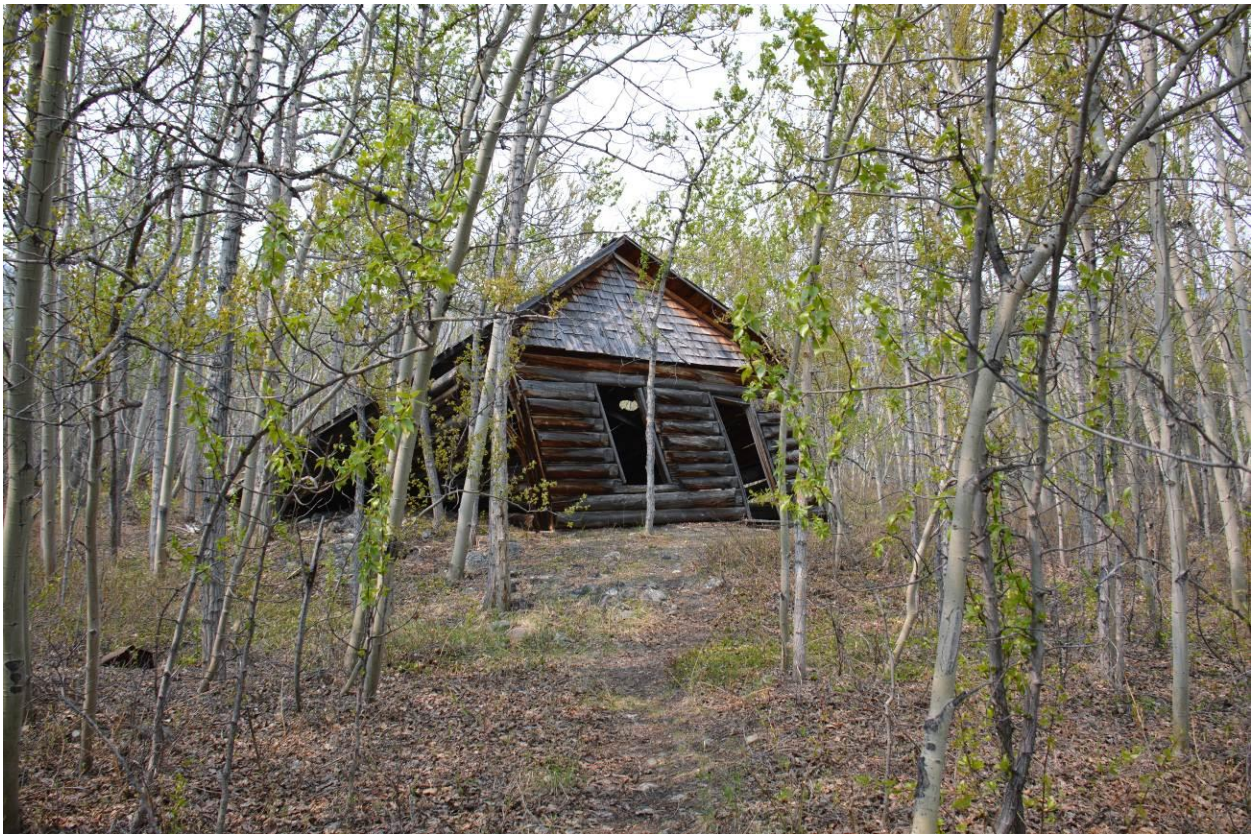
CONRAD CAMPGROUND RESERVE:
IDENTIFICATION OF WILDLIFE VALUES AND SUMMARY OF POTENTIAL IMPACTS OF CAMPGROUND DEVELOPMENT



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Yukon
Environment

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CONRAD CAMPGROUND RESERVE: IDENTIFICATION OF WILDLIFE VALUES AND SUMMARY OF POTENTIAL IMPACTS OF CAMPGROUND DEVELOPMENT

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Fish and Wildlife Branch
SR-14-02

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Preamble

Environment Yukon (Fish and Wildlife Branch, Environmental Programs Branch, and Parks Branch) and the Carcross/Tagish First Nation (CTFN) conducted a joint site visit to the Conrad Campground Reserve and Historical Site ("the Project site") on 27 May 2014. The primary objective of the site visit was to investigate and document use of the Project site by wildlife. Terrestrial resources are discussed herein, but fisheries resources are not considered.

