Status of the Charlotte Alplands Caribou Herd

A Successful Short Distance Caribou Transplant

photo by Chris Schmid

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Executive Summary

A total of fifty-two caribou were transplanted to the Charlotte Alplands during five separate capture sessions between 1984 and 1991. Caribou were captured on the north sides of the Itcha Mountains and the Ilgachuz Mountains; both locations were less than 100 kilometres to the north-east of the release area. Radio-collared caribou within the two transplanted adult groups returned to their source herds. Radio-collared caribou within transplanted juvenile groups remained within the release area. As a result, utilising juvenile caribou as a source stock for short distance transplants to re-colonise vacant habitat appears to be a viable technique.

By 1993, the Charlotte Alplands herd numbered over 50 caribou from a minimum source stock of 28 animals within the four transplanted juvenile groups. At that time the herd appeared to be increasing and had modest calf production. The 1999 population survey observed a record 17 bull caribou, however surveys in the past two years have recorded numbers similar to those observed prior to 1999. Observed cow numbers declined over the last half of the 1990's and in recent years calf recruitment statistics, when measured, were poor. The present population of the Charlotte Alplands herd is estimated to be less than 50 caribou; however, due to the herd's low density and the relatively small group size of animals encountered during population surveys, it is not clear what proportion of the population is observed during surveys. Although it appears the original objective of restoring a caribou population to its historical range has been a success in the short term, it is unclear whether the herd has long-term viability.

Radio-telemetry monitoring and population surveys suggest that the herd has at least two habitat use strategies. One group of caribou, identified as a non-migratory component of the Charlotte Alplands Herd, resides in alpine or parkland habitats year round in the Trumpeter Mountain area. The migratory component of the herd appears to summer in alpine habitats south of Trumpeter Mountain and descend to forested habitats during winter; it is unclear where these animals spend the majority of the winter but it is suspected that the Caribou Flats area is utilised. Since 2000, a south-easterly shift in distribution of caribou from Trumpeter Mountain to the McClinchy Lake and Caribou Flats area may have occurred. Mixing between the Charlotte Alplands Herd and the Itcha Ilgachuz Herd likely occurs in the vicinity of Caribou Flats; mixing with the Rainbow Mountains Herd may also occur.

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Introduction

Historically caribou distribution in the south Chilcotin was much wider than at present, with reports of caribou throughout the area up to the early 1900's (Spalding, 2000). Reports by the Provincial Warden suggest that caribou inhabiting the Chilcotin were almost exterminated by 1916. Ritcey (1956) undertook a reconnaissance survey of Southern Tweedsmuir Park and summarised his discussions with locals by suggesting that caribou were abundant in the Caribou Mountain area in the 1920's but that the population crashed in the 1930's and eventually disappeared. He also reported that seven caribou were observed on Charlotte Lake during the 1955-56 winter but there are no records of sightings in the area after that period prior to the transplant. The theorised historic caribou distribution is supported by the recovery of cast caribou antlers during the last half of the twentieth century. Throughout the Western and Central Chilcotin Ranges antlers have been found as far west as Caribou Mountain in southern Tweedsmuir Park (Hayhurst 1983) and as far east as Dash Creek (D. Peel pers.com.). Exactly when and why these animals disappeared from this area remains unclear.

In 1984 a Habitat Conservation Fund project was initiated to restore caribou to unoccupied habitat within the Chilcotin Ranges west and south of Charlotte Lake. Between 1984 and 1991 fifty-two caribou were transplanted to this area from capture locations on the north sides of the Itcha Mountains and the Ilgachuz; both locations were less than 100 kilometres to the north-east of the release area.

The objectives of the project were as follows:

- Restore a caribou population to historical, but presently unoccupied range, in the Chilcotin Ranges.

- Monitor a component of the transplanted caribou once a month to determine the success of the project and to collect basic habitat use information.

