

DIVERSIFIED ENVIRONMENTAL SERVICES

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SCIENCE AND COMMUNITY ENVIRONMENTAL KNOWLEDGE FUND BOREAL CARIBOU TELEMETRY PROGRAM

FIXED-WING TELEMETRY MONITORING FLIGHT – Oct 25-Nov 01, 2014

Date: Nov 15, 2014

Attention: Brian Thomson
Science and Community Environmental Knowledge Fund
Victoria, BC

Executive Summary

One hundred forty-nine boreal caribou collar frequencies and 17 wolf collar frequencies were scanned during a monthly fixed-wing telemetry monitoring flight conducted on October 25 and November 01, 2014. One hundred forty-five caribou collars were heard transmitting normal VHF signals, 1 was transmitting a mortality signal (SCEK094), and 3 were not detected. No wolf mortality signals were detected, although several GPS wolf collar are presumed to have reached the end of their battery lives.

Background

During the winters of 2012-13 and 2013-14, 204 adult boreal caribou were radio-collared in British Columbia's boreal caribou ranges as part of the *British Columbia Boreal Caribou Implementation Plan* (BCIP). On October 25 and November 01, 2014, Diversified Environmental Services (DES) conducted a fixed-wing monitoring flight under contract to the Science and Community Environmental Knowledge Fund (SCEK), on behalf of the Research and Effectiveness Monitoring Board (REMB). Fixed-wing monitoring flights are conducted at monthly intervals throughout the year in order to identify mortality events to be followed up by ground-based mortality investigations and collar recoveries and to track potential long distance seasonal movements of VHF-collared caribou.

Objectives

The objective of the October 2014 monitoring flight was to determine the approximate location and VHF beacon status of all boreal caribou and wolf collars believed to be active in the survey area. These included caribou collars deployed on behalf of SCEK, caribou and wolf collars deployed on behalf of the Ministry of Forests, Lands, and Natural Resource Operations (MFLNRO), and pre-existing collars known to have entered BC's boreal caribou ranges from adjacent jurisdictions.

Methods

The monitoring flight was conducted using a Cessna 180 fixed-wing aircraft equipped with 1 outward-facing directional antenna affixed to each wing strut. Collar frequencies were scanned using Lotek™ STR 1000 and Lotek BioTracker telemetry receivers. The flight was conducted at 700-1,000 m above ground level at an average speed of 160 km/hr. The VHF beacon status of all detected collars was recorded on hard copy forms. In the case of VHF collars (Lotek LMRT4), status was recorded as either normal (60 pulses per minute (ppm)) or mortality mode (120 ppm) and a location (+/- 1 km) was recorded using a hand-held GPS unit. In the case of GPS/satellite collars (ATS Iridium, Vectronic Vertex, and Lotek LifeCycle), additional diagnostic VHF beacon patterns were recorded where applicable. As GPS/satellite collars are programmed to log multiple daily locations with high precision, additional effort to obtain collar locations after VHF signal detection is not necessary. Therefore, waypoints for

GPS/satellite collars were typically recorded at the location from which the collar was heard, with corrections for estimated bearing and distance, unless the VHF beacon status indicated a collar malfunction or mortality, in which case, more precise locations were obtained.

Results

The first day of the October 2014 monitoring flight was conducted on October 25. An extended period of low cloud and snow fall prevented completion of the monitoring event until November 01. One hundred forty-nine caribou collar frequencies were scanned during the monitoring flight, including 143 SCEK collars (27 ATS Iridium, 30 Vectronic Vertex, 11 Lotek LifeCycle, and 75 Lotek VHF), 2 Alberta VHF collars, and 4 previously-deployed MFLNRO VHF collars. In addition, 17 wolf collar frequencies were scanned during the October flight (13 Lotek Iridium and 4 Lotek VHF).

Results of the October 25-November 01, 2014 monitoring flight are presented in Table 1. Flight paths searched within and adjacent to each core habitat area are shown in Figure 1. Total flight line distance was 2,811 km. Of 149 caribou collar frequencies scanned, 145 normal VHF signals and 1 mortality signal were detected. SCEK094 (West Kotcho; Lotek VHF) was the only caribou mortality detected in October 2014. The remaining 3 caribou collars include one GPS collar believed to have failed in May 2013, shortly after deployment (SCEK042, Milligan, ATS Iridium), a second GPS collar which stopped transmitting GPS data in September 2014 (SCEK184, Calendar, ATS Iridium), and one MFLNRO Lotek VHF collar which appears to have exceeded its battery life (BC1001, Parker).

