ARCTIC
VOL. 70, NO. 1 (MARCH 2017)

InfoNorth

The Curious Case of King William Island, Nunavut: An Island Overlooked in Caribou Research

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INTRODUCTION

GJOA HAVEN IS A HAMLET OF 1279 PEOPLE (Statistics Canada, 2012) located on King William Island (KWI), in the Kitikmeot region of Nunavut. In Inuktitut, Gjoa Haven is known as *Uqsuqtuuq*, a place of "a lot of fat," in reference to the abundance of marine mammals and fish along the shores of KWI. However, caribou was a dietary staple for many Inuit families who moved into Gjoa Haven in the 1950s–70s from their traditional homelands along the northern mainland of Canada, and their seasonal rounds followed caribou migrations (Brice-Bennett, 1976). During a research-planning workshop in Gjoa Haven in February 2010, caribou emerged as an important local research priority (Laidler and Grimwood, 2010), which highlights the ongoing importance of caribou to local diets, livelihoods, cultural practices, and community well-being. To prepare for research in Gjoa Haven, we reviewed the literature to identify relevant caribou research previously conducted on or near KWI. What we uncovered was a paucity of caribou research related to KWI. Most studies we consulted either did not include KWI in their study area or presented data that suggested there were no caribou on the island. This came as a surprise, since Elders in the research planning meetings described caribou present on KWI year-round, as well as close by on the mainland (Laidler and Grimwood, 2010).

The lack of attention paid to KWI in the literature appears to be unique compared to other islands in the Canadian Arctic Archipelago and to barren-ground caribou herds on the nearby mainland. This essay examines available literature and reports to highlight this lack of attention to KWI in caribou research. KWI appears to have been overlooked in comparison to other islands in the Canadian Arctic Archipelago and in relation to barren-ground caribou herds on the nearby mainland. This paper is an initial attempt to identify what future work may be needed to "fill in the blank" that is KWI on most caribou maps. We share this synthesis to encourage working together to focus more attention, resources, and collaborations on understanding caribou on and near KWI.

METHODS

To understand the current status of caribou research on or near KWI, we systematically reviewed both academic and grey literature. The academic searches focused on peer-reviewed journal articles and used four electronic search databases (Science Direct, Scholar's Portal, Scopus, and Web of Knowledge) to ensure comprehensive results. The keyword "caribou" and species name "*Rangifer tarandus*" were used in various combinations with other keywords to focus on the relevant geographic scope (e.g., "King William [Island]," "Gjoa Haven," "Kitikmeot," "Nunavut," "Queen Maud Gulf"), subspecies classifications (e.g., "barren-ground" or "barrenground" or "barren ground," "Peary," "Dolphin-Union"), and herd descriptors (e.g., "Beverly," "Bathurst," "Ahiak," "Wager [Bay]," "Lorillard," and "Melville [Peninsula]"). The grey literature searches used similar search terms and included a review of government, Indigenous organization, co-management board, and independent wildlife or research committee websites to identify relevant studies and publicly available reports (Table 1). The geographic scope of our search was not limited to KWI, but encompassed two territories (Nunavut and the Northwest Territories) and three provinces (northern Manitoba, Saskatchewan, and Alberta) where the herds of potential relevance are known to be present during their seasonal rounds (Fig. 1). Our search spanned four decades of research from the mid-1970s to 2016.

Through personal communications and available literature, Gjoa Haven hunters and Elders describe trips to hunt caribou south onto the mainland as far as Back River, as well as strong family and travel connections between Uqsuqtuuq (Gjoa Haven) and Taloyoak (Spence Bay), Kugaaruk (Pelly Bay), and Qamanittuaq (Baker Lake) (Fig. 1). Therefore, six of the main barren-ground herds were considered to be of greatest relevance, namely the Ahiak, Bathurst, and Beverly herds and the three northeastern mainland herds, Lorillard, Wager Bay, and Melville Peninsula. In total, we identified 291 sources and systematically reviewed and classified them according to herd focus. A spreadsheet detailing all sources consulted and the number of sources per herd is available from the

TABLE 1. Overview of websites searched to identify relevant grey literature.

Organization type	Organization name	Abbreviation	Web address
Federal government	Environment Canada	EC	http://www.ec.gc.ca
	Committee on the Status of Endangered Wildlife in Canada	COSEWIC	http://www.cosewic.gc.ca/
Territorial government	Government of the Northwest Territories	GNWT	http://www.gov.nt.ca
	Government of Nunavut	GN	http://www.gov.nu.ca
	Nunavut Research Institute	NRI	http://www.nri.nu.ca
Co-management board	Wek'èezhìi Renewable Resources Board	WRRB	http://www.wrrb.ca
	Nunavut Wildlife Management Board	NWMB	http://www.nwmb.com
	Beverly and Qamanirjuaq Caribou Management Board	BQCMB	http://www.arctic-caribou.com
Indigenous organization	Inuit Tapiriit Kanatami	ITK	https://www.itk.ca
Independent research committee/study	West Kitikmeot Slave Study Society	WKSS	http://www.enr.gov.nt.ca/programs/biodiversity/reports-and-studies
	International Union for Conservation of Nature	IUCN	http://www.iucn.org
	CircumArctic Rangifer Monitoring and Assessment Network	CARMA	http://carma.caff.is

corresponding author. We then carefully assessed them to determine relevant content on both caribou research with specific focus on KWI or Gjoa Haven and caribou research depicting subspecies or herd ranges close to KWI. Ultimately, we included 99 documents in our analyses for this paper: 68 government/independent reports, 27 peer-reviewed journal articles or academic books, and four non–peer reviewed journal articles. From these sources, we selected 31 to include in map compilations, whereby the full herd range and calving ground extents were digitized from relevant figures to visualize the geographic scope of different herds. Only the cumulative extents of this digitization are shown (Fig. 2), along with the specific herd extents that were shown to include parts of KWI (Figs. 3 and 4).