Site Description

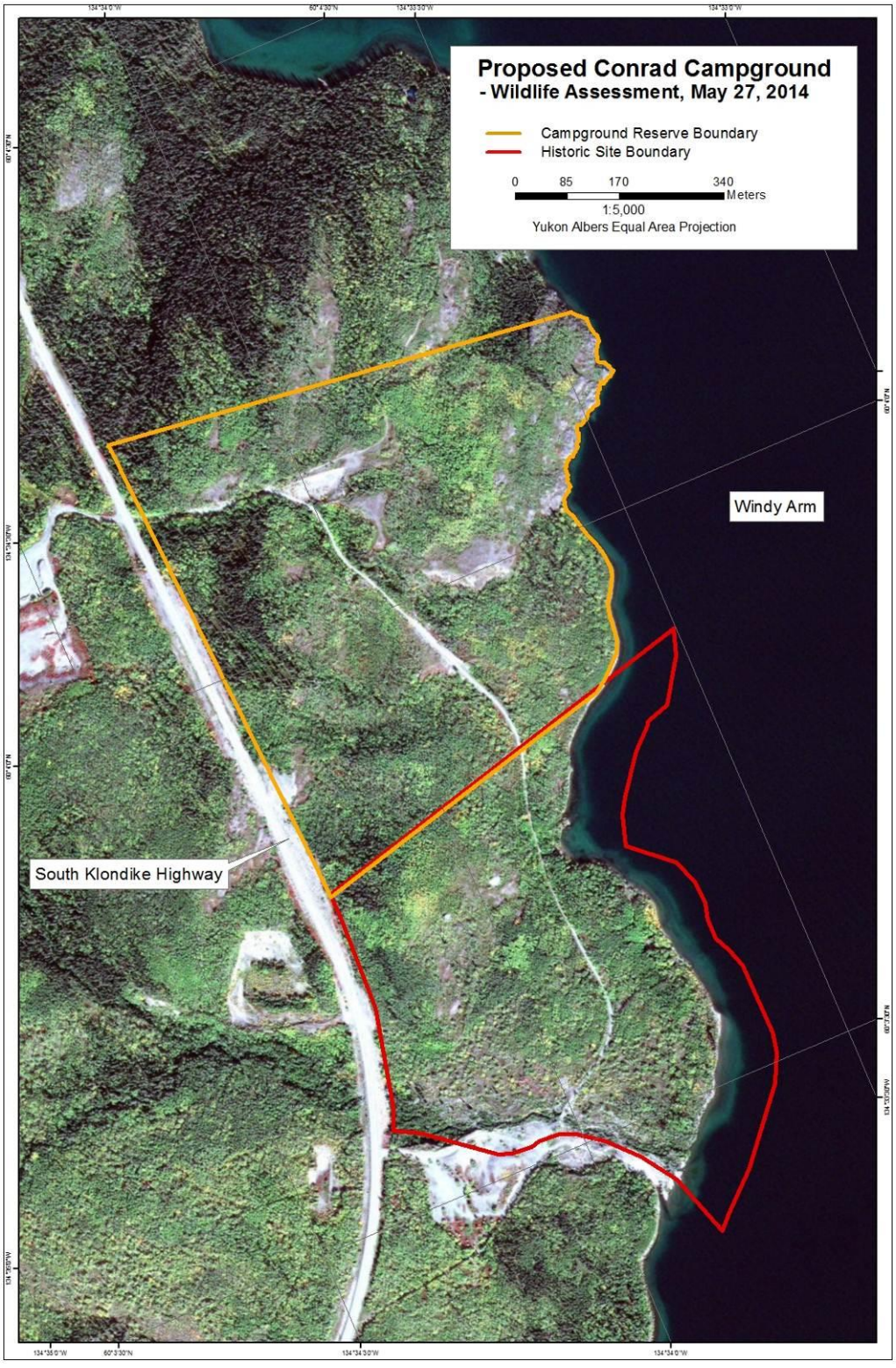
The Project site is located in southern Yukon, south of Carcross, and accessible by the South Klondike Highway. The Project site is bounded by the South Klondike Highway to the west and Windy Arm of Tagish Lake to the east (Map 1). The site contains mostly stunted aspen forest on varying topography, with a spruce/fir stand near the highway and some willow/aspen regrowth on previously disturbed areas adjacent to Montana Creek in the southern portion of the historic site. The shoreline is a combination of windswept slopes dominated by kinnickinnick, and lowland aspen stands.

Methods

Caribou Use and Lichen Cover – The entire site was surveyed using a transect that intersected all major habitat types. The ground was scanned for 1–2 metres on either side of the transect, looking for caribou sign and noting locations of abundant lichen ground cover.

