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AERIAL SURVEY OF BARREN-GROUND CARIBOU AT KAGALASKA ISLAND, ALASKA IN 2015

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INTRODUCTION

Nonindigenous barren-ground caribou (*Rangifer tarandus*) were introduced to Adak Island within the Alaska Maritime National Wildlife Refuge in 1958 and 1959 to provide sport hunting for residents of Naval Air Station, Adak, and the resultant herd subsequently grew to a stable population of approximately 300-600 animals. The closure of the naval base in 1993 corresponded with a dramatic decline in hunter harvest rates, which likely contributed to a tripling of herd size to at least 2,800 animals by 2005 (Williams and Tutiakoff 2005). Numbers were similar (between 2,512 and 2,880) in 2012 (Ricca et al. 2012b).

Ricca et al. (2012a) documented caribou sign on neighboring Kagalaska Island in 2010, and observed four caribou while working on the island in 2011. In 2012 Ricca et al. (2012b) counted three adults and one calf in a single group during an aerial survey of the island, and noted that a group of four females and one male had been seen a week earlier. Caribou and sign continued to be seen during visits to the island in 2013 and 2014. In hopes of preventing establishment of a reproductively viable resident population of non-native ungulates, the island was systematically searched on foot and circumnavigated by sea in May 2015, and all nine caribou encountered were shot. Over 1,200 lbs of meat were distributed to Adak residents; interestingly, locals were astounded by the good condition of the animals in comparison to those harvested on Adak, remarking on the size of hearts and amount of fat. This report documents results of an opportunistic aerial survey of Kagalaska conducted in September 2015.

STUDY AREA

Kagalaska (Fig. 1) is an uninhabited island in the central Aleutians, managed entirely by the Alaska Maritime National Wildlife Refuge. Encompassing 116 km^2, it is the closest large island to Adak; the two are separated by Kagalaska Strait, which is roughly 1.0 km wide on average and only 400 m wide at its narrowest point. The climate and flora of both islands are characteristically maritime. Summers are cool (5-10°C), wet and foggy, and winters are stormy but relatively warm (near 0°C). Soils are of volcanic origin. Plant communities on both islands are described as maritime tundra and characterized by graminoid meadows, evergreen heaths and deciduous dwarf shrubs. The plant growing season is relatively short and occurs primarily from June to September. Ricca (2015) provided a description of herbivore-wrought differences in vegetation, especially lichens (preferred winter forage), between Kagalaska and Adak. On Adak, caribou calve mostly on the south-central side of the island in mid-May. The distance between Adak and Kagalaska is well within a caribou's swimming ability, though not a risk-free undertaking (Ricca et al. 2012a).

METHODS

A single survey was flown from 1440-1615h on 4 September 2015 in a Bell 407 helicopter (N312MH) operated by Maritime Helicopters from Homer, Alaska and flown by Dan Leary. Survey conditions were excellent, calm and clear, with only a few high peaks obscured by clouds. We circled the island counterclockwise, mostly following landscape contours to facilitate thorough visual coverage above and below the aircraft in steep terrain. In more open areas we flew tracks separated by about a kilometer (Fig. 2). Flight speed varied with topography, and ranged from 93-130 km/h (50-70 knots) at about 90 m AGL. Total track length was 178 km. The pilot was seated in the front right side of the helicopter and acted as secondary observer. There were three primary observers. Spitler occupied the front left position and acted as observer/navigator while recording GPS coordinates, group size, and caribou trails. Two additional observers were seated in the back of the helicopter; Tutiakoff occupied the rear right position, and Christie Haupert the left rear.

RESULTS

We observed one group of eight caribou on Kagalaska, on a low ridge south of the Upper Arm of Cabin Cove (Fig. 3). The group appeared to consist of six cows or young bulls, plus two smaller animals that were most likely 4- to 5-month-old calves. We also noted several trails visible from the air, mostly traversing steep coastal slopes. Two areas of gentle terrain also had trails heading from the coast into the interior basin: one heading east along the Galas Point drainage and the other southwest from the Lower Arm of Cabin Cove (Fig. 3). A summary of all caribou surveys at Kagalaska and observations of sign and animals can be found in Appendix A.

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Figure 1. Topographic map of Kagalaska Island, Alaska, showing place names used in this report and proximity to Adak Island to the west, across Kagalaska Strait.

Figure 2. Aerial image of Kagalaska Island, Alaska, showing helicopter flight path and peaks obscured by cloud during a survey on 4 September 2015.