CARIBOU RESEARCH ON OR NEAR KING WILLIAM ISLAND

King William Island is found among the central and southernmost reaches of the Canadian Arctic Archipelago, close to the mainland in the central part of the Kitikmeot Region of Nunavut (Fig. 1). Since KWI is both part of the Queen Elizabeth Islands and close to northern mainland Canada, it was anticipated that the island would be considered in caribou research involving both Peary and barren-ground subspecies. However, several comprehensive reviews of caribou range and population status did not clearly classify caribou in relation to KWI (Hummel and Ray, 2008) or even omitted KWI from consideration entirely (Calef, 1979; COSEWIC, 2004, 2011; McFarlane et al., 2009).

Calef (1979) depicted KWI, along with Boothia Peninsula, the southern coast of Victoria Island, and the northern coast of mainland NWT and Nunavut, as being in a zone of overlap between Peary and barren-ground caribou, but did not include KWI when delineating more specific barren-ground herd ranges and calving grounds. In McFarlane et al. (2009), KWI is the only island in the Queen Elizabeth Islands not included within the Peary distribution, and yet it is also not included in barren-ground caribou distributions; KWI is left blank. There is also no evidence to suggest that Dolphin-Union caribou move east or west between Victoria Island and KWI (Gunn et al., 1997; Gunn and Fournier, 2000b; Nagy et al., 2009; Dumond et al., 2013; Dumond and Lee, 2013). When it is included in sub-species analyses, KWI is most commonly associated with barren-ground caribou (COSEWIC, 2011; Festa-Bianchet et al., 2011; GN, 2011). Nevertheless, after reviewing studies with a more regional focus, we decided to discuss both Peary and barren-ground caribou.

Peary Caribou on KWI

Peary caribou have been found on KWI as well as on the northern part of the Boothia Peninsula and Victoria Island (WKSS, 2008) (Fig. 1). Hunters in Gjoa Haven have reported that Peary caribou migrated from Prince of Wales Island (PWI) to KWI in the early to mid-1970s (J. Keanik pers. comm. cited in Gunn and Dragon, 1998:17). Only a handful of "Peary-like" caribou were reported on the island in 1989, and Inuit hunters recognized both Peary-like and barren-ground caribou coming from the Boothia Peninsula and the mainland (Miller, 1991). If Peary caribou formerly migrated between PWI and KWI, the crash of the PWI Peary population in the mid-1990s (Miller and Gunn, 2003; Gunn et al., 2006) has reduced the likelihood of Peary caribou on KWI more recently (A. Gunn, pers. comm. 2011). The Boothia Peninsula, directly to the east of KWI (Fig. 1), is regularly associated with Peary caribou or a mix of Peary and barren-ground caribou (Calef, 1979; Gunn and Ashevak, 1990; COSEWIC, 2004, 2011). Hunters have noted increasing numbers of caribou wintering near