Acknowledgements

Funding for the original transplant work and monitoring was provided by the Habitat Conservation Fund. Recent radio-telemetry monitoring was initiated through funding by Forest Renewal British Columbia (FRBC). The majority of population surveys were funded by FRBC, however, the August 1999 population survey was funded by the Habitat Conservation Trust Fund. The 2000 and 2001 surveys were funded by FRBC.

Without the support of numerous volunteers and staff this project would not have been possible. Daryll Hebert was instrumental in securing funding for the initial transplant project. Tom Smith was responsible for coordinating several of the transplant operations. Numerous staff and volunteers assisted in the capture operations including Doug Jury, Rod Woods, Lara Roorda, Roger Packham, Herb Langin, Randy Wright, Andy Stewart, Marty, Vergil and Justin Beets, Roy Mulvahill, Henry Schlitt, Curtis Bremner, Dale Seip

and Scott Harrison. Tom Arduini and Doug Smallman piloted the JetRangers during animal net-gunning operations.

Debbie Cichowski, Stefan Himmer, Lara Roorda and Kerra Shaw were involved in collection of radio-telemetry data. Floyd Vaughan, Wayne Escott and Paul Hindle piloted fixed-wing aircraft during the radio-telemetry flights. Tom Arduini and Mike King piloted the JetRanger helicopters during population surveys. Observers during various population surveys included Lara Roorda, Pat Dielman, Chris Schmid, Herb Langin, Kerra Shaw, Stefan Himmer, Damian Power and Darcy Peel. During development of this report Katherine VanSpall organised the telemetry data and Jennifer Ballentine produced the maps.

Study Area

The study area, approximately 3006 km^2, is bounded on the west by the Atnarko River, on the north by the Hotnarko River, on the east by Highway 20 and on the south by the Klinaklini River. Much of the area is made up of several rolling plateaus of open alpine and sub-alpine ecosystems with scattered lakes throughout. Several steep-sided forested valleys bisect the area in a generally east-west direction.

The range of the Charlotte Alplands caribou herd is primarily within the Central Interior Ecoprovince with caribou observations in both the Chilcotin Ranges and Fraser Plateau Ecoregions. Within these two ecoregions, the majority of caribou sightings have occurred in the Western Chilcotin Ranges Ecosection; additional observations during the winter months have been recorded within the Western Chilcotin Upland Ecosection and Chilcotin Plateau Ecosection (Figure 1).

Several biogeoclimatic zones occur within the area: Interior Douglas-fir, Sub-Boreal Pine Spruce in the valley bottoms, Montane Spruce at mid elevations, Engelmann Spruce - Sub-alpine Fir as the highest forested areas, and the Alpine Tundra zone.

Figure 1. Ecosections within the Charlotte Alplands Study Area

Methods

Two techniques were employed to capture caribou for translocation, drive nets and net-gun. A Bell 206 Jet Ranger helicopter was used to herd caribou into a location where several 100 meters of drive net were strategically arranged in a U shape. As the caribou approached the nets, a ground crew, with the assistance of the helicopter, hazed the animals into the nets where they became entangled. The hand-held net-gun, which was a more selective method of capture, was fired from a Bell 206 Jet Ranger helicopter and used on several occasions to capture individual animals.

Captured caribou were generally hobbled, blindfolded and loaded into helicopters for transport to the release site using stretchers. The majority of animals were marked using either ear-tags, colored neck collars, or both. Several animals were fitted with radio-collars to monitor the success of the project and obtain general habitat use information.

In 1984, caribou were captured during early winter in low elevation habitat and released into alpine habitat. Also, during this initial transplant operation the majority of the caribou consisted of adult females. In subsequent transplant operations the strategy was revised so that caribou were captured in late winter from alpine habitat and were then released into alpine areas. Furthermore, efforts were made to transplant only young animals (calves and yearlings). Between 1986 and 1991, one group of released animals was comprised of predominately adult caribou while the other four groups were mostly calves of the year.