Preliminary Risk Assessment for Bear-Human Conflict – At 100-m intervals along the aforementioned transects, 4 m^2 plots were used to quantify the abundance of primary bear forage species. These species included crowberry (*Empetrum nigrum*), soapberry (*Shepherdia canadensis*), low-bush cranberry (*Vaccinium vitis-vidaea*), blueberry (*Vaccinium caespitosum*), bear root (*Hedysarum alpinum*), and locoweed (*Oxytropis campestris*). Other focal bear forage species included bearberry (*Arctostaphylos rubra*), high-bush cranberry (*Viburnum edule*), rose (*Rosa acicularis*), horsetail (*Equisetum arvense*), kinnickinnick (*Arctostaphylos uva-ursi*), fireweed (*Chamerion angustifolium*), and river beauty (*Epilobium latifolium*). Forage species abundance was quantified by percent cover, using 4 categories: 0–25%, 26–50%, 51–75%, and 76–100%.

In addition to quantifying the abundance of forage species observed on the Project site, the geographic context of the location must be considered when assessing the Project site's potential for bear-human interaction.



Map 1. Location of the proposed Conrad campground.

Results

Caribou Use and Lichen Cover – Caribou sign was not observed at the Project site. Lichen cover was almost non-existent throughout the site. The habitat within the Project site should be considered low quality winter range for caribou. The lack of caribou sign and the lack of ground lichen suggest the Project site does not provide for critical caribou life functions.

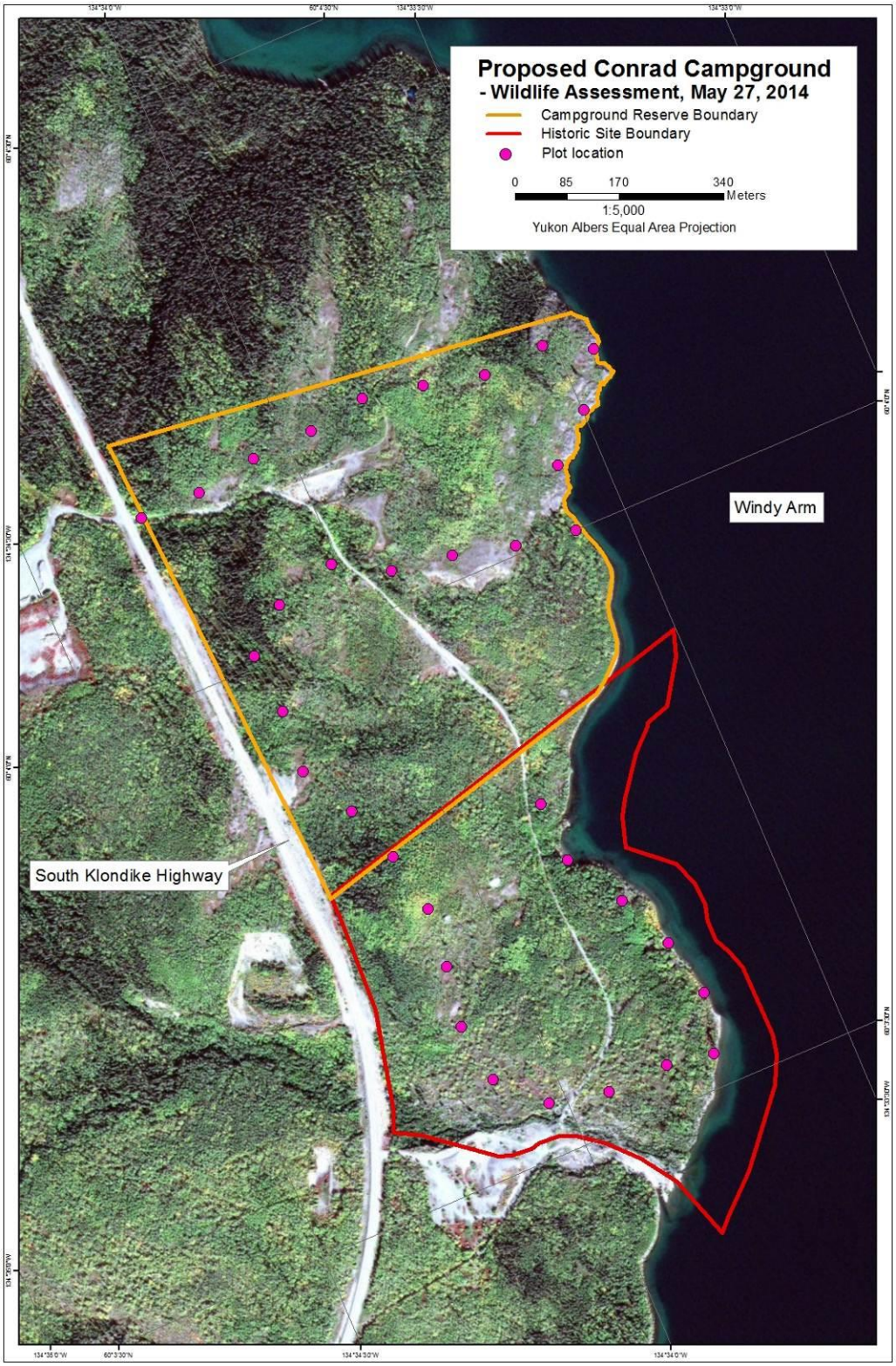
CTFN Environmental Monitors indicated the site does not provide habitat for caribou. However, caribou may move through the area during winter, likely along the lakeshore.