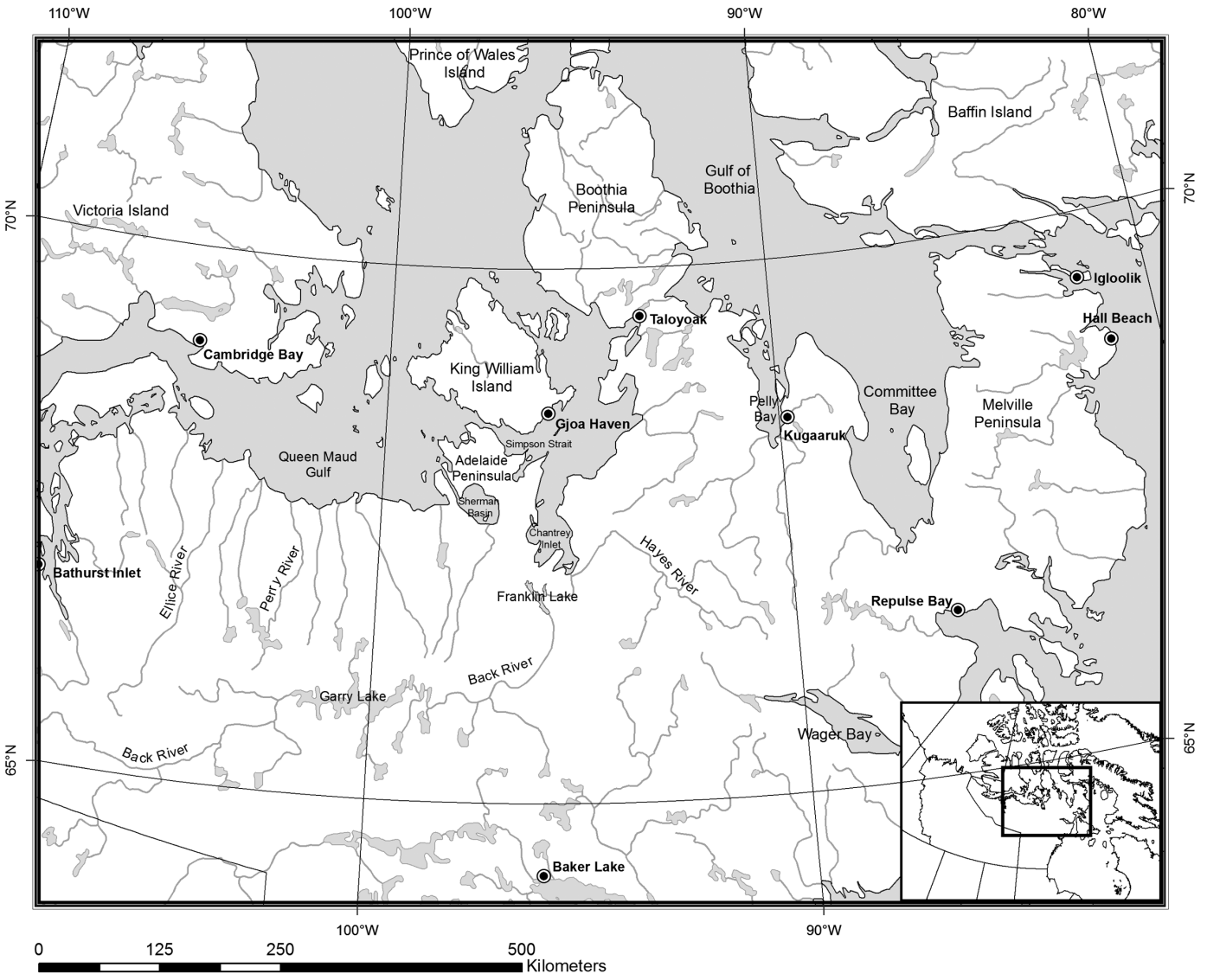

FIG. 1. Regional map showing King William Island, Nunavut and key place names referred to in the text. Source of basemap for Figures 1 to 4: GeoGratis (North American Atlas - Vector); Coordinate System - GCS_North_American_1983; Datum - North American 1983; Projection - Canada Lambert Conformal Conic.

Taloyoak since the mid-1970s (D. Tuktoo, pers. comm. cited in Gunn and Ashevak, 1990:1), and a population of Peary caribou is also known to calve on the Boothia Peninsula (COSEWIC, 2011). Although there is common movement between PWI, Somerset Island, and the Boothia Peninsula (Gunn and Ashevak, 1990; Gunn et al., 2006; McFarlane et al., 2009; Jenkins et al., 2011; McFarlane et al., 2014), there is no mention in the literature of potential east-west migrations from the Boothia Peninsula to KWI.

Barren-ground Caribou on KWI

When evaluating regional geographic delineations of barren-ground caribou herds (i.e., Ahiak, Bathurst, Beverly, Lorillard, Wager Bay and Melville Peninsula), we found a great deal of uncertainty in relation to caribou on KWI (GN, 2011; NPC, 2016a). KWI is often omitted from delineations of major barren-ground herd ranges (Calef, 1979; Calef and Heard, 1981; Ferguson and Gauthier, 1992; Heard and Stenhouse, 1992; GNWT, 2006, 2011; Dumond, 2007; Nesbitt and Adamczewski, 2009; Vors and Boyce, 2009), or the island is not clearly represented (GN, 2007a; Gunn and Russell, 2010; Gunn et al., 2011; CARMA, 2013b). For example, during Gjoa Haven consultations undertaken as part of the Nunavut land-use planning process, caribou migrations drawn in mapping sessions included KWI (NPC, 2014). However, on the Caribou Ranges Valued Ecosystem Components map created for the draft Nunavut Land Use Plan (NPC, 2016a), KWI is devoid of any of the caribou land uses depicted, including caribou rutting areas, caribou summer range, caribou late summer range, or caribou migration corridor (NPC, 2016b).

The Ahiak herd is most often associated with KWI (Campbell, 2006; GN, 2007b, 2011; Gunn et al., 2008;

