

Itcha-Ilgachuz Northern Caribou Late Winter Recruitment Survey, March 2012

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Objective

Aerial inventory of the Itcha-Ilgachuz northern caribou herd was conducted in March 2012 to obtain an annual calf recruitment estimate.

Methods

A pre-survey fixed-wing telemetry flight on March 21, 2012 located 18 VHF radio-collared cows (navigator Lara Roorda; pilot Clint Cannings with Cariboo Air). Satellite data provided coordinates for Iridium 14 GPS collared cow caribou. Collared bull caribou (14 VHF, 4 GPS) were not relocated during the March survey. The rotary component of the recruitment survey occurred on March 26 and 27, 2012. Surveyors flew to locations where caribou were known to be based on pre-survey telemetry, relocated the caribou group containing collared animals using radio-telemetry, classified the group as adults or calves, and identified whether collared cows had a calf. Non-collared caribou groups were opportunistically counted and classified when visually detected during the flight. If sightability was poor (i.e., animals scattered and moving in trees) caribou were counted and categorized as unclassified, with no differentiation between adults and calves. Collared bull groups were not targeted for telemetry relocation due to time and budget constraints, however if collared bulls were visually observed during the survey, the animal ID/frequency was recorded. Survey crew included Lara Roorda (navigator), Pat Dielman (rear right observer) Chris Armstrong (rear left observer-March 26), Dan Bings (rear left observer-March 27), and pilot Tome Arduini (Arduini Helicopters Ltd). Flight path and caribou locations were recorded using a handheld GPS unit.

Calf recruitment (percent calves) was calculated as $total\ calves / total\ caribou * 100$, where $total\ caribou = (\#\ calves + \# adults - \# unclassified\ caribou)$.

Results & Discussion

Survey conditions were poor with complete snow coverage on ground but lack of fresh snow for at least 2 weeks, making it difficult to detect fresh track. Temperatures were seasonally warm between +1°C and +3°C, skies were clear, and wind was variable from nil to 20 km/hour.

Caribou were generally found south and east of the Itcha Mountains, with sightings of collared animals grouped around Holtry Creek, Puntzi Creek, Puntzi Mountain, Puntzi Lake, Chilanko River, and northeast of Charlotte Lake (Map 1). Caribou counts likely

included animals from the Itcha-Ilgachuz, Rainbow and Charlotte Alplands herds; radio-telemetry data has shown the herds share winter range in some years even though the three herds have distinct calving grounds.¹ Historically, caribou data collected during the Itcha-Ilgachuz late winter survey has been presented as Itcha-Ilgachuz population parameters and analysis of caribou classification data did not attempt to differentiate caribou groups containing collared animals by herd affiliation.

Forty-two groups of caribou were encountered during the flight with group size ranging from 2 to 36 animals. A total of 449 caribou (399 adults, 48 calves, 2 unclassified) were counted (Table 1; Appendix 1). Calf recruitment was 10.7%, below the 15-16% stabilizing rate put forth by Bergerud (1992) as necessary to balance natural adult mortality in woodland caribou.

Table 1. Caribou Count and Calf Recruitment Parameters for the Itcha-Ilgachuz Caribou Herd during Late Winter, March 2012.

| Attribute | Value |
|-----------------------------|---------------------------|
| Adults | 399 |
| Calves | 48 |
| Unclassified | 2 |
| Total # Caribou | 449 |
| Percent Calves ^a | $(48/447) * 100 = 10.7\%$ |

^aexcludes unclassified caribou from calculation

Survey costs required to complete the 2012 late winter survey are outlined in Table 2.