Preliminary Risk Assessment for Bear-Human Interaction – Due to the time of year, most non-woody stemmed plants were not in season, and thus were not identifiable. Bear root, locoweed, and river beauty are likely under-represented in our survey due to time of year.

Forage species were quantified by percent cover at 35 plots within the Project site (Map 2). The transect meandered through the Project site, and observers attempted to representatively sample all available habitat types. The most frequently observed forage species were kinnickinnick and soapberry, which were encountered at 25 and 24 sites, respectively. Kinnickinnick dominated south-east facing, windblown slopes, and was present in most habitat types. Soapberry was the dominant understory species in aspen forest, the most abundant forest type on site (represented by the light green forest in Map 2; coniferous is represented by dark green). High-bush cranberry was only observed at 5 sites, and seemed to be more abundant in patches near the highway.

A cursory examination of satellite imagery for lands adjacent to the Project site indicates that aspen forest cover is prevalent along the north shore of Windy Arm (aspen is represented by the light green colouration in Map 2). Using aspen forest cover as a proxy for soapberry suggests that this forage species is also prevalent on lands adjacent to the Project site, indicating that the Project site is not unique in this regard, and is representative of the bear forage availability in the general vicinity.

In addition to preferred forage species, there are some contextual landscape cues that should be considered. Riparian areas, such as the shore of Windy Arm, are known to be used by bears as travel routes. Also, there is a bottleneck effect in this area, as bears will be naturally funnelled between Windy Arm to the east and the mountains to the west. The Project site directly overlaps this bottleneck area, likely increasing the probability of encountering bears in the area.



Map 2. Locations of the 35 bear forage plots that were surveyed.