At the time of the October 2014 monitoring flight, 3 of the 4 Calendar caribou previously north of the NT/BC border had returned to BC.

Seventeen wolf collar frequencies were scanned during the October 25-November 01, 2014 monitoring flight, including 13 Lotek Iridium and 4 Lotek VHF. Of the 13 GPS/satellite wolf collars scanned, 5 had normal VHF beacon function and the remaining 8 were not detected. Of these 8, two had previously dispersed to the Northwest Territories beyond VHF range; one stopped transmitting GPS data on August 15, 2014 (BW010; Snake Pack) and the other is believed to have died in early September (BW028; Snake Pack). The remaining 6 undetected collars include one with a failed VHF signal but current GPS data (BW012; Big Arrow Pack), and 5 collars that have ceased GPS data transmission. These include collars that are nearing the end of their 2-year battery life.

Of the 4 VHF wolf collars scanned, 2 had normal VHF signals, one is assumed to have failed or the wolf dispersed soon after deployment in 2013 (BW007; Snake Pack), and the fourth was not detected but is assumed operational (BW026; Kwokullie Pack).

There were no opportunities for First Nations field assistance on this monitoring flight.

Cordially,



Brad Culling, R.P.Bio
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Table 1. VHF signal status and location of boreal caribou and wolf collars detected during the Oct 25-Nov 01, 2014 SCEK fixed-wing telemetry monitoring flight.

