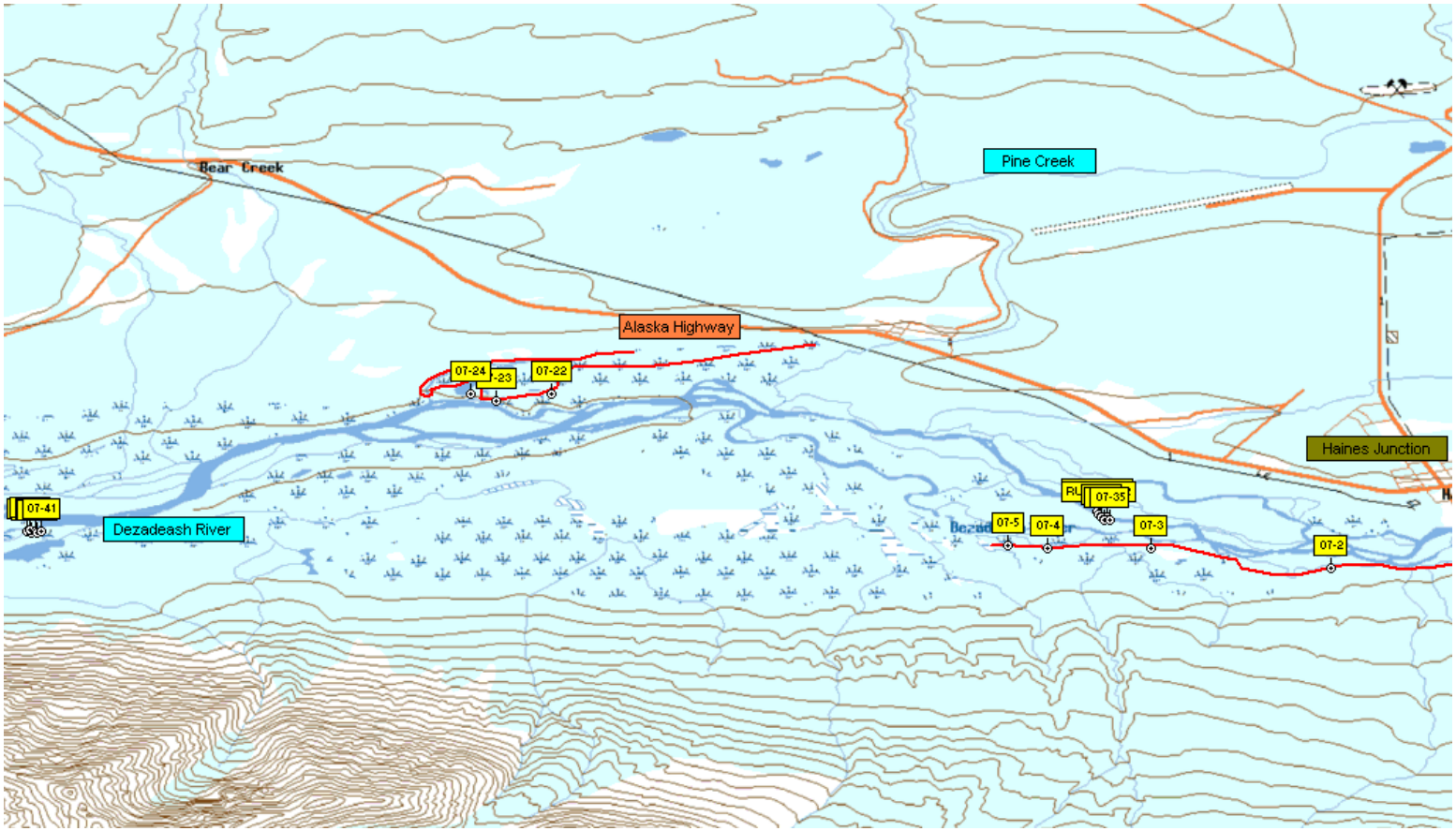
Map 2. Alder Creek wetlands. Transects walked are shown as red lines. Territorial males or pairs are indicated by a yellow box.