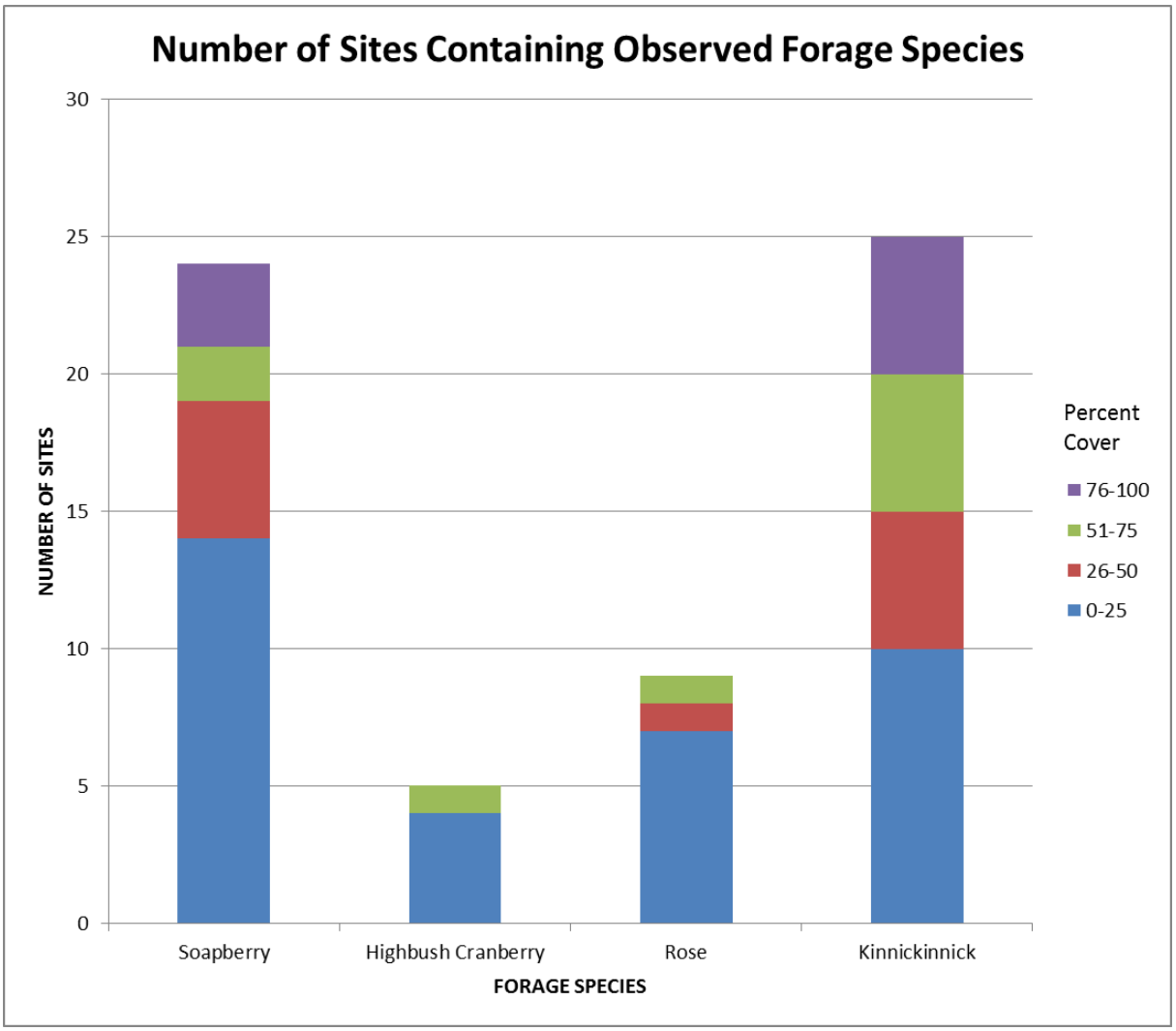


Chart 1. Number of sites containing observed forage species. The colours represent the number of sites where