ID	Species	Range	Core	Collar Type	Status	Date	Zone	East	North	Comments
SCEK114	Caribou	Calendar	Calendar	ATS-Irid	50 ppm; no double 6th	1-Nov-14	10	648706	6615020	normal
SCEK184	Caribou	Calendar	Calendar	ATS-Irid	not heard	1-Nov-14	n/a	n/a	n/a	No VHF; last data Sep 23 14
SCEK185	Caribou	Calendar	Calendar	Lotek-Lifecycle	50 ppm	1-Nov-14	10	611047	6637456	normal
SCEK183	Caribou	Calendar	Calendar	Vectr-VertexTD	42 ppm	1-Nov-14	10	604908	6628496	normal
SCEK180	Caribou	Calendar	Calendar	Vectr-VertexTD	42 ppm	1-Nov-14	10	630524	6615435	normal
SCEK136	Caribou	Calendar	Calendar	ATS-Irid	50 ppm; double 6th	1-Nov-14	10	616847	6607942	normal
SCEK181	Caribou	Calendar	Calendar	ATS-Irid	50 ppm; double 6th	1-Nov-14	10	642593	6602495	normal
SCEK135	Caribou	Calendar	Calendar	Vectr-Vertex	50 ppm	1-Nov-14	10	618050	6573093	normal
SCEK119	Caribou	Calendar	Calendar	Vectr-Vertex	50 ppm	1-Nov-14	10	616018	6636372	normal
SCEK123	Caribou	Calendar	Calendar	Lotek-VHF	60 ppm	1-Nov-14	10	636380	6617097	normal
SCEK122	Caribou	Calendar	Calendar	Lotek-VHF	60 ppm	1-Nov-14	10	643558	6642890	normal
SCEK138	Caribou	Calendar	Calendar	Lotek-VHF	60 ppm	1-Nov-14	10	630266	6625501	normal
SCEK137	Caribou	Calendar	Calendar	Lotek-VHF	60 ppm	1-Nov-14	10	619191	6609115	normal
SCEK120	Caribou	Calendar	Calendar	Lotek-VHF	60 ppm	1-Nov-14	10	649026	6609267	normal
SCEK134	Caribou	Calendar	Calendar	Lotek-VHF	60 ppm	1-Nov-14	10	619569	6611673	normal
SCEK112	Caribou	Calendar	Calendar	Lotek-VHF	60 ppm	1-Nov-14	10	641676	6600528	normal
SCEK113	Caribou	Calendar	Calendar	Lotek-VHF	60 ppm	1-Nov-14	10	617619	6605992	normal
SCEK125	Caribou	Calendar	Calendar	Lotek-VHF	60 ppm	1-Nov-14	10	654363	6664601	normal
SCEK126	Caribou	Calendar	RRA-C	ATS-Irid	50 ppm; no double 6th	1-Nov-14	10	615996	6633991	normal
SCEK146	Caribou	Calendar	RRA-D	ATS-Irid	50 ppm; double 6th	1-Nov-14	10	617330	6607556	normal VHF; no sat comm
SCEK108	Caribou	Calendar	RRA-D	Lotek-VHF	60 ppm	1-Nov-14	10	616676	6606012	normal
SCEK107	Caribou	Calendar	RRA-D	Lotek-VHF	60 ppm	1-Nov-14	10	635090	6625128	normal
SCEK195	Caribou	Chinchaga	Etthithun	Vectr-VertexTD	42 ppm	25-Oct-14	10	638830	6414044	normal
SCEK036	Caribou	Chinchaga	Milligan	ATS-Irid	50 ppm; double 6th	25-Oct-14	10	617448	6348185	normal
SCEK038	Caribou	Chinchaga	Milligan	ATS-Irid	50 ppm; double 6th	25-Oct-14	10	665614	6296505	normal
SCEK026	Caribou	Chinchaga	Milligan	ATS-Irid	50 ppm; double 6th	25-Oct-14	10	661324	6298103	normal
SCEK033	Caribou	Chinchaga	Milligan	ATS-Irid	50 ppm; double 6th	25-Oct-14	10	640143	6326532	normal
SCEK199	Caribou	Chinchaga	Milligan	Vectr-VertexTD	42 ppm	25-Oct-14	10	666227	6326674	normal
SCEK198	Caribou	Chinchaga	Milligan	Vectr-VertexTD	42 ppm	25-Oct-14	10	649464	6303680	normal
SCEK196	Caribou	Chinchaga	Milligan	Vectr-VertexTD	42 ppm	25-Oct-14	10	637468	6342999	normal
SCEK042	Caribou	Chinchaga	Milligan	ATS-Irid	missing; not heard	25-Oct-14	n/a	n/a	n/a	Failed Iridium and VHF functions
SCEK201	Caribou	Chinchaga	Milligan	Vectr-VertexTD	42 ppm	25-Oct-14	10	660100	6303829	normal
SCEK197	Caribou	Chinchaga	Milligan	Lotek-Lifecycle	50 ppm	25-Oct-14	10	672800	6326763	normal
AB149.391	Caribou	Chinchaga	Milligan	unknown	60 ppm	25-Oct-14	10	666185	6328618	normal
SCEK040	Caribou	Chinchaga	Milligan	Vectr-Vertex	50 ppm	25-Oct-14	10	654220	6420763	normal
SCEK034	Caribou	Chinchaga	Milligan	Vectr-Vertex	50 ppm	25-Oct-14	10	670190	6328185	normal
SCEK055	Caribou	Chinchaga	Milligan	Vectr-Vertex	50 ppm	25-Oct-14	10	673648	6323961	normal
AB150.470	Caribou	Chinchaga	Milligan	unknown	60 ppm	25-Oct-14	10	671318	6324872	normal
SCEK035	Caribou	Chinchaga	Milligan	Lotek-VHF	60 ppm	25-Oct-14	10	636356	6343047	normal
SCEK041	Caribou	Chinchaga	Milligan	Lotek-VHF	60 ppm	25-Oct-14	10	666506	6329104	normal
SCEK027	Caribou	Chinchaga	Milligan	Lotek-VHF	60 ppm	25-Oct-14	10	659095	6301274	normal
SCEK032	Caribou	Chinchaga	Milligan	Lotek-VHF	60 ppm	25-Oct-14	10	663319	6337552	normal
SCEK029	Caribou	Chinchaga	Milligan	Lotek-VHF	61 ppm	25-Oct-14	10	663161	6340660	normal
SCEK052	Caribou	Chinchaga	Milligan	Lotek-VHF	60 ppm	25-Oct-14	10	648809	6302872	normal
SCEK053	Caribou	Chinchaga	Milligan	Lotek-VHF	60 ppm	25-Oct-14	10	635235	6342097	normal
SCEK030	Caribou	Chinchaga	Milligan	Lotek-VHF	60 ppm	25-Oct-14	10	667618	6320454	normal
SCEK058	Caribou	Chinchaga	Milligan	Lotek-VHF	60 ppm	25-Oct-14	10	663937	6326745	normal
SCEK054	Caribou	Chinchaga	Milligan	Lotek-VHF	60 ppm	25-Oct-14	10	671397	6331236	normal
SCEK057	Caribou	Chinchaga	Milligan	Lotek-VHF	60 ppm	25-Oct-14	10	638715	6343933	normal
SCEK059	Caribou	Chinchaga	Milligan	Lotek-VHF	60 ppm	25-Oct-14	10	663821	6327456	normal
SCEK061	Caribou	Chinchaga	Milligan	Lotek-VHF	60 ppm	25-Oct-14	10	667567	6329792	normal

Table 1 cont. VHF signal status and location of boreal caribou and wolf collars detected during the Oct 25-Nov 01, 2014 SCEK fixed-wing telemetry monitoring flight.