Table 2. Survey Costs for 2012 caribou recruitment survey.

| Activity | Hours | Total Cost |
|--|-------|------------------|
| Pre-survey telemetry – fixed-wing flight (1 day) | 6.7 | \$ 2,399 |
| Survey – rotary flight (2 days) | 13.2 | \$ 14,187 |
| Total | | \$ 16,586 |

Conclusions

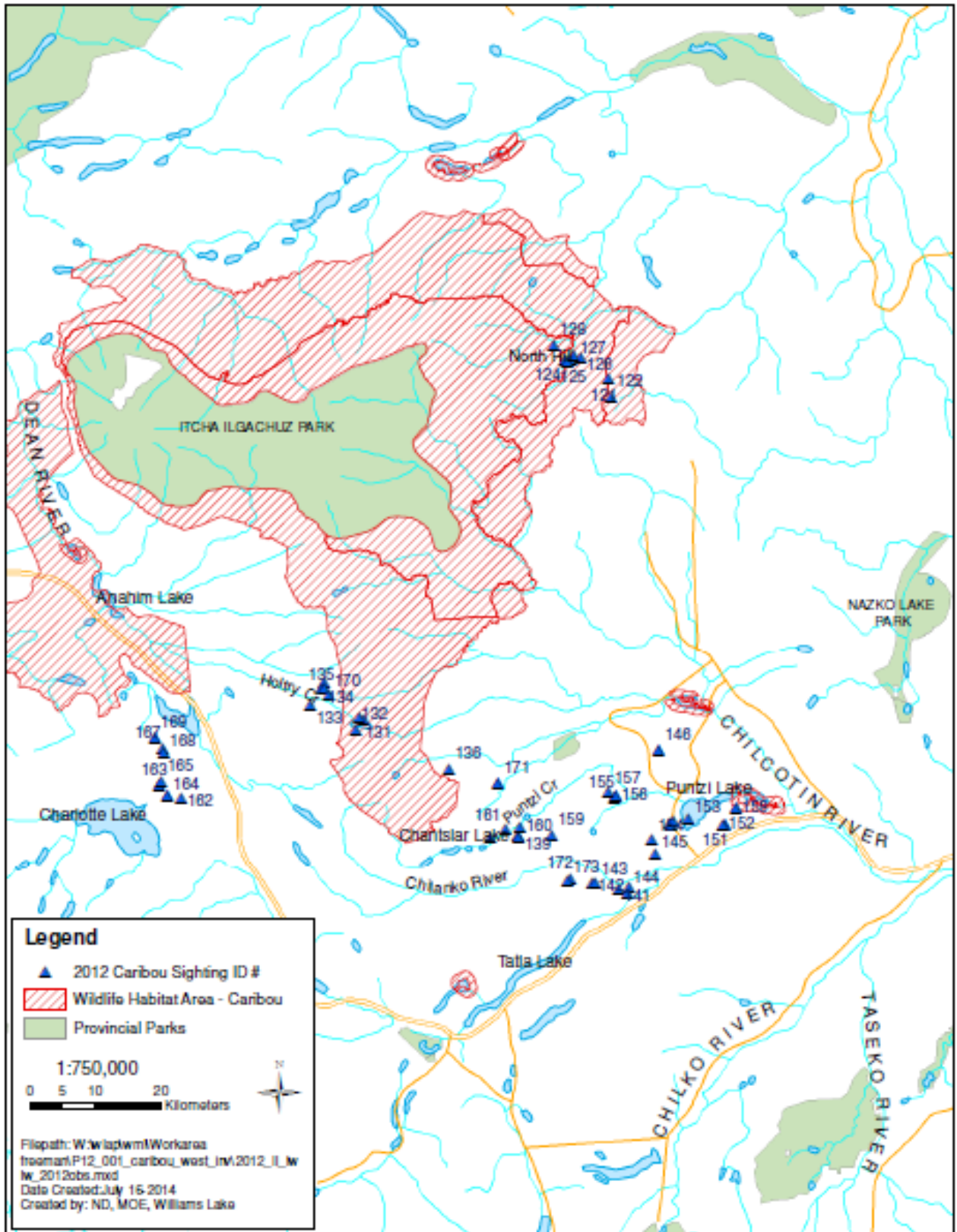
- In 2012 calf recruitment for the Itcha-Ilgachuz caribou population was 10.7%, below the 15-16% stabilizing rate necessary to balance natural adult mortality in woodland caribou.

References

Bergerud, A.T. 1992. Rareness as an Antipredator Strategy to Reduce Predation Risk for Moose and Caribou. In D.R. McCullough and R.H. Barrett (Eds). *Wildlife 2001: Populations*. Pp. 1008-1021. Elsevier Science Publishers Ltd. London.