Aerial surveys were completed in a Bell 206 Jet Ranger utilising the total count technique (Resource Inventory Committee, 1997). The surveys were restricted to high strata habitats where, under the proper conditions, animal sightability is high. This included the alpine and adjacent parkland habitat within areas that were surveyed. Mountain complexes were generally flown in a counter clockwise manner to allow observers on the left side of the helicopter to scan the open habitat for caribou. The observer in the back right seat provided additional coverage when necessary, particularly in the flatter terrain. Depending on survey timing, caribou were generally classified as adult (unsexed), bull (mature and immature), cow, yearling (male or female) or calf. The following attributes adapted from Simpson et al. (1993) were used to classify individual animals:

Class III Bulls:	large, heavy beamed antlers
(Mature Bull)	antlers often have many points and palmated brow tine
	body size
	testicles or penis sheath
	lack of vulva patch
Class II Bulls:	antlers larger than females and smaller than Class III
(Medium Bull)	body size
	testicles or penis sheath
	lack of vulva patch

Cows: small antlers
black vulva patch
presence of calf or yearling
short face for yearlings

Calf: body size
dark bodies
lack of antler development
proximity to adults

Results

Capture and Transplant Procedures

A total of fifty-two caribou were transplanted to the Charlotte Alplands during five separate capture sessions (Table 1). In 1984 a total of fifteen caribou were captured over a three day period, November 19th to 21st, near Itcha Flats on the north side of the Itcha Mountains. Thirteen of the caribou were captured using drive nets and two were captured by net-gunning. Eleven adult females, two adult males and two female calves were all released at the same location north of McClinchy Lake. Four of the adult females were fitted with radio-collars (frequencies 150.240, 150.260, 150.320 & 151.072) and all other caribou were marked with at least one ear tag. Data recorded during all transplant operations is summarised in Appendix 1.

Table 1: Summary of caribou relocated to the Charlotte Alplands area.

Date	Capture Site	Number			Release Site	Dist. Between Sites
		adult	Yrlg	calf		
Nov. 1984	Itcha Flats	13		2	McClinchy Cr.	80 kms
Apr. 1986	N. side Ilgachuz	8	1		McClinchy Cr.	90 kms
Apr. 1986	N. side Ilgachuz		2	4	Trumpeter Mtn.	70 kms
Mar. 1987	N. side Ilgachuz			11	Trumpeter Mtn.	70 kms
Mar. 1988	N. side Ilgachuz		1	2	Trumpeter Mtn.	70 kms
Mar. 1991	N. side Ilgachuz			8	Trumpeter Mtn.	70 kms

On April 2nd and 3rd, 1986 a total of fifteen caribou were captured near tree line from the north side of the Ilgachuz Mountains. A juvenile group made up of two female yearlings, two male calves and two female calves was released on Trumpeter Mountain. An adult group composed of eight adult females and one yearling male was released north of McClinchy Lake near the 1984 release site. All caribou were ear-tagged, nine were fitted with orange collars and three with green collars. Each group contained two radio-collared animals (adult group frequencies: 150.449 and 150.490; juvenile group frequencies: 150.470 and 150.248).

The third transplant occurred on March 16th and 17th, 1987 when eleven caribou calves, three males, and eight females were captured from the north side of the Ilgachuz

Mountains and released at the Trumpeter Mountain site. All the animals were ear-tagged; two female caribou were fitted with green radio-collars (frequencies 150.480 and 150.540) and seven animals were fitted with red collars.

On March 14th, 1988 three additional caribou were captured on the north side of the Ilgachuz Mountains and released at the Trumpeter Mountain site. This group was made up of one female yearling and two female calves. The two calves were radio-collared (frequencies 150.282 and 150.300) and all three were ear-tagged and fitted with yellow collars.

The last transplant occurred on March 13th and 14th, 1991 when eight caribou calves were captured by net-gunning from the north side of the Ilgachuz Mountains; this group was also released at the Trumpeter Mountain site to supplement the previous released animals. One calf was fitted with a radio-collar (frequency 150.063) for monitoring purposes.