ID	Species	Range	Core	Collar Type	Status	Date	Zone	East	North	Comments
SCEK060	Caribou	Chinchaga	Milligan	Lotek-VHF	60 ppm	25-Oct-14	10	612977	6356235	normal
SCEK171	Caribou	Chinchaga	RRA-A	Vectr-VertexTD	42 ppm	25-Oct-14	10	600539	6434669	normal
SCEK142	Caribou	Chinchaga	RRA-A	Vectr-Vertex	50 ppm	25-Oct-14	10	613368	6450028	normal
SCEK189	Caribou	Chinchaga	RRA-A	Vectr-VertexTD	42 ppm	25-Oct-14	10	600062	6448606	normal
SCEK170	Caribou	Chinchaga	RRA-A	ATS-Irid	50 ppm; no double 6th	25-Oct-14	10	645135	6456055	normal
SCEK048	Caribou	Chinchaga	RRA-A	Lotek-VHF	60 ppm	25-Oct-14	10	597498	6438618	normal
SCEK172	Caribou	Chinchaga	RRA-A	Lotek-Lifecycle	50 ppm	25-Oct-14	10	599092	6437458	normal
SCEK009	Caribou	Fort Nelson	Fort Nelson	ATS-Irid	50 ppm; no double 6th	25-Oct-14	10	516841	6549238	normal
SCEK166	Caribou	Fort Nelson	Fort Nelson	Vectr-VertexTD	42 ppm	25-Oct-14	10	517175	6548732	normal
SCEK167	Caribou	Fort Nelson	Fort Nelson	Lotek-Lifecycle	50 ppm	25-Oct-14	10	522852	6545725	normal
BC1014	Caribou	Maxhamish	Capot-Blanc	Lotek-VHF	60 ppm	25-Oct-14	10	469029	6581815	normal
SCEK002	Caribou	Maxhamish	Capot-Blanc	ATS-Irid	50 ppm; double 6th	25-Oct-14	10	466460	6580444	normal
SCEK007	Caribou	Maxhamish	Capot-Blanc	ATS-Irid	50 ppm; no double 6th	25-Oct-14	10	467908	6582391	normal
SCEK001	Caribou	Maxhamish	Capot-Blanc	Lotek-VHF	60 ppm	25-Oct-14	10	467058	6583083	normal
SCEK076	Caribou	Maxhamish	Capot-Blanc	Lotek-VHF	60 ppm	25-Oct-14	10	468216	6581910	normal
SCEK066	Caribou	Maxhamish	Capot-Blanc	Lotek-VHF	60 ppm	25-Oct-14	10	467210	6580719	normal
BC1033	Caribou	Maxhamish	Fortune	Lotek-VHF	60 ppm	25-Oct-14	10	527354	6637130	normal
SCEK178	Caribou	Maxhamish	Fortune	Vectr-VertexTD	42 ppm	25-Oct-14	10	543041	6628565	normal
SCEK085	Caribou	Maxhamish	Fortune	Vectr-Vertex	50 ppm	25-Oct-14	10	528254	6631725	normal
SCEK005b	Caribou	Maxhamish	Fortune	Vectr-VertexTD	42 ppm	25-Oct-14	10	542412	6623016	normal
SCEK177	Caribou	Maxhamish	Fortune	Vectr-VertexTD	42 ppm	25-Oct-14	10	526865	6633749	normal
SCEK175	Caribou	Maxhamish	Fortune	Lotek-Lifecycle	50 ppm	25-Oct-14	10	519321	6632563	normal
SCEK179	Caribou	Maxhamish	Fortune	Lotek-Lifecycle	50 ppm	25-Oct-14	10	528457	6629143	normal
SCEK176	Caribou	Maxhamish	Fortune	Lotek-Lifecycle	50 ppm	25-Oct-14	10	475437	6630306	normal
SCEK164	Caribou	Maxhamish	Fortune	Lotek-VHF	60 ppm	25-Oct-14	10	541099	6626658	normal
SCEK078	Caribou	Maxhamish	Fortune	Lotek-VHF	60 ppm	25-Oct-14	10	466901	6625666	normal
SCEK128	Caribou	Maxhamish	Fortune	Lotek-VHF	60 ppm	25-Oct-14	10	527745	6630224	normal
SCEK086	Caribou	Maxhamish	Fortune	Lotek-VHF	60 ppm	25-Oct-14	10	523011	6628060	normal
SCEK129	Caribou	Maxhamish	Fortune	Lotek-VHF	60 ppm	25-Oct-14	10	532965	6630928	normal
SCEK087	Caribou	Maxhamish	Fortune	Lotek-VHF	60 ppm	25-Oct-14	10	539664	6630831	normal
SCEK168	Caribou	Maxhamish	Kiwigana	Vectr-VertexTD	42 ppm	25-Oct-14	10	551581	6560060	normal
SCEK003	Caribou	Maxhamish	Kiwigana	ATS-Irid	50 ppm; double 6th	25-Oct-14	10	531675	6558515	normal
SCEK169	Caribou	Maxhamish	Kiwigana	ATS-Irid	50 ppm; double 6th	25-Oct-14	10	536278	6562223	normal
SCEK064	Caribou	Maxhamish	Kiwigana	Lotek-VHF	60 ppm	25-Oct-14	10	540564	6561134	normal
SCEK062	Caribou	Maxhamish	Kiwigana	Lotek-VHF	60 ppm	25-Oct-14	10	536328	6567831	normal
SCEK004	Caribou	Maxhamish	Kiwigana	Lotek-VHF	60 ppm	25-Oct-14	10	511302	6615747	normal
BC1009	Caribou	Maxhamish	Kiwigana	Lotek-VHF	60 ppm	25-Oct-14	10	538175	6562012	normal; old wolf collar
SCEK016	Caribou	Parker	Parker	ATS-Irid	50 ppm; double 6th	25-Oct-14	10	477393	6513127	normal
SCEK014	Caribou	Parker	Parker	ATS-Irid	50 ppm; double 6th	25-Oct-14	10	487934	6514426	normal
SCEK194	Caribou	Parker	Parker	Vectr-VertexTD	42 ppm	25-Oct-14	10	495584	6516785	normal
SCEK010	Caribou	Parker	Parker	Lotek-VHF	60 ppm	25-Oct-14	10	491505	6523652	normal
SCEK012	Caribou	Parker	Parker	Lotek-VHF	60 ppm	25-Oct-14	10	479241	6516483	normal
SCEK015	Caribou	Parker	Parker	Lotek-VHF	60 ppm	25-Oct-14	10	488774	6523485	normal
BC1001	Caribou	Parker	Parker	Lotek-VHF	not heard	25-Oct-14	n/a	n/a	n/a	VHF not detected, assumed failed
SCEK044	Caribou	Prophet	Prophet	ATS-Irid	50 ppm; double 6th	25-Oct-14	10	570325	6448930	normal
SCEK161	Caribou	Prophet	Prophet	ATS-Irid	50 ppm; no double 6th	25-Oct-14	10	567435	6448327	normal
SCEK143	Caribou	Prophet	Prophet	Vectr-Vertex	50 ppm	25-Oct-14	10	547136	6449754	normal
SCEK144	Caribou	Prophet	Prophet	Lotek-VHF	60 ppm	25-Oct-14	10	560688	6429855	normal
SCEK051	Caribou	Prophet	Prophet	Lotek-VHF	60 ppm	25-Oct-14	10	572683	6446095	normal
SCEK049	Caribou	Prophet	Prophet	Lotek-VHF	60 ppm	25-Oct-14	10	548784	6450134	normal
SCEK045	Caribou	Prophet	Prophet	Lotek-VHF	60 ppm	25-Oct-14	10	555761	6446454	normal