¹ Herd affiliation of collared caribou is determined by caribou fidelity to calving grounds during June post-calving surveys.

Map1. Caribou Observations during the March 2012 Late Winter Calf Recruitment Survey



Appendix 1. Caribou classification count during the March 2012 late winter Itcha-Ilgachuz recruitment survey.

| Sighting | Total | Calves | Adults | Unclassified | Collar | Comments | Zone | Northing | Easting | Date | Time |
|----------|-------|--------|--------|--------------|---------------------------------------|---|------|----------|---------|-------------|------------|
| 121 | | | | | | 3 moose | 10 | 5849005 | 418575 | 26-Mar-2012 | 9:37:48AM |
| 122 | 15 | 2 | 13 | | 150.680bull /150.529bull /150.371bull | | 10 | 5846369 | 418855 | 26-Mar-2012 | 9:42:27AM |
| 123 | 8 | | 8 | | 150.583cow | | 10 | 5852231 | 413022 | 26-Mar-2012 | 10:06:21AM |
| 124 | 2 | | 2 | | 150.070bull | | 10 | 5852213 | 412098 | 26-Mar-2012 | 10:15:25AM |
| 125 | 6 | | 6 | | 151.415cow | | 10 | 5851876 | 412414 | 26-Mar-2012 | 10:18:50AM |
| 126 | 12 | 1 | 11 | | 151.443cow /150.720cow | | 10 | 5852540 | 414455 | 26-Mar-2012 | 10:25:01AM |
| 127 | 6 | | 6 | | 150.761cow | | 10 | 5852936 | 413486 | 26-Mar-2012 | 10:32:46AM |
| 128 | 12 | | 12 | | 150.743cow | | 10 | 5854541 | 410460 | 26-Mar-2012 | 10:37:45AM |
| 129 | 7 | | 7 | | 150.903cow /150.983cow | | 10 | 5804667 | 373261 | 26-Mar-2012 | 12:50:32PM |
| 130 | 18 | 2 | 16 | | 150.190bull | | 10 | 5798756 | 379023 | 26-Mar-2012 | 1:00:48PM |
| 131 | 11 | 3 | 8 | | 150.081cow | | 10 | 5799245 | 378414 | 26-Mar-2012 | 1:04:42PM |
| 132 | 8 | 1 | 7 | | 150.402bull | 150.903 was identified as male during capture, but was later determined to be female in Jun 2013. | 10 | 5797440 | 377748 | 26-Mar-2012 | 1:09:31PM |
| 133 | 17 | 2 | 15 | | 150.100bull /151.603cow /150.470bull | | 10 | 5801375 | 371016 | 26-Mar-2012 | 1:19:49PM |
| 134 | 11 | 2 | 9 | | | | 10 | 5803995 | 372869 | 26-Mar-2012 | 1:27:24PM |
| 135 | 22 | 3 | 19 | | 150.610cow | | 10 | 5803742 | 373304 | 26-Mar-2012 | 1:30:14PM |
| 136 | 6 | | 6 | | 150.840cow | | 10 | 5790842 | 391767 | 26-Mar-2012 | 1:47:41PM |
| 137 | | | | | | 8 horses | 10 | 5780175 | 397647 | 26-Mar-2012 | 1:55:12PM |
| 138 | | | | | | 17 horses | 10 | 5780222 | 401897 | 26-Mar-2012 | 1:56:46PM |
| 139 | 11 | 1 | 10 | | 150.320cow | | 10 | 5780024 | 401952 | 26-Mar-2012 | 1:58:51PM |
| 140 | 18 | 1 | 15 | 2 | 150.501cow | | 10 | 5771737 | 418486 | 26-Mar-2012 | 2:17:42PM |
| 141 | 6 | 1 | 5 | | 150.150cow | | 10 | 5771551 | 416867 | 26-Mar-2012 | 2:24:13PM |
| 142 | 16 | 1 | 15 | | | | 10 | 5772504 | 412868 | 26-Mar-2012 | 2:28:54PM |
| 143 | 4 | | 4 | | 150.670bull | | 10 | 5772523 | 413389 | 26-Mar-2012 | 2:30:19PM |
| 144 | 4 | | 4 | | 150.141cow | | 10 | 5770827 | 418217 | 26-Mar-2012 | 2:49:32PM |
| 145 | 24 | | 24 | | 150.703cow | | 10 | 5776604 | 422706 | 26-Mar-2012 | 2:59:12PM |