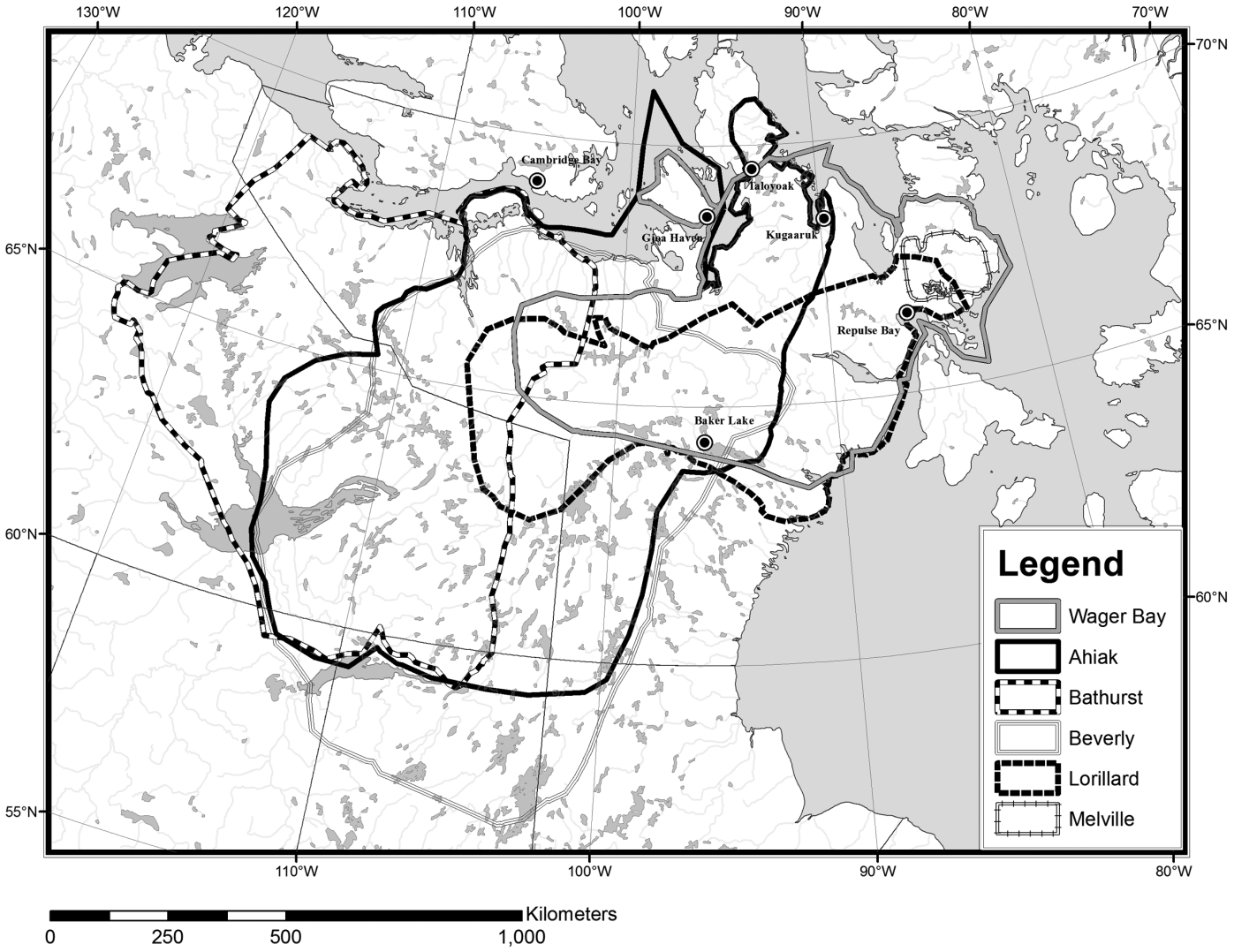

FIG. 2. Map compilation showing the maximal cumulative caribou herd range extents reported in the studies consulted. Figure 3 shows map compilations used to derive maximal extents shown here for the Ahiak herd, and Figure 4 shows those for the Wager Bay herd. Map compilations for other herds that do not overlap with KWI are available upon request from the corresponding author.

Nagy et al., 2011; Nagy and Campbell, 2012; McFarlane et al., 2016) (Figs. 2, 3), although this depiction of herd range extending onto KWI tends to be a result of statistical interpolation of satellite collar tracking data. We could not identify any caribou surveys that specifically focused on KWI. In fact, aerial surveys of the Bathurst, Beverly, Ahiak, and northeastern mainland (NE) caribou herds have been based in Gjoa Haven over the years (Heard et al., 1987; Buckland et al., 2000; Gunn et al., 2000; Johnson et al., 2008; Campbell et al., 2012), but KWI has not been included in any of the survey transects. A survey of KWI was conducted for muskoxen in the summer of 2013, but no caribou were spotted within the survey area at that time (L. Leclerc, pers. comm. 2015). Some debate exists over the status of the Ahiak herd as being distinct from the Beverly or Bathurst barren-ground herd, or both (Fisher et al., 2009; Zittlau et al., 2009; Gunn et al., 2011; Nagy et al., 2011; Adamczewski et al., 2015). However, Inuit harvesters (including Elders from Gjoa Haven) had already described the existence of this herd and noted that caribou calved on the islands along the coast of Queen Maud Gulf (CARMA, 2013a), and biologists have generally recognized the Ahiak herd as being distinct since the 1980s (Heard et al., 1987; Gunn et al., 2000, 2011, 2013; Gunn and D'Hont, 2002; GN, 2007a; Johnson et al., 2008; Adamczewski et al., 2015). Nevertheless, the Ahiak herd has generally had less priority in monitoring efforts because of its remote range and the belief that it was rarely accessible to hunters (Johnson et al., 2008; Poole et al., 2014). For example, the Ahiak herd was not included in Giroux et al.'s (2012) report regarding the availability of barren-ground caribou herds for human consumption in Nunavut. Despite the paucity of caribou surveys or satellite collar tracking specifically focused on KWI, literature describing biologists' consultations with Inuit Elders and hunters provides some