Table 1 cont. VHF signal status and location of boreal caribou and wolf collars detected during the Oct 25-Nov 01, 2014 SCEK fixed-wing telemetry monitoring flight.

ID	Species	Range	Core	Collar Type	Status	Date	Zone	East	North	Comments
SCEK020	Caribou	Snake-Sahtaneh	Clarke	ATS-Irid	50 ppm; double 6th	25-Oct-14	10	572116	6500468	normal
SCEK193	Caribou	Snake-Sahtaneh	Clarke	Vectr-VertexTD	42 ppm	25-Oct-14	10	555468	6494781	normal
SCEK192	Caribou	Snake-Sahtaneh	Clarke	Lotek-Lifecycle	50 ppm	25-Oct-14	10	605818	6480667	normal
SCEK191	Caribou	Snake-Sahtaneh	Clarke	Lotek-Lifecycle	50 ppm	25-Oct-14	10	596417	6487217	normal
SCEK145	Caribou	Snake-Sahtaneh	Clarke	Lotek-VHF	60 ppm	1-Nov-14	10	575284	6508339	normal
SCEK068	Caribou	Snake-Sahtaneh	Clarke	Lotek-VHF	60 ppm	25-Oct-14	10	563904	6511145	normal
SCEK150	Caribou	Snake-Sahtaneh	Clarke	Lotek-VHF	60 ppm	25-Oct-14	10	606932	6483294	normal
SCEK148	Caribou	Snake-Sahtaneh	Clarke	Lotek-VHF	60 ppm	25-Oct-14	10	599403	6489216	normal
SCEK153	Caribou	Snake-Sahtaneh	Clarke	Lotek-VHF	60 ppm	25-Oct-14	10	535808	6502389	normal
SCEK152	Caribou	Snake-Sahtaneh	Clarke	Lotek-VHF	60 ppm	25-Oct-14	10	568592	6493615	normal
SCEK019	Caribou	Snake-Sahtaneh	Clarke	Lotek-VHF	60 ppm	25-Oct-14	10	570567	6509676	normal
SCEK021	Caribou	Snake-Sahtaneh	Clarke	Lotek-VHF	60 ppm	25-Oct-14	10	561979	6497115	normal
SCEK025	Caribou	Snake-Sahtaneh	Clarke	Lotek-VHF	60 ppm	25-Oct-14	10	554428	6494415	normal
SCEK024	Caribou	Snake-Sahtaneh	Clarke	Lotek-VHF	60 ppm	25-Oct-14	10	571616	6503611	normal
SCEK149	Caribou	Snake-Sahtaneh	Clarke	Lotek-VHF	60 ppm	25-Oct-14	10	572567	6509676	normal
SCEK156	Caribou	Snake-Sahtaneh	Clarke	Lotek-VHF	60 ppm	25-Oct-14	10	542383	6502865	normal
SCEK157	Caribou	Snake-Sahtaneh	Clarke	Lotek-VHF	60 ppm	25-Oct-14	10	565429	6497815	normal
SCEK070	Caribou	Snake-Sahtaneh	Clarke	Lotek-VHF	60 ppm	25-Oct-14	10	574700	6502676	normal
SCEK100	Caribou	Snake-Sahtaneh	East Kotcho	ATS-Irid	50 ppm; double 6th	1-Nov-14	10	630215	6555356	normal
SCEK103	Caribou	Snake-Sahtaneh	East Kotcho	Lotek-VHF	60 ppm	1-Nov-14	10	630302	6552174	normal
SCEK102	Caribou	Snake-Sahtaneh	East Kotcho	Lotek-VHF	60 ppm	1-Nov-14	10	625933	6553508	normal
SCEK105	Caribou	Snake-Sahtaneh	East Kotcho	Lotek-VHF	60 ppm	1-Nov-14	10	631718	6566016	normal
SCEK182	Caribou	Snake-Sahtaneh	North Kotcho	Vectr-VertexTD	42 ppm	1-Nov-14	10	607330	6566088	normal