On March 10th, 1999 three adult female caribou were captured by net-gunning near Trumpeter Mountain as part of an ongoing monitoring program. All three animals were fitted with radio-collars (frequencies 150.141, 150.200 and 150.161) and ear-tagged. One of the collars (150.141) was placed on a caribou that had been transplanted in 1988 and was carrying a non-functioning collar (150.300).

The most recent capture occurred on August 16th, 2000 southwest of McClinchy Lake. One adult female caribou was captured by net-gunning, ear tagged and fitted with a radio-collar (frequency 150.332).

Monitoring of Radio-Collared Animal Movements

Due to logistical problems and bad weather, monitoring flights to locate the adult caribou fitted with radio-collars (frequencies 150.240, 150.260, 150.320 and 151.072) during the November 1984 transplant did not commence until December and no animals were relocated until January of 1985. By March, the four radio-collared caribou had returned to their original range and it was initially assumed that all transplanted caribou had returned to the area (Figure 2). The four collared animals were subsequently monitored as part of a habitat use study associated with the Itcha-Ilgachuz Mountains and Rainbow Mountains Herds. Through the habitat use project caribou 150.320 was monitored until June 1988, 150.260 was monitored until June 1985, 151.072 was monitored until June 1986 and 150.240 was monitored until July 1986.

The two radio-collared adults (frequencies 150.449 and 150.490) released in April 1986 remained in the transplant area throughout the summer and then in the autumn both made major northward movements back to their original home range; 150.449 returned to the Itcha-Ilgachuz Mountains and 150.490 went to the Rainbow Mountains (Figure 3). This movement was confirmed by an observation of a group of seven caribou, some marked, crossing Highway #20 heading in a northeast direction in late November. The two radio-collared yearlings, 150.470 and 150.248, remained in the transplant area at least until June 1988 when monthly monitoring ceased. During the 1986/1987 winter they were

found with a group of ten to twelve caribou in the Hooch Lake – Caribou Flats area east of Charlotte Lake. These two caribou returned to the Trumpeter Mountain area in May 1987 and spent the summer and autumn in the alpine near the release site accompanied by several other caribou, including two radio-collared caribou (frequencies150.480 and 150.540) transplanted to the area in March 1987 (Figure 4).

As noted above, the two radio-collared calves (frequencies 150.480 and 150.540) from the March 1987 transplant joined the juvenile animals from the previous year's release and spent the summer in the alpine near Trumpeter Mountain. In mid winter 1987/1988 all four radio-collared caribou resident within the transplant area, moved to lower elevations along Kappan Creek east of Mount Kappan. By the end of April, they had all returned to Trumpeter Mountain where they were joined by the two recently collared animals (frequencies 150.281 and 150.300) released in March 1988. All six radio-collared caribou remained in the release area until monitoring ceased in June 1988. During the last monitoring flight in June 1988, two of the radio-collared caribou, 150.470 released in 1986 and 150.281 released in 1988, were found dead near Trumpeter Mountain.

The caribou calf fitted with a radio-collar during transplant operations in 1991 was never monitored nor observed during future population surveys. One of the radio-collared calves from the 1988 transplant (frequency 150.300) was found in the vicinity of Trumpeter Mountain during a radio-telemetry reconnaissance flight in March of 1993 that observed a total of 52 caribou. During a population survey in July 1993 the same collared animal was observed again along with collared caribou 150.540, which had been released in 1987. Both animals were observed in the alpine: 150.300 east of Mount Ada and 150.540 on Trumpeter Mountain.

The three radio-collared caribou captured in March 1999 remained in the vicinity of Trumpeter Mountain, primarily within alpine habitats throughout the period of monitoring. A summary of these animal's movements from their initial capture until monitoring termination is found in Appendix 2. All three of these caribou were found dead, likely due to wolf predation, on Trumpeter Mountain; caribou 150.141 died in August 1999 while 150.200 and 150.161 both died in July 2000.