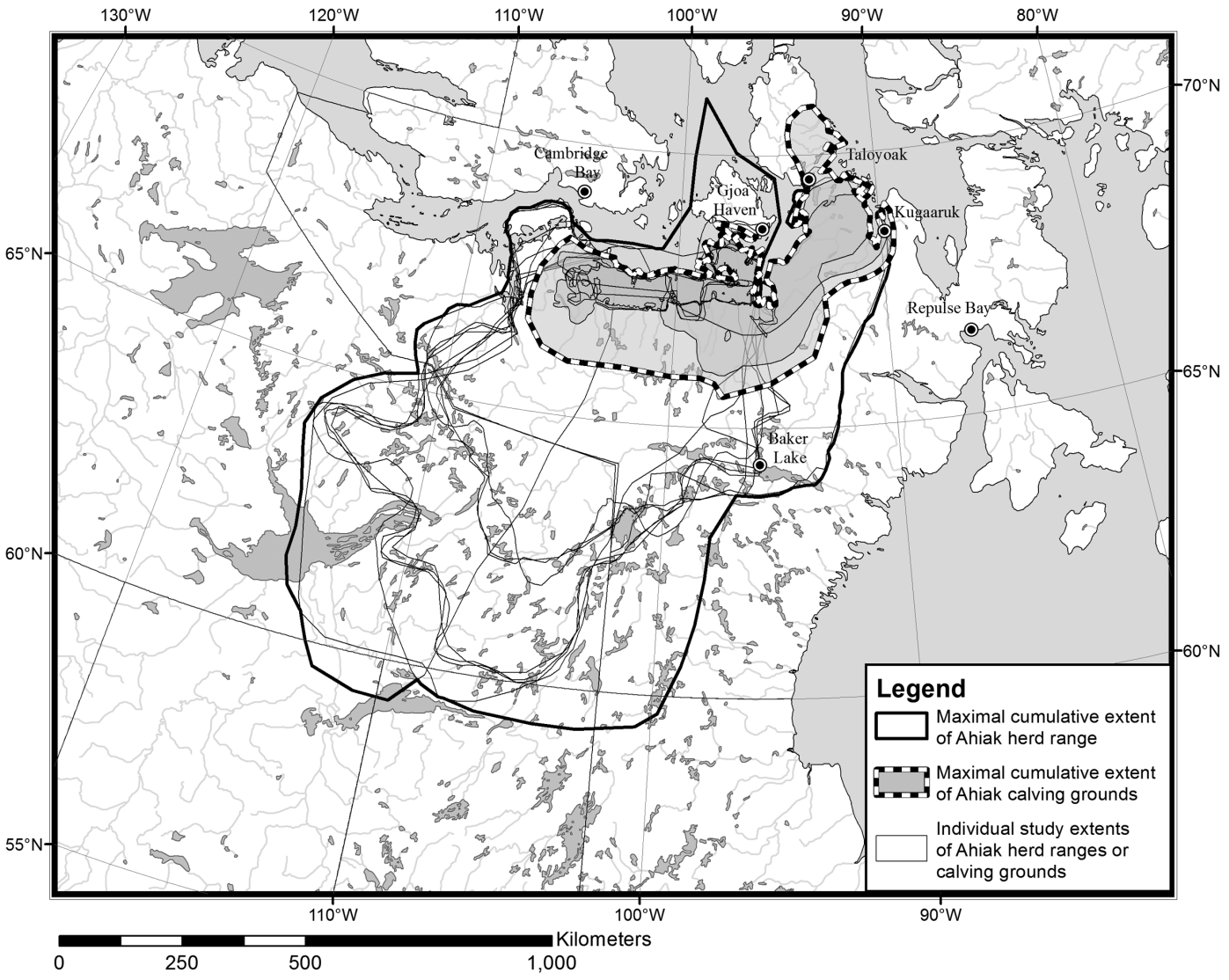

FIG. 3. Map compilation of studies depicting the Ahiak herd range and calving grounds. Map sources used to create the Ahiak herd map compilation are available upon request from the corresponding author.

context related to historical and current caribou presence or movements to and from the island.

According to Elders in Gjoa Haven and some historical reports, caribou once calved in the interior of KWI (Gunn and Fournier, 2000a; Gunn et al., 2000, 2013), as well as on the islands along Queen Maud Gulf (Gunn and Fournier, 2000a). Miller (1991) also describes KWI and nearby smaller islands as having once supported large numbers of caribou presumed to have migrated from the mainland. This migratory caribou population was said to have summered on KWI and wintered on the mainland, migrating back and forth across Simpson Strait, which separates KWI and the Adelaide Peninsula, and providing seasonal hunting opportunities for the community of Gjoa Haven (Brice-Bennett, 1976; Gunn et al., 2000, 2013) (Fig. 1). More recently, radio-collared cows from the Ahiak herd have been shown to use the Adelaide Peninsula in the summer (Gunn et al., 2000). Despite limited sightings of cow-calf pairs on KWI, Gunn and Fournier (2000a) conclude that not enough data exist to definitively call KWI a calving ground. Gunn et al. (2013) also provide an overview of shifting Ahiak calving grounds while exploring potential geographic influences on sub-population structure. Although there is no regulation of caribou harvesting in the area, harvest studies have been undertaken that identify residents of Gjoa Haven as hunting the Ahiak and NE mainland (Wager and Lorillard) herds (Gunn et al., 2000; GN, 2007a, b).