SCEK188	Caribou	Snake-Sahtaneh	North Kotcho	Vectr-VertexTD	42 ppm	1-Nov-14	10	605476	6557768	normal
SCEK186	Caribou	Snake-Sahtaneh	North Kotcho	Vectr-VertexTD	42 ppm	1-Nov-14	10	612233	6566156	normal
SCEK110	Caribou	Snake-Sahtaneh	North Kotcho	ATS-Irid	50 ppm; double 6th	1-Nov-14	10	612338	6562541	normal
SCEK204	Caribou	Snake-Sahtaneh	North Kotcho	Lotek-Lifecycle	50 ppm	1-Nov-14	10	632965	6562232	normal
SCEK187	Caribou	Snake-Sahtaneh	North Kotcho	Lotek-Lifecycle	50 ppm	1-Nov-14	10	606022	6568686	normal
SCEK111	Caribou	Snake-Sahtaneh	North Kotcho	Vectr-Vertex	50 ppm	1-Nov-14	10	627265	6552202	normal
SCEK089	Caribou	Snake-Sahtaneh	North Kotcho	Lotek-VHF	60 ppm	1-Nov-14	10	608434	6567728	normal
SCEK088	Caribou	Snake-Sahtaneh	North Kotcho	Lotek-VHF	60 ppm	1-Nov-14	10	629597	6553833	normal
SCEK090	Caribou	Snake-Sahtaneh	North Kotcho	Lotek-VHF	60 ppm	1-Nov-14	10	610649	6579857	normal
SCEK092	Caribou	Snake-Sahtaneh	North Kotcho	Lotek-VHF	60 ppm	1-Nov-14	10	624220	6552185	normal
SCEK096	Caribou	Snake-Sahtaneh	Paradise	Lotek-VHF	60 ppm	1-Nov-14	10	626247	6566351	normal
SCEK203	Caribou	Snake-Sahtaneh	Tsea	Vectr-VertexTD	42 ppm	25-Oct-14	10	559523	6594869	normal
SCEK079	Caribou	Snake-Sahtaneh	Tsea	ATS-Irid	50 ppm; no double 6th	25-Oct-14	10	570392	6582856	normal
SCEK131	Caribou	Snake-Sahtaneh	Tsea	Lotek-VHF	60 ppm	25-Oct-14	10	560092	6598485	normal
SCEK081	Caribou	Snake-Sahtaneh	Tsea	Lotek-VHF	60 ppm	25-Oct-14	10	564327	6594694	normal
SCEK132	Caribou	Snake-Sahtaneh	Tsea	Lotek-VHF	60 ppm	25-Oct-14	10	561776	6591910	normal
SCEK082	Caribou	Snake-Sahtaneh	Tsea	Lotek-VHF	60 ppm	25-Oct-14	10	559151	6595797	normal
SCEK127	Caribou	Snake-Sahtaneh	Tsea	Lotek-VHF	60 ppm	25-Oct-14	10	562417	6594293	normal
SCEK173	Caribou	Snake-Sahtaneh	West Kotcho	ATS-Irid	50 ppm; no double 6th	1-Nov-14	10	605597	6554317	normal
SCEK071	Caribou	Snake-Sahtaneh	West Kotcho	Vectr-Vertex	42 ppm	1-Nov-14	10	630847	6556954	normal
SCEK097	Caribou	Snake-Sahtaneh	West Kotcho	ATS-Irid	50 ppm; double 6th	1-Nov-14	10	617584	6565629	normal
SCEK091	Caribou	Snake-Sahtaneh	West Kotcho	Lotek-VHF	60 ppm	1-Nov-14	10	625628	6549863	normal
SCEK094	Caribou	Snake-Sahtaneh	West Kotcho	Lotek-VHF	100 ppm	1-Nov-14	10	576094	6526872	MORTALITY
SCEK073	Caribou	Snake-Sahtaneh	West Kotcho	Lotek-VHF	60 ppm	1-Nov-14	10	589206	6548260	normal