each of the 4 categories of percent cover were observed.

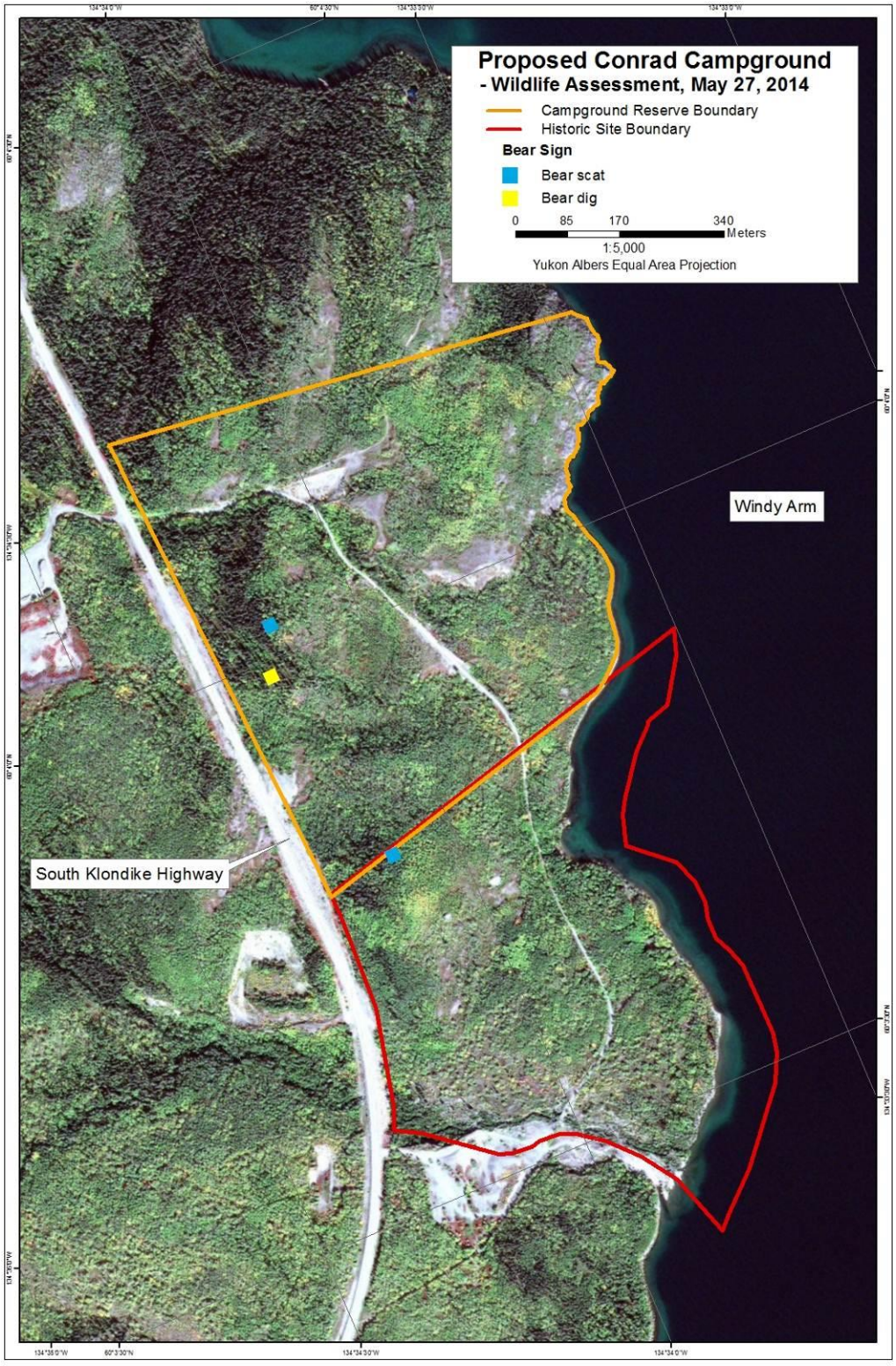
Photo 1. Abundant soapberry present in aspen forest.