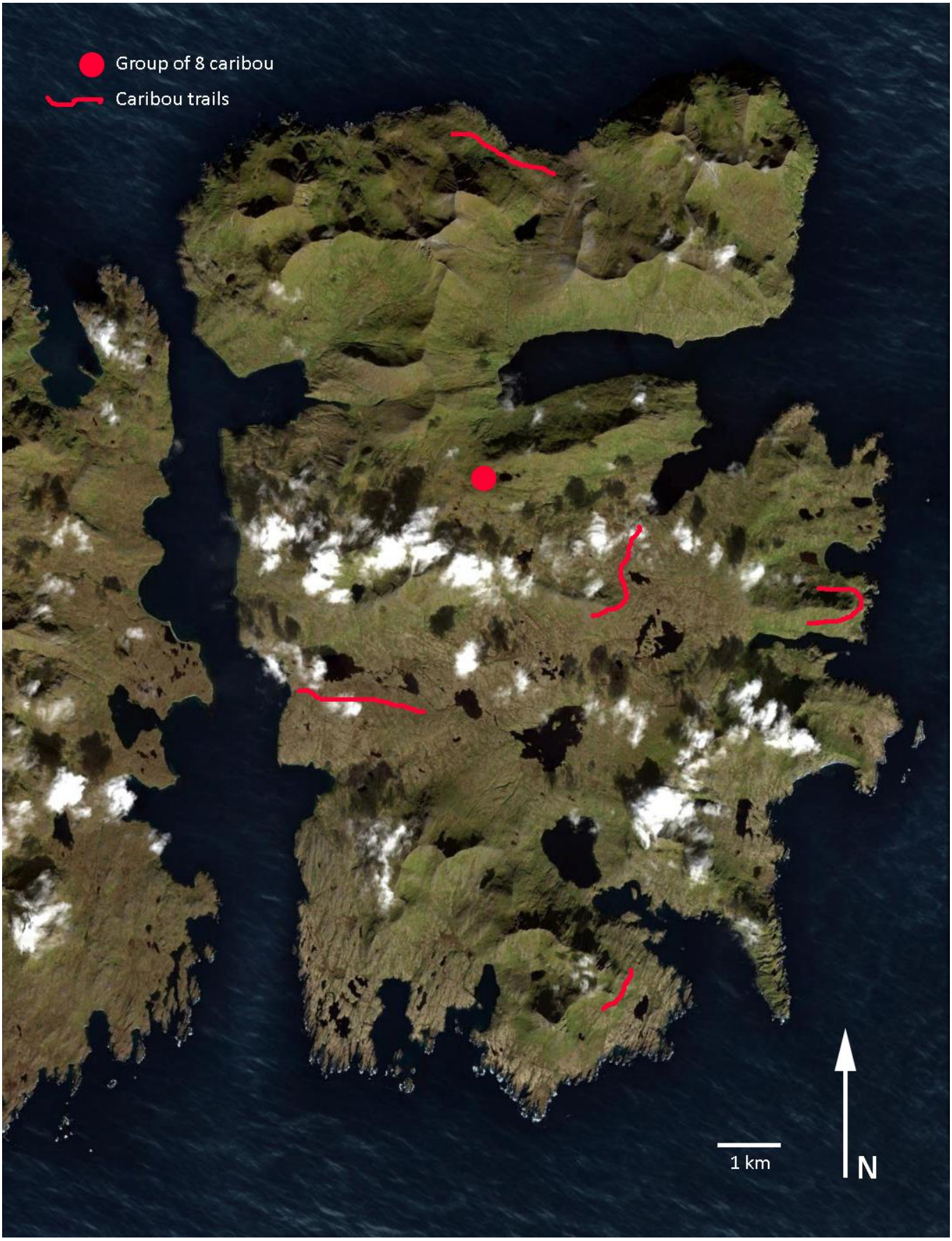

Figure 3. Aerial image of Kagalaska Island, Alaska, showing location of caribou and trails observed during an aerial survey on 4 September 2015.

Appendix A. Summary of surveys of and caribou sign observed on Kagalaska Island, Alaska, 1997 - 2015.

Year	Dates visited	Nature of visit	Caribou sign observed	Location details	Source
1997	18 Jun-4 Aug	fox eradication project	2 antler sheds, no other sign	entire island searched; sheds were found in the interior	Williams and Tutiakoff 2005
1998	13-14 Jun	fox recheck	no sign noted	entire coastline searched (for fox sign) except steep NE corner	Ebbert 1999
1999	5 Aug	fox recheck	no sign noted	east coast (north of Crater Cove to Upper Arm of Cabin Cove) beaches and slumps, plus creek emptying into Lower Arm of Cabin Cove	Ebbert 1999
2003	20 Aug	aerial survey for caribou	no sign noted	entire island surveyed; old fox trails still visible	Williams 2003
2010	Jul-Aug	control transects for Adak caribou/vegetation study	tracks, scat	central area between Galas Point drainage and Serpentine Cove	Ricca et al. 2012a
2011	Jul-Aug	control transects for Adak caribou/vegetation study	tracks, scat, grazing; 4 adult caribou observed on 15 Aug (3 bulls, 1 smaller unknown)	sign around Laska Cove and in the Quail Bay drainage; caribou in Laska Cove	Ricca et al. 2012a
2012	24-28 May	caribou search: 7 people via skiff and hiking	tracks, scat, antlers	"several places around the island"	S. Ebbert, USFWS-AMNWR, personal communication
2012	6 Jun	caribou search via R/V *Tiglax*	5 adults (1 bull, 4 cows) killed; no other animals observed	Serpentine Cove	Ricca et al. 2012b
2012	18 Jun	aerial survey for caribou	3 adults + 1 calf (<3 wks old)	above Crater Cove	Ricca et al. 2012b
2013	15 Jun	opportunistic site visit	fresh sign	Quail Bay	W. F. Pepper, USFWS-AMNWR, personal communication
2014	24-25 May	caribou search: 13 people hiking 7 routes	tracks, scat, antlers, 3 adults	all areas had at least some sign, but it was greatest in central area between Galas Point drainage and Serpentine Cove; caribou were observed in Bullseye Cove	Williams 2014
2015	25-26 May	caribou search and cull via R/V *Tiglax* : 5 people hiking	9 bulls killed; no other animals observed	3 in Bullseye Cove; 5 in Lower Arm and 1 in Upper Arm of Cabin Cove	L. A. Barto, USDA-APHIS-WS, personal communication
2015	4 Sep	aerial survey for caribou	8 caribou (6 cows or small bulls, 2 calves), some trails	caribou were observed just south of the Upper Arm of Cabin Cove	this report