Monitoring of the caribou collared in August 2000 (150.332) did not begin until December 2000. During the autumn of 2000 she had travelled northeast of the capture site towards the headwaters of Holtry Creek, north of Sugarloaf Plateau. For the duration of the winter caribou 150.332 was relocated in the area surrounding Sugarloaf Plateau; collared caribou from the Itcha-Ilgachuz Herd were also relocated in the vicinity of where she spent the winter (Figure 5). Caribou 150.332 was relocated in this area until May 2001, usually with 3 to 5 other animals, at which point she migrated to the Ilgachuz Mountains and was observed on both the northern and southern sides of the range. During a late July survey of the Charlotte Alplands Study Area, caribou 150.332 was observed once again near her original capture site southwest of McClinchy Lake in the company of eleven caribou.

Figure 2. Results of the 1984 transplant, showing movement of Radio-Collared Caribou

Figure 3. Results of the 1986 Transplant, showing movement of Radio-Collared Caribou in the Released Adult Group

Figure 4. Results of the 1986 Transplant, showing movement of Radio-Collared Caribou in the Released Juvenile Group

Figure 5. Movement of Radio-Collared Caribou 150.332, August 2000–August 2001

Population Trends

Following the completion of transplant operations, the first attempt to undertake a detailed count of the herd occurred in July of 1993. During this survey a total of 53 caribou were observed including 38 adults and 15 calves (Table 2). Considering a reconnaissance radio-telemetry flight, undertaken in March of that year, observed 52 caribou prior to calving, these results show that the herd had increased since the termination of transplant operations, and that juvenile animals were being recruited into the population. Details of all population surveys are summarized in Appendix 3.

Table 2: **Summary of caribou observations during inventory flights within the Charlotte Alplands**

Date	Adults	Bulls	Cows	Yearlings	Calves	Total
July 1993		9	29		15	**53**
Mar. 1994	35				7	**42**
July 1998		6	18	1	5	**30**
Oct. 1998		8	17		3	**28**
Mar. 1999		7	13		1	**21**
Aug. 1999		17	17	2	3	**39**
Aug. 2000		8	3	1		**12**
July 2001		7	12		4	**23**

Observed cow numbers have declined from 29 animals, observed in 1993, to only 12 cows observed in 2001. On the other hand, observed bull numbers have increased from 9 animals in 1993 to a record high of 17 bulls in 1999; numbers in the past two years were similar to those observed prior to August 1999. Although sample size is small, percent calves declined from 16.7 percent of the population in July 1998 to 10.7 percent by October and then 4.8 percent in March of 1999. In August 1999, percent calves had already dropped to 7.7 percent. Observations from the July and August surveys over the past four years confirm that during summer the Charlotte Alplands Herd was dispersed over a large area in small groups (average group size is 3.4 caribou; n=31) at low density (Figure 6); the 2001 observed caribou density for the Charlotte Alplands Study Area was 0.0077 caribou/km^2, less than one caribou per 125 km^2.

Figure 6. Distribution of the Charlotte Alplands Caribou Herd

Discussion

Transplant Procedures

The practice of transplanting caribou a short distance (less than 100 kilometres) failed when groups contained adult caribou; these radio-collared animals were observed to migrate back to their original range within approximately eight months. When transplanted groups contained only juvenile caribou, calves or yearlings approximately 10 and 22 months old respectively, the animals remained within their new surroundings. This suggests that younger animals possess less fidelity to their original range.