Photo 2. Abundant kinnickinnick on south-east facing slope.

Photo 3. Abundant high-bush cranberry in aspen forest.

Bear digs, presumably to access bear root the previous fall, were observed at one location in the Project site (Photo 4). Fresh bear scat was also observed (Map 4). Anecdotal observations from area residents indicate a grizzly bear has been observed several times on the Project site and in the vicinity.

Photo 4. Bear digs observed on the Project site.



Map 3. Bear sign observed during the site visit.

Moose Use – While moose were not the primary focus of the site visit, some incidental moose information was collected. Due to the habitat composition at the site, including abundant aspen and willow, there is ample browse available on the Project site. These habitats contained moose pellets from this past winter (Map 4).

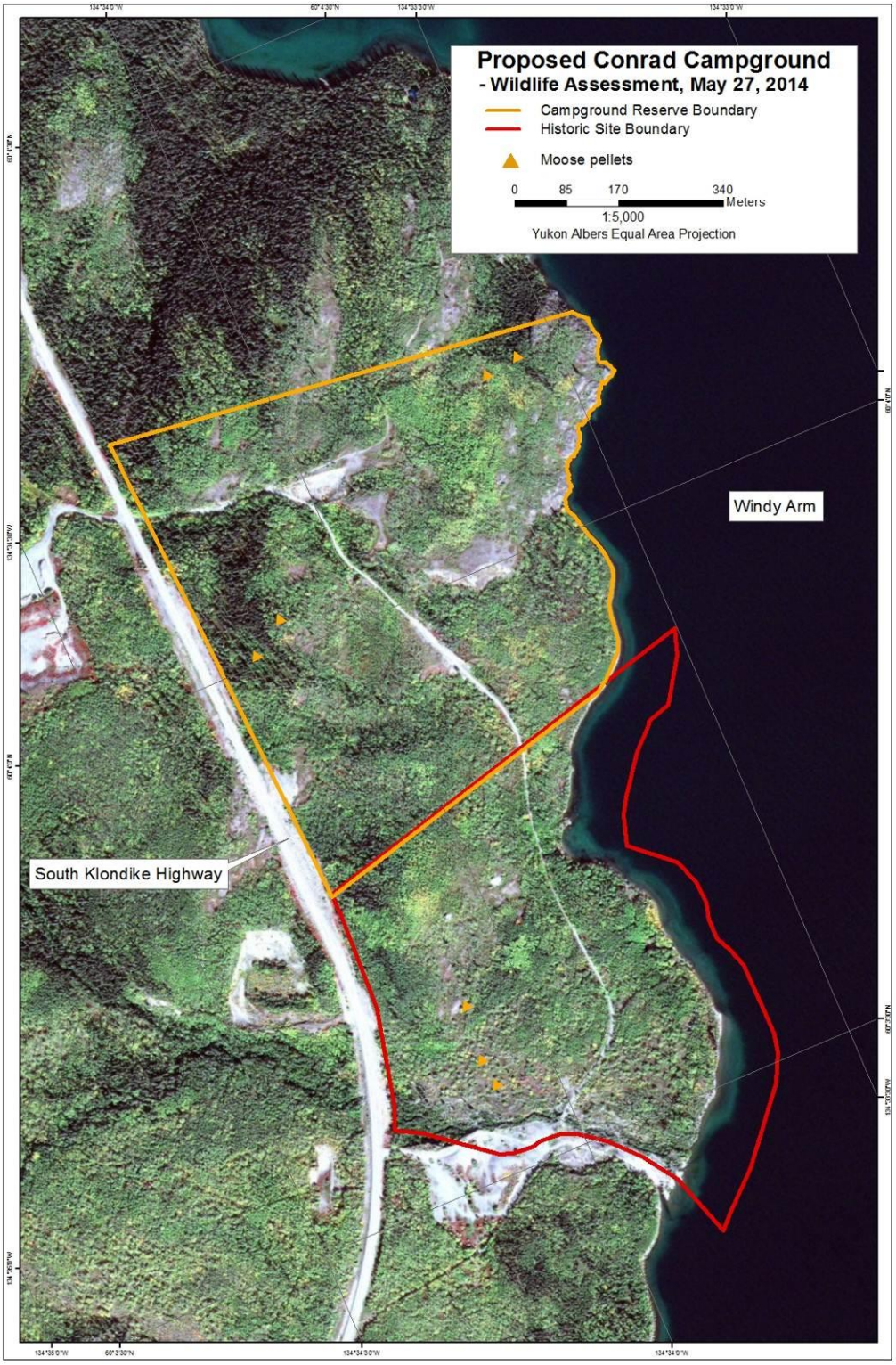
As mentioned previously, the Project site also contains small stands of mature white spruce trees mixed with subalpine fir. Coniferous forest provides thermal cover for moose, as well as reducing ground snow cover. However, the size of the available coniferous stands, especially compared to neighbouring forests, suggest thermal cover is of limited value on the Project site, especially because the area is known for high winds. The abundance of available forage indicates the Project site is of value to moose, but it is not characteristic of high quality late-winter moose habitat. Due to the access of forbs, sedges, and aquatic vegetation along the lake shore, moose likely also use this area during the summer and fall.

CTFN Environmental Monitors indicated that there are often moose using the Project site over the winter, but in general moose densities in this area are low, and development of the campground is unlikely to have significant adverse effects on the moose population.

Goats – Goats are not usually observed from the Project site, although they frequent cliffs further south towards the BC border. Goats are not known to use this site for any life functions.

Furbearers – Beaver sign was observed near the lakeshore. Aspen is a food source for beaver, and several smaller trees had been removed along the lakeshore. No beaver lodge was observed at or near the Project site, and the location of the winter food cache is unknown.

Human Use – Human use of the Project site is abundant and obvious, from makeshift campsites to the remnants of historical industrial activities. The access road is well used, and several members of the public were observed on the Project site during the site visit. The Project site is well known due to the abundance of unofficial campsites and the scenic location. Due to the abundance of human activity, and the popularity of the Project site with the public, data on human use was not collected.



Map 4. Moose sign observed at the Project site.

Discussion

Caribou Use – The Project site contains low quality caribou winter range, and no caribou sign was observed. Development of this land parcel into a territorial campground will result in largely seasonal use, as tourists and residents will use the facilities during the camping season (late May to early September). Development will result in clearing of some of the forest to accommodate campground infrastructure but vegetation clearing and associated disturbance will have minimal impact on caribou, based on the lack of caribou sign and the lack of suitable winter range. Winter use of this site and the general surrounding area is not likely to increase after campground development, as there is an existing access road to the Project site.

Preliminary Risk Assessment for Bear-Human Conflict – There is a combination of several factors that suggest development of the Project site into a territorial campground would result in a high potential for bear-human interaction. These factors include the natural tendency of riparian areas to be movement corridors for bears, the landscape features that may naturally funnel bears between Windy Arm and the mountains to the west (and thus through the Project site), and a high prevalence of preferred forage species present on the Project site, namely soapberry. The high potential for bear-human interaction may result in increased bear mortality. This is of particular concern for grizzly and black bears in the Southern Lakes area, where both species are experiencing high human-caused mortality.