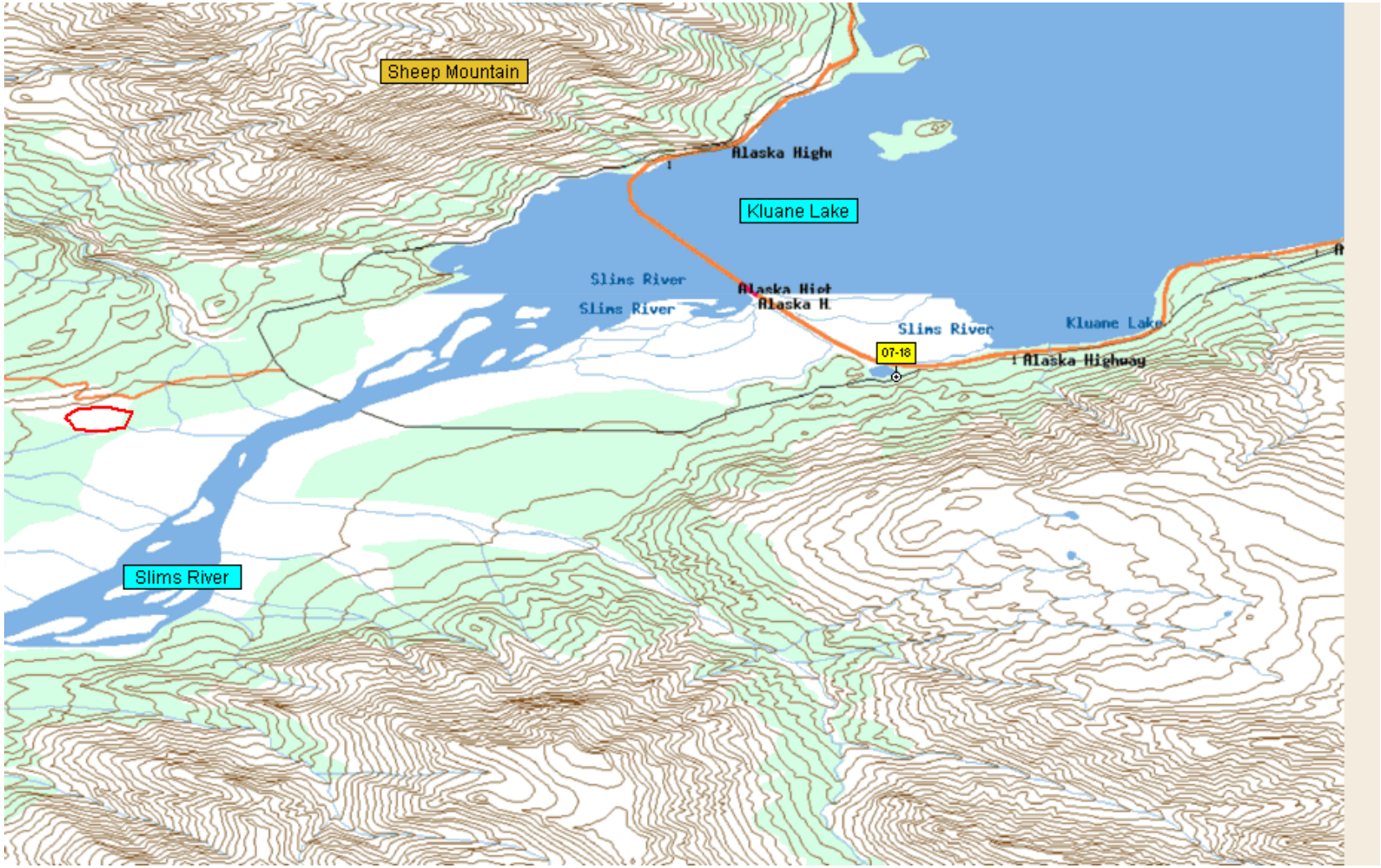
Map 3 Wetland north of Dezadeash Lake. Territorial males or pairs are indicated by a yellow box.



Map 4. Kathleen Lake. Transects walked are shown as red lines. Territorial males or pairs are indicated by a yellow box.



Map 5. Deazedeash River wetlands. Transects walked are shown as red lines. Territorial males or pairs are indicated by a yellow box.



- **Map 6. Slims River.** Transects walked are shown as red lines. Territorial males or pairs are indicated by a yellow box.