| Sighting | Total | Calves | Adults | Unclassified | Collar | Comments | Zone | Northing | Easting | Date | Time |
|--------------|------------|-----------|------------|--------------|-------------|---|------|----------|---------|-------------|------------|
| 146 | 13 | | 13 | | 150.160cow | | 10 | 5792415 | 423884 | 27-Mar-2012 | 9:23:13AM |
| 147 | 23 | 3 | 20 | | | | 10 | 5781117 | 425052 | 27-Mar-2012 | 9:29:43AM |
| 148 | 7 | 2 | 5 | | | | 10 | 5780986 | 425294 | 27-Mar-2012 | 9:30:01AM |
| 149 | 36 | 5 | 31 | | | | 10 | 5781548 | 425655 | 27-Mar-2012 | 9:34:01AM |
| 151 | 7 | | 7 | | | | 10 | 5780707 | 433534 | 27-Mar-2012 | 9:43:26AM |
| 152 | 8 | 1 | 7 | | | | 10 | 5780573 | 433152 | 27-Mar-2012 | 9:45:23AM |
| 153 | 14 | | 14 | | | | 10 | 5781737 | 427989 | 27-Mar-2012 | 9:55:18AM |
| 154 | 8 | | 8 | | | | 10 | 5778732 | 422280 | 27-Mar-2012 | 10:03:24AM |
| 155 | 9 | | 9 | | | | 10 | 5785488 | 416828 | 27-Mar-2012 | 10:34:38AM |
| 156 | 2 | 1 | 1 | | | | 10 | 5785774 | 417022 | 27-Mar-2012 | 10:38:08AM |
| 157 | 12 | 8 | 4 | | | | 10 | 5786303 | 415958 | 27-Mar-2012 | 10:40:33AM |
| 158 | 16 | | 16 | | | | 10 | 5783186 | 435293 | 27-Mar-2012 | 10:54:47AM |
| 159 | 3 | | 3 | | | | 10 | 5780176 | 407037 | 27-Mar-2012 | 11:42:14AM |
| 160 | | | | | | 3 horses | 10 | 5781418 | 402228 | 27-Mar-2012 | 11:46:12AM |
| 161 | | | | | | 28 horses | 10 | 5781296 | 400006 | 27-Mar-2012 | 11:47:00AM |
| 162 | 6 | 1 | 5 | | | | 10 | 5788072 | 350684 | 27-Mar-2012 | 12:08:38PM |
| 163 | 7 | 1 | 6 | | | | 10 | 5790261 | 347440 | 27-Mar-2012 | 12:16:13PM |
| 164 | 2 | | 2 | | | | 10 | 5788675 | 348576 | 27-Mar-2012 | 12:28:28PM |
| 165 | 6 | 1 | 5 | | | | 10 | 5790863 | 347767 | 27-Mar-2012 | 12:40:32PM |
| 167 | 20 | 4 | 16 | | | | 10 | 5795784 | 348188 | 27-Mar-2012 | 12:45:01PM |
| 168 | 3 | 1 | 2 | | | | 10 | 5795208 | 348319 | 27-Mar-2012 | 12:50:32PM |
| 169 | 3 | | 3 | | | | 10 | 5797524 | 347047 | 27-Mar-2012 | 1:03:25PM |
| 170 | | | | | 150.601cow | no classification; excluded from counts | 10 | 5802759 | 373853 | 27-Mar-2012 | 1:20:31PM |
| 171 | | | | | | 16 horses | 10 | 5788467 | 399156 | 27-Mar-2012 | 1:35:07PM |
| 172 | | | | | 150.069wolf | 3 grey wolves | 10 | 5773448 | 409535 | 27-Mar-2012 | 1:50:55PM |
| 173 | | | | | 150.600wolf | 1 grey with dark back | 10 | 5772983 | 409104 | 27-Mar-2012 | 1:52:32PM |
| TOTAL | 449 | 48 | 399 | 2 | | | | | | | |