Although sampling methods under-represent the prevalence of bear root on the Project site, the presence of bear digs indicates that bear root is also likely present. This food resource tends to be very localized, and further ground surveys should be conducted to examine the availability of bear root on the project site.

Some recommendations for mitigation are available in MacHutchon's (2013) risk assessment that was conducted for the proposed Atlin Lake Campground, however, a site-specific risk assessment is needed for proper design and planning of the campground. The implementation of appropriate mitigations will help reduce the human-bear interactions associated with the Project site, but there are likely no mitigations that will eliminate human-bear interactions at this geographic location.

Recommendations:

- A site-specific bear-human interaction risk assessment should be conducted for proper design and planning of the campground.
- Additional ground surveys should be conducted, looking specifically for forage species that are possibly present (e.g. bear root, locoweed, river beauty), but were not encountered due to the timing of the field work.

Moose Use – Information collected during the site visit suggests the Project site is moderately used by moose over the winter and likely during the summer and fall. Development of the campground will result in canopy openings that will promote secondary species growth, such as willow and other shrubs. While there will be net habitat loss created by the clearings, new growth created by canopy openings will still provide forage. Due to the seasonal use of the campground, moose will be largely undisturbed in this area over the winter months. There is existing access to the lake, and harvest within the entire area surrounding the Project site is regulated by a Permit Hunt Authorization, meaning harvest by licensed hunters will not increase. Harvest opportunities for First Nation hunters should not be impacted.

Goats – No identified impacts to goats.

Furbearers – While campground development may locally displace beavers, it is not expected to have population-level impacts.

References

MACHUTCHON, A. G. 2013. Human-bear interaction risk management at the proposed Atlin Lake campground. Prepared for Yukon Parks Branch, Environment Yukon. 34 pp.

Appendix 1. All data collected during site visit.

WP	Site	Crowberry	Soapberry	Low-bush Cranberry	High-bush Cranberry	Blueberry	Bear Root	Oxtropis/Locoweed	Bearberry	Rose	Horestail	Fireweed	River Beauty	Kinnickinnick	Notes
001	1		76-100		0-25										Aspen, continuous soapberry
002	2		51-75											0-25	Aspen, soapberry, open
003	3		26-50												Large willow
004	4		0-25		0-25									76-100	
005	5		26-50											51-75	Aspen
006	6		76-100							0-25				26-50	Aspen
007	7		0-25											0-25	Open aspen, moose pellets
008															Game trail
009	8		0-25											0-25	Open aspen
010	9													76-100	Open rocky, stunted aspen
011	10														Open rocky with juniper, lakeshore
012	11		0-25											76-100	Open rocky
013															Beaver cuttings
014	12		0-25											51-75	Dense aspen with clearings, beaver cuttings
015															
016	13		0-25											51-75	South facing slope
017	14									0-25				51-75	Meadow with sparse aspen
018	15		26-50		0-25									51-75	Willow/aspen/spruce draw
019	16				0-25					0-25				0-25	Willow/spruce/aspen
020	17		0-25												Spruce/aspen

Table continued

021															2 groups of moose pellets
022															Bear scat
023	18														Lab tea, alder, moose pellets
024															Bear dig
025	19		0-25		51-75									26-50	Aspen
026	20		0-25											0-25	South facing slope
027	21		26-50							0-25				76-100	Aspen/spruce
028	22		51-75							0-25				0-25	Aspen, subalpine fir, bear scat
029	23		0-25							0-25				26-50	Aspen/willow
030															Tram support
031	24													26-50	Open meadow
032															Moose pellets
033	25		26-50											0-25	Open meadow, aspen
034															Moose pellets
035	26		0-25											0-25	Sparse willow, aspen, semi-open
036															Moose pellets
037	27		0-25											76-100	Sparse aspen
038	28		0-25											0-25	Scrubby aspen, willow
039	29		0-25											26-50	Scrubby aspen, willow
040															Rusty cans
041	30														Aspen, shoreline
042	31														Aspen, shoreline
043															Canine tracks
044	32									0-25					Aspen near campsites
045	33									51-75					Aspen
046	34									26-50					Large aspen
047															Rusty debris
048	35		76-100											0-25	Aspen, lots of soapberry