Gunn et al. (2000) did not include KWI in the aerial or satellite tracking surveys of caribou in Queen Maud Gulf depicted in their report; however, these authors summarize a compilation of fragmentary historical accounts about caribou in the Adelaide Peninsula and Queen Maud Gulf area in their Appendix G. These accounts include observations from the late 1800s of a) caribou migrating to KWI in May, calving in the interior of the island, and

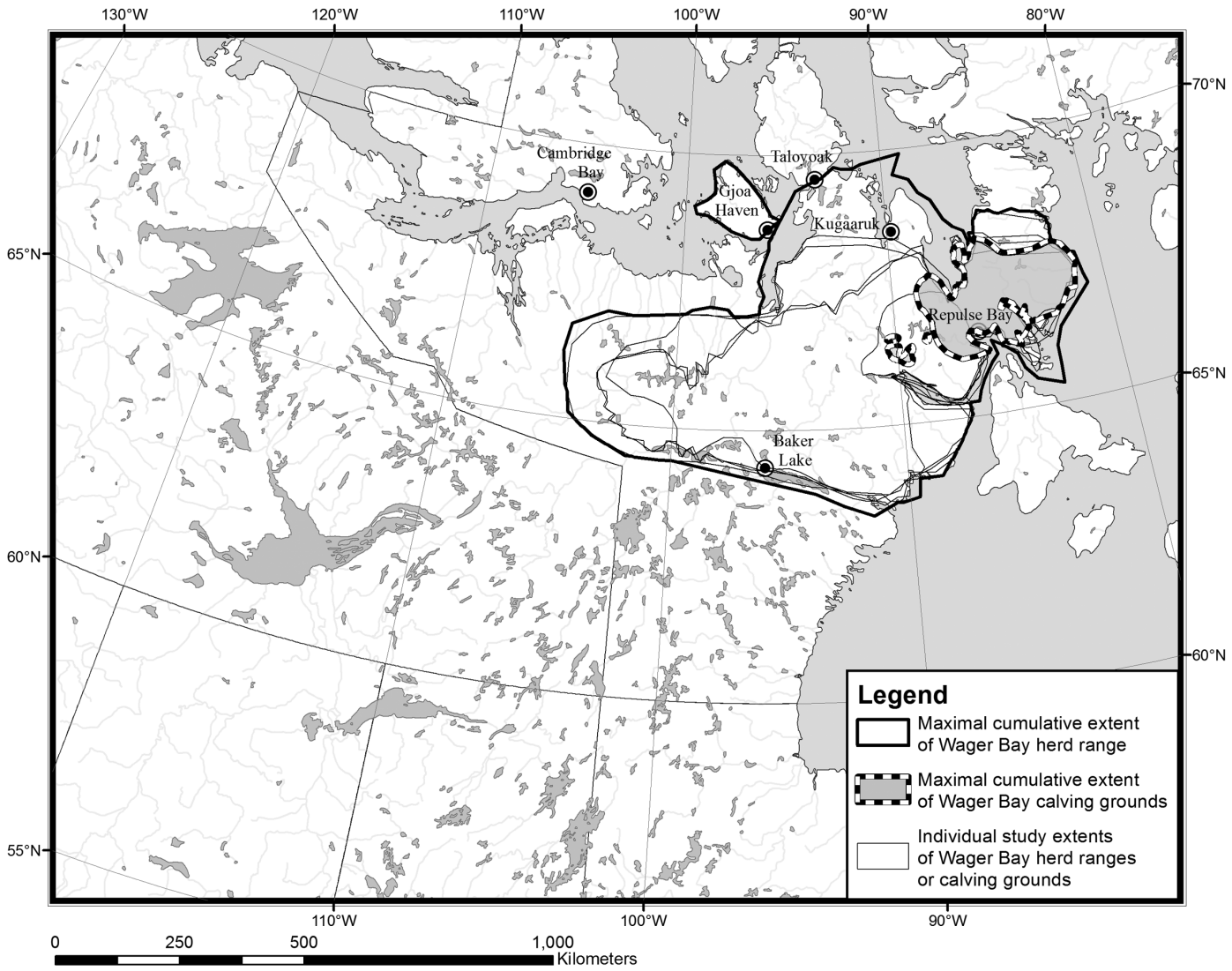

FIG. 4. Map compilation depicting the Wager Bay herd range and calving grounds reported in the studies consulted. Map sources used to create the Wager Bay herd map compilation are available upon request from the corresponding author.

moving to the coast in June and July; b) Netsilingmiut hunting caribou in August in the interior of the Adelaide Peninsula; and c) large numbers of caribou gathering near the coast of the Adelaide Peninsula and moving away in September. Furthermore, the southeast of KWI was referred to as "a caribou hunter's Eldorado" by Klutschak (1987:117), as Netsilingmiut would harvest caribou that had gathered on the southern coast of the island as they waited for the strait to freeze over in autumn. This migration to and from KWI reportedly began to dwindle in the 1920s (Brice-Bennett, 1976) and apparently ceased by the 1930s (Miller, 1991; Gunn et al., 2000). A potential cause of this decline in caribou on KWI may have been the increased use of firearms for hunting (Brice-Bennett, 1976; Gunn et al., 2000), which led to a dramatic increase in harvesting success rates, and was potentially compounded by the effects of severe weather in the mid-1920s (Gunn et al., 2000).