Table 1 cont. VHF signal status and location of boreal caribou and wolf collars detected during the Oct 25-Nov 01, 2014 SCEK fixed-wing telemetry monitoring flight.

ID	Species	Range	Core	Collar Type	Status	Date	Zone	East	North	Comments
BW002	Wolf	Chinchaga	Big Arrow	Lotek-VHF	60 ppm	25-Oct-14	10	612301	6324821	normal
BW011	Wolf	Chinchaga	Big Arrow	Lotek-Irid	50 ppm	25-Oct-14	10	612301	6324821	no data since deployment
BW012	Wolf	Chinchaga	Big Arrow	Lotek-Irid	not heard	25-Oct-14	10	n/a	n/a	VHF failed; satellite data current
BW008	Wolf	Fort Nelson	Tsimeh	Lotek-Irid	not heard	25-Oct-14	n/a	n/a	n/a	VHF not detected; last data Aug 07 14
BW001	Wolf	Fort Nelson	Tsimeh	Lotek-VHF	60 ppm	25-Oct-14	10	518095	6539602	normal
BW009	Wolf	Fort Nelson	Tsimeh	Lotek-Irid	not heard	25-Oct-14	n/a	n/a	n/a	VHF not detected; last data Sep 27 14
BW014	Wolf	Fort Nelson	Tsimeh	Lotek-Irid	50 ppm	25-Oct-14	10	514602	6541091	normal
BW019	Wolf	Parker	Parker	Lotek-Irid	not heard	25-Oct-14	n/a	n/a	n/a	VHF not detected; last data Jun 25 14.
BW021	Wolf	Snake-Sahtaneh	Clarke	Lotek-Irid	not heard	25-Oct-14	n/a	n/a	n/a	VHF not detected; last data Jun 30 14.
BW030	Wolf	Snake-Sahtaneh	Clarke	Lotek-Irid	50 ppm	25-Oct-14	10	540063	6504864	normal
BW017	Wolf	Snake-Sahtaneh	Elleh	Lotek-Irid	not heard	25-Oct-14	10	n/a	n/a	VHF not detected; last data Oct 17, 13.
BW024	Wolf	Snake-Sahtaneh	Kwokullie	Lotek-Irid	50 ppm	1-Nov-14	10	635960	6578730	normal
BW026	Wolf	Snake-Sahtaneh	Kwokullie	Lotek-VHF	not heard	1-Nov-14	10	n/a	n/a	VHF not detected
BW007	Wolf	Snake-Sahtaneh	Snake	Lotek-VHF	not heard	25-Oct-14	n/a	n/a	n/a	not detected; missing since deployment
BW010	Wolf	Snake-Sahtaneh	Snake	Lotek-Irid	not heard	25-Oct-14	n/a	n/a	n/a	dispersal to NWT; last data Aug 15 14
BW027	Wolf	Snake-Sahtaneh	Snake	Lotek-Irid	50 ppm	1-Nov-14	10	533680	6520635	normal
BW028	Wolf	Snake-Sahtaneh	Snake	Lotek-Irid	not heard	25-Oct-14	n/a	n/a	n/a	dispersal to NT; no movement since Sep 06 14