It is unknown whether the success of the juvenile transplants was due, in part, to the donor stock. Radio-telemetry work over the past 20 years has shown that the animals captured on the north side of the Itcha Mountains were likely part of the Itcha-Ilgachuz Herd and the animals captured on the north side of the Ilgachuz Mountains were likely part of the Rainbow Herd. The Itcha-Ilgachuz Herd caribou calve in the Itcha-Ilgachuz Mountains and usually winter to the north, east or south of the Itcha Mountains. Rainbow Herd caribou that calve in the Rainbow Mountains either winter in the alpine on the north side of the Rainbow or Ilgachuz Mountains or in low elevation pine stands in the vicinity of Anahim Lake. Thus, the juvenile groups likely came from Rainbow Herd stock that inhabit an area that is more similar to the Charlotte Alplands than that inhabited by the Itcha-Ilgachuz Herd. It should be noted there is some mixing between the two herds; three animals out of a radio-collared sample of 62 (monitored for at least 12 consecutive months) were observed to shift between herds (Cichowski, unpub. data; Young and Freeman, *in prep*).

Animal Movements

Radio-telemetry monitoring and population surveys suggest that the Charlotte Alplands Herd has developed at least two habitat use strategies: migratory and non-migratory. Juvenile groups were transplanted to the Trumpeter Mountain area and a portion of these animals and their offspring have remained in the immediate area. Up to 1999, a group of approximately 20 caribou resided in the Trumpeter Mountain area year round; these caribou spent the majority of the year in alpine or parkland habitats and were classified as non-migratory.

In the past two years radio-telemetry monitoring and inventories have detected a decrease in numbers or possible shift in home range distribution of the caribou residing in the Trumpeter Mountain area. Fewer caribou than previous surveys, only four in the July 2001 population survey and one in August 2000, were observed in the Trumpeter Mountain and Mount Kappan vicinity. Radio-telemetry monitoring of this area was terminated in July 2000 when the remaining two collared animals died. Several reconnaissance fixed-wing flights over the area in February and March of 2001 resulted in few observations of caribou sign; evidence of at least six animal beds and several tracks were observed on the south-western slopes of Mount Kappan, however no evidence of use was observed in the alpine areas of Trumpeter Mountain normally

utilised by caribou during the winter months. It is possible that some of the caribou may have shifted southeast towards Mt. McClinchy, an area utilised by the migratory component of the Charlotte Alplands herd. Increased access for motorised recreation and/or increased predation in the Trumpeter Mountain area may have contributed to this potential distribution shift and/or the reduced numbers of observed animals.

The migratory component of the herd spends the summer in alpine habitats dispersed in small groups south of Trumpeter Mountain, extending as far south as the Klinaklini River; during winter, the caribou descend to forested habitats. There has been unconfirmed reports of caribou observed south of the Klinaklini River in the alpine area north of Perkins Peak during the summer. Radio-telemetry monitoring during the mid 1980's showed that some animals used low elevation forested habitats during winter in the vicinity of Hooch Lake and Kappan Creek. Recently completed habitat mapping suggests these areas, as well as Caribou Flats, have potential as low elevation winter range for caribou (Apps et al, 2001).

At present it is not clear where this migratory group of animals spend the majority of the winter but it is suspected that the mature and old lodgepole pine stands near Caribou Flats may be utilised. This was observed with radio-collared caribou 150.332, which descended into Caribou Flats in the winter months and then continued northward to Sugarloaf Plateau, where it appeared to join a group of caribou from the Itcha Ilgachuz Herd. This Charlotte Alplands' caribou may have inadvertently been drawn into the Itcha Ilgachuz caribou migration to the calving grounds of the Ilgachuz Mountains. During the calving season it was not relocated in the alpine nor was it observed to have a calf; by the end of July, this caribou had returned to its original range south of McClinchy Lake. These observations suggest that some mixing between the Charlotte Alplands Herd and the Itcha Ilgachuz Herd may occur occasionally, at least within the vicinity of Caribou Flats. Mixing with the Rainbow Herd is also likely to occur.