From the 1930s onwards, reduced (and in some years, non-existent) migrations to KWI had considerable impact on Inuit wintering on KWI, including cases of starvation (Gunn et al., 2000). However, people adapted by incorporating additional winter trapping or summer fishing into their harvesting practices, as well as traveling extensively to hunt caribou along the mainland coast (as far inland west as Ellice River, south to Back River or Garry Lake area, east to Pelly and Committee Bays, and northeast onto the Boothia Peninsula) (Brice-Bennett, 1976; Gunn et al., 2000) (Fig. 1). In 1927 a Hudson Bay Company trading post was established in Gjoa Haven (Brice-Bennett, 1976), and by the 1960s Inuit had begun to concentrate in the settlement, so a less extensive area was used to hunt caribou (Gunn et al., 2000). However, local residents still traveled to the Adelaide Peninsula, south to Franklin Lake, and from the Back River to the Hayes River area in the 1960s and 1970s (Brice-Bennett, 1976; Gunn

et al., 2000) (Fig. 1), and these hunting routes continue to be used today. Although not mentioning KWI specifically, representatives from several Kitikmeot communities have described a widespread reoccupation by caribou of the Kitikmeot region, especially for winter ranges (pers. comm. from Pelly Bay [C. Niptayok], Spence Bay [D. Tucktoo], and Gjoa Haven [B. Konana], cited in Gunn and Ashevak, 1990:22–23). These descriptions likely reflect increased observations of caribou numbers in the 1980s returning to areas not used since the 1930s–50s, including KWI, Queen Maud Gulf, and Adelaide Peninsula (Gunn and Fournier, 2000a; Gunn et al., 2000). COSEWIC (2004) also noted (citing a personal communication from D. White in 2004) that hunters were observing mainland caribou to be crossing from Queen Maud Gulf only within the last few years, and that they were increasing in numbers annually.

It is certainly possible that Gjoa Haven hunters are traveling to the NE mainland to hunt Wager Bay, Lorillard, or Melville Peninsula caribou herds, but with few surveys of caribou in the region, there is no clear evidence to suggest that these herd distributions extend to KWI (e.g., Calef and Heard, 1981; Calef and Helmer, 1981; Donaldson, 1981; Campbell, 2006; GN, 2007b, 2011; Gunn and Russell, 2010; Gunn et al., 2011; Nagy et al., 2011; Nagy and Campbell, 2012) (Fig. 2). KWI is not included in the research strata delineated by Heard et al. (1987) or Buckland et al. (2000) for their survey of NE mainland caribou; however, Buckland et al. (2000) and GN (2007a, b) include Gjoa Haven, along with Repulse Bay, Chesterfield Inlet, Taloyoak, Kugaaruk, Igloolik, Hall Beach, and Baker Lake, Nunavut) in the eight communities of this region for whom caribou are a mainstay. In a broad overview discussing concerns related to caribou population declines in the Canadian Arctic, Gunn and Russell (2010) depict the Wager Bay herd range as extending westwards to encompass the entire KWI (Fig. 4). However, KWI is not actually labelled in the map provided, the shading is unclear, and there is no specific discussion of KWI in the article, making it uncertain if it is indeed the Wager Bay herd being depicted as related to KWI. Linking aerial survey observations and hunter observations from Igloolik, Nunavut, Ferguson and Vincent (1992) suggest the possibility of east-to-west movements of caribou on northern Melville Peninsula in the late winter (Fig. 1). Hunters have also reported irregular crossings between northern Melville Peninsula and northern Baffin Island, emphasizing that the direction, timing, and frequency of these movements vary from year to year (Ferguson and Vincent, 1992). Campbell (2005) shows the movements of 10 collared cows from the Wager herd; these animals ranged onto the Boothia Peninsula and to the south of KWI on the mainland (Fig. 4). There is no direct evidence to support use of KWI by the NE mainland herds, but the proximity of these herds to KWI and the extensive range of hunting in this region make east-west movements from Melville Peninsula and Boothia Peninsula to KWI a possibility that bears further investigation.

Available survey results indicate significant overlap of calving grounds for the Bathurst and Ahiak herds in some years, especially on the eastern side of Bathurst Inlet (e.g., Heard and Stenhouse, 1992; Gunn and D'Hont, 2002; GNWT, 2006; Dumond, 2007; GN, 2011; Nesbitt and Adamczewski, 2009; Gunn et al., 2011; Nagy et al., 2011) (Figs. 1, 2). However, the range of the Bathurst herd tends to extend westward and southward from the calving grounds, with no indication of a herd distribution that includes KWI. There is also considerable overlap between the ranges of the Ahiak and Beverly herds (e.g., Ferguson and Gauthier, 1992; BQCMB, 1996, 2014; GN, 2011; Gunn et al., 2011; Nagy et al., 2011; Nagy and Campbell, 2012) (Fig. 2). Nevertheless, there is no documented evidence to show Beverly ranges extending onto KWI.

CONCLUSIONS

From our review of available academic and grey literature, KWI appears to be a curious case of an island overlooked in caribou research. We identify a paucity of published information regarding caribou on KWI, but this is not to suggest that there are no caribou on KWI. As historical and contemporary sources indicate, the caribou are there and have been there for many decades, although with seasonal and annual fluctuations. However, KWI (along with the NE mainland) has been surveyed for caribou only infrequently, and researchers have not engaged in community consultations sufficiently to understand caribou presence and migrations from Inuit perspectives (i.e., those of hunters who are harvesting caribou seasonally or year-round). There is potential on KWI for the presence of Peary caribou, but the island's most likely association is with barren-ground herds crossing to and from the mainland during seasonal rounds and when ice, weather, and forage conditions permit (Fig. 2). Of these, the Ahiak herd is most often associated with KWI (Fig. 3), although typically in a tangential fashion (i.e., by references in the text, personal accounts, or as a result of statistical interpolations). Ahiak herd ranges also overlap extensively with those of the Bathurst, Beverly, Wager Bay, Lorillard, and Melville Peninsula herds (Fig. 2), and thus these herds may be of importance to Gjoa Haven hunters even if maps do not show their herd ranges extending to KWI (with the exception of Wager Bay, see discussion above).