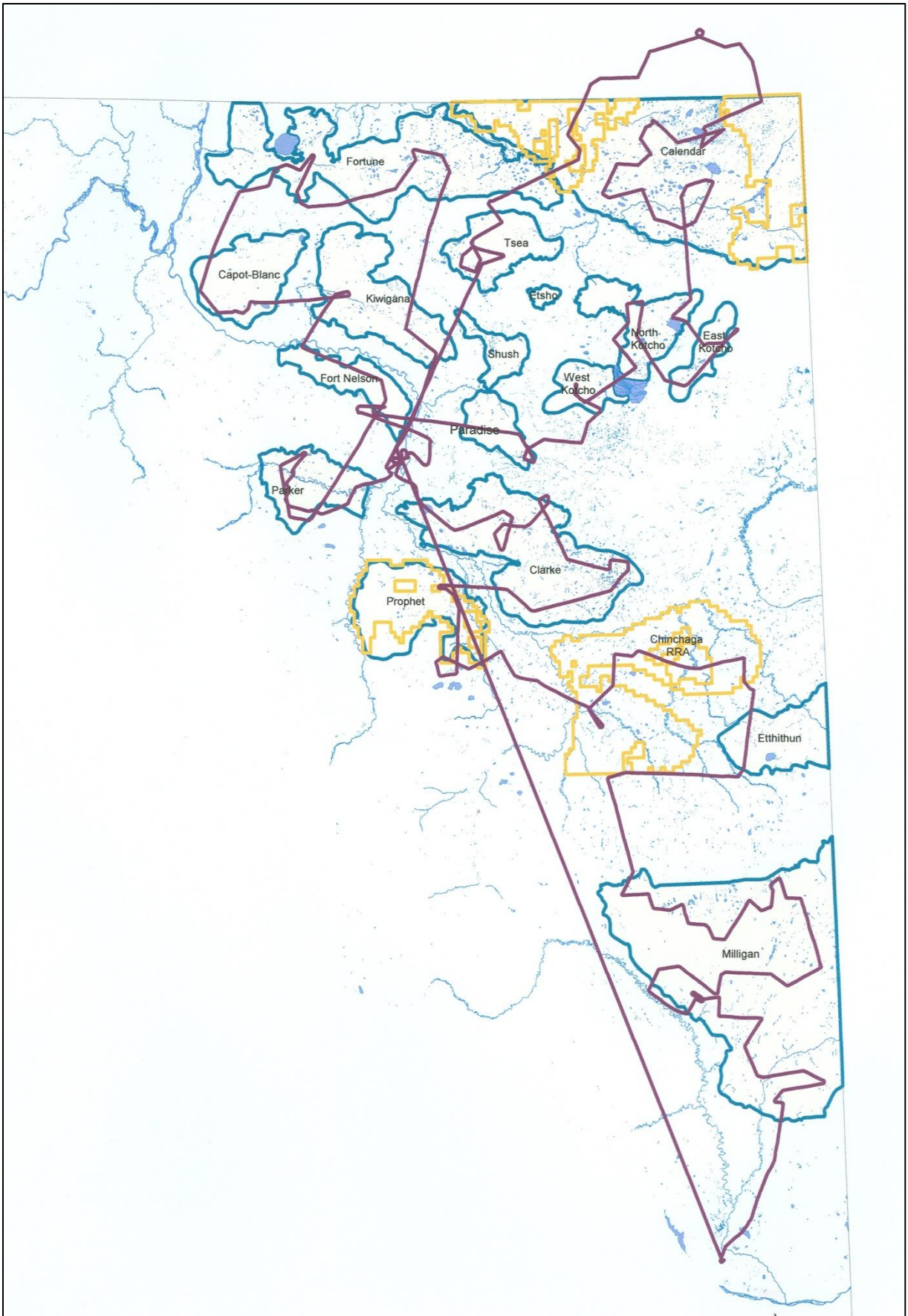


Figure 1. Flight paths flown during the October 25-November 01, 2014 SCEK boreal caribou and wolf telemetry monitoring flight.