Population Trends

During radio-telemetry monitoring flights in May and June of 1987, 24 and 21 caribou respectively, were observed near Trumpeter Mountain within groups containing radio-collared animals. Assuming all of the caribou within the transplanted adult groups (n=24) returned to their respective home ranges, only 17 caribou would have remained in the transplant area at that time. As such, the reported numbers suggest that some animals from the adult groups released in 1984 and 1986 likely remained within the transplant area.

A reconnaissance flight in 1989 observed 21 caribou north of Trumpeter Mountain and another in March of 1993 observed 52 caribou in three groups on windswept alpine ridges between McClinchy Lake and Mount Kappan.

Although the herd may have become more dispersed, surveys undertaken since 1993 have not recorded an increase in caribou numbers. An increase in the number of observed bulls seen between 1993 and 1999 supports the possibility that the herd may in

fact be increasing. Furthermore, only one of three active radio-collars were observed during the survey in August of 1999. However, the low calf numbers observed in both March and August of 1999 may indicate that the population is in fact declining and that predation on calves is becoming a concern. Low numbers of calves were also observed in the past two years during mid-summer surveys; total number of caribou observed in July 2001 was approximately 40% less than what was observed in the record high year of 1999. These recent results suggest that the Charlotte Alplands Herd is probably decreasing slightly or, at the least, is maintaining the present caribou population without growth.

Conclusions

A total of fifty-two caribou were transplanted to the Charlotte Alplands during five separate capture sessions between 1984 and 1991, from capture sites less than 100 kilometres away. Radio-collared caribou within the two transplanted adult groups returned to their source herds. Radio-collared caribou within transplanted juvenile groups remained within the release area. It is suspected that not all caribou from adult groups returned to the original home ranges. As a result, utilising juvenile caribou as a source stock for short distance transplants to recolonise vacant habitat appears to be a viable technique.

By 1993 the Charlotte Alplands Herd numbered over 50 caribou from a minimum source stock of 28 animals within the four transplanted juvenile groups. At that time the herd appeared to be increasing and had modest calf production. It is unclear what the population trend for the herd has been over the last half of the 1990's. Population surveys show that observed bull numbers increased but observed cow numbers declined and calf recruitment statistics, when measured, were poor. We estimate the present population of the herd is likely less than 50 animals. Although it appears the original objective of restoring a caribou population to its historical range has been a success, in the short term, it is unclear whether the herd has long-term viability.

Radio-telemetry monitoring and population surveys suggest that the herd has at least two habitat use strategies. Up to 2000, one group of approximately 20 caribou resided in the Trumpeter Mountain area year round and has been classified as non-migratory. These caribou spend the majority of the year in alpine or parkland habitats. The past two years of monitoring have suggested a south-easterly shift in distribution of the non-migratory caribou towards areas utilised by the migratory component of the Charlotte Alplands herd. The migratory component of the herd spends the summer in alpine habitats south of Trumpeter Mountain and then descends to forested habitats during winter. It is not clear where these animals spend the majority of the winter but it is suspected that the Caribou Flats area is utilised. It is possible that intermingling between the Charlotte Alplands Herd and the Itcha Ilgachuz Herd may occasionally occur within the vicinity of Caribou Flats. Mixing with the Rainbows Mountains Herd also likely occurs.

Recommendations

- Undertake population surveys every two to three years to allow for continued monitoring of the Charlotte Alplands Herd population trend.

- Expand the existing radio-telemetry monitoring program to include animals within the migratory component of the herd. This will allow for identification of important wintering areas and distribution patterns as well as improving the existing population estimate through the use of the mark-resight method.

- Maintain the existing recreational hunting closure on caribou within the range of the Charlotte Alplands Herd. In addition, discussions should be initiated with local First Nations Bands to encourage them not to harvest caribou from this herd for sustenance use.

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APPENDICES

Appendix 1. Summary of data collected from captured and translocated caribou (measurements in centimeters)

Appendix 2. Movement of radio-collared caribou monitored since March 1999 in the Trumpeter Mountain area

Appendix 3. Summary of caribou population surveys for the Charlotte Alplands