Although small herds may be present on KWI, they are not yet designated because of the lack of surveys and monitoring resulting from the prioritization of mainland herd research (i.e., larger herds), government budgetary and staff constraints, and the high costs of working in remote regions (Chalmers, 1989; Gunn et al., 2008; Johnson et al., 2008; Poole et al., 2014). Only Peary and Dolphin-Union caribou subspecies have been formally assessed by COSEWIC (2004). The caribou on KWI and other nearby islands close to the Boothia Peninsula are characterized as

having uncertain taxonomic status, potentially comprising a mixture of Peary, Dolphin-Union, and barren-ground caribou (COSEWIC, 2004). In COSEWIC (2011:82), the map of "Designatable Units for Caribou" includes KWI as part of the Barrenground Designable Unit (DU3), although it is unclear how KWI would be associated with the recognized herds listed as DU3 in Appendix 1. COSEWIC has recently conducted a comprehensive assessment of barren-ground caribou and is preparing a status report that may help remove some uncertainty about caribou on KWI, but the report will not be finalized or publicly available until fall 2017 (COSEWIC Secretariat, pers. comm. 2017).

Because we can glean so little about caribou on KWI from the available academic and grey literature, we suggest that a natural and important follow-up strategy would be to engage in closer research collaboration with local and Inuit caribou experts in Gjoa Haven and nearby communities and to design new caribou surveys targeting KWI.

From the personal communications with Inuit hunters cited in various biological publications and reports, it is clear that biologists have been speaking with and learning from Inuit for many years (e.g., Gunn and Ashevak, 1990; Gunn and Dragon, 1998). The challenge is to share the details of these conversations in technical reports and make systematic efforts to engage Gjoa Haven community members in such research. We recommend that more specific caribou studies be designed in collaboration with Inuit Elders and experienced hunters in Gjoa Haven (and other nearby communities such as Taloyoak and Kugaaruk) to learn from Inuit knowledge based on current and historical hunting practices about caribou on and near KWI. Local experts and hunters have long-term experiential knowledge of caribou subspecies, health, migrations, behaviour, and ecology that extends across seasons and decades (Ferguson and Messier, 1997; Thorpe, 1997; Thorpe et al., 2001; Dumond, 2007; Kendrick and Manseau, 2008; Nirlungayuk, 2012; Pokiak, 2012). This knowledge would help address financial, temporal, and spatial limitations typical of aerial or satellite telemetry monitoring (Gunn and Ashevak, 1990; Gunn, 1996; BQCMB, 1999; Gunn and Fournier, 2000a; Campbell, 2005), as well as support Nunavut's territorial goals of more inclusive and balanced contributions to caribou co-management drawing from Inuit and scientific knowledge (GN, 2011).

Along with more collaborative Inuit knowledge studies, we recommend that future aerial surveys or ground monitoring programs be specifically designed to monitor caribou on KWI. In practice, we realize this is challenging and requires careful budget and staffing allocations. However, if the aircraft, pilots, and observers hired for herd-specific aerial surveys are already based in Gjoa Haven (as they have been previously for surveys of the Ahiak herd on the northern mainland), including strategic transects or full coverage of KWI as part of a larger survey may be an opportunity for economic and scheduling efficiency. Similarly, aerial surveys being conducted for other wildlife species on KWI might provide an opportunity to record caribou observations as well.

Trying to fill the gaps in our knowledge and bringing together associated results from each of these recommendations could provide a much stronger basis for evaluating caribou population trends on KWI. Research designed to investigate connections between mainland caribou populations and caribou numbers on KWI, related fluctuations over time, and their possible causes would be of great interest. Such research would also help to clarify whether caribou other than those of the Ahiak herd occasionally migrate onto KWI. Attempting to address these herd and migration linkages would likely involve new targeted population studies, new evaluations of historical and current literature showing herd population trends, and more systematic and comprehensive consultations with Inuit Elders and hunters. Given the lack of emphasis on KWI in the available literature, it is difficult to assess long-term population trends related to KWI or the environmental or anthropogenic influences that have affected caribou residency on the island. However, a more integrated approach could begin to explore this complexity, reflecting a more comprehensive and community-relevant picture of caribou populations and ranges, with the ultimate goal of supporting balanced and locally grounded co-management decisions. We hope that identifying KWI as an island overlooked in caribou research is a first step in encouraging government and research biologists to pay more attention to KWI and to work together with Inuit Elders, hunters, and community members to expand our collective understanding of caribou herds in this region.

ACKNOWLEDGEMENTS

We are grateful to the Elders and community representatives for their support expressed during research planning workshops held in Gjoa Haven, Nunavut, in February 2010. Their knowledge and guidance sparked the literature review process shared here and continue to inspire and guide our ongoing collaborative caribou project. We thank the Social Sciences and Humanities Research Council (SSHRC) for the Standard Research Grant that enabled the completion of this paper and supports our community-based research. We are grateful to Anne Gunn, Lisa-Marie Leclerc, Sean Robertson, and several anonymous reviewers for their time and thoughtful feedback in reviewing earlier versions of this paper. We also thank Stephanie Pyne for reference support and Alex dePaiva for creating Figure 1 and formatting final references.

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