

## Gwich'in Renewable Resources Board Research Interests Summary

<b>GRRB Research interests- ungulates</b>		
<b>Species and pop'n/location</b>	<b>Research interest description</b>	<b>Status update_Sep 2016</b>
Porcupine caribou	How many Porcupine caribou are harvested, age class, sex, harvest location? What is harvester response rate in each community?	ongoing; data collected through Gwich'in Harvest Study; low reporting 2015-2016
Porcupine caribou	What is herd size, mortality rates, survivorship, sex and age class size and ratios?	ongoing PCMB, ENR
Cape Bathurst; Bluenose-west caribou	What is herd size, sex and age class size and ratios?	surveys conducted in 2006, 2009, 2012, 2015; subject of draft management plan
Porcupine caribou	Have migratory routes, or calving grounds changed?	PCMB, ABEKC
Woodland caribou-Boreal population	Assessed as Threatened in NWT by SAR, recovery strategy being developed	
Woodland caribou-Northern Mountain population in southern GSA-Bonnetplume herd	Interest_Surveys on mountain woodland caribou in the southern GSA. Note that there is no survey info since the 1980s. Assessed as Species of Concern by COSEWIC (federal). Expected to be listed in Fall 2016. concern raised by Doug Doan at Feb 2016 GRRB meeting	
Muskox *Northern Richardson Mtns	What is herd size, sex and age class size and ratios?	Research Ongoing: April 2016 Survey of North Slope (Alaska, Yukon & NWT, also included Northern Richardsons); Caribou-muskox observations summer 2016; More collaring Sept 2016.
Dall's sheep *Northern Richardson Mtns	Community monitoring program coordination	2016 Additional prep work done for more camera monitoring. ERRC interested in partnering for 2017
Dall's sheep *Northern Richardson Mtns	Dall's sheep lamb survival and population ratios	
Dall's sheep *Northern Richardson Mtns	communication to communities	Ongoing. Project this year to update RRCs on mgt planning. Currently scheduling meetings w/ RRCs for 2016-2017

## Gwich'in Renewable Resources Board Research Interests Summary

Dall's sheep *Northern Richardson Mtns	Current status report	Status reports provided by YT in 2011, next status update unknown	
Dall's sheep *Northern Richardson Mtns	Dall's sheep population trend information including TK	Next population survey should occur in 2017 (to help set priorities). Actions identified in Draft Management Plan 2008 .	
Dall's sheep *Northern Richardson Mtns	What are population indicators?	This is an action in the mgt plan.	
Dall's sheep *Northern Richardson Mtns	How does the harvest affect this population? What is sustainable level of harvest?		

## Gwich'in Renewable Resources Board Research Interests Summary

<b>GRRB Research interests- ungulates</b>		
<b>Species and pop'n/location</b>	<b>Research interest description</b>	<b>Status update_Aug 2016</b>
Dall's sheep *Northern Richardson Mtns	How to establish a sensitive habitat decision making protocol.	This is an action in the mgt plan.
Dall's sheep *Northern Richardson Mtns	What vegetation information is required to evaluate sheep range? Vegetation survey?	This is an action in the mgt plan.
Dall's sheep *Northern Richardson Mtns	aerial survey - population trend information	Conducted in 2006, 2010 and 2014 - pop'n estimate 496 (2014)
Dall's sheep *Northern Richardson Mtns	What are risks to sheep range ?	This is an action in the mgt plan.
Dall's sheep *Northern Richardson Mtns	Evaluate impacts of development on Dall's sheep range.	This is an action in the mgt plan.
Dall's sheep *Northern Richardson Mtns	What are important health risks to sheep that can affect this population?	This is an action in the mgt plan.
Dall's sheep *Northern Richardson Mtns	How do predators affect sheep population?	Richardson project (C.L.Koizumi) and thesis examined this. Initial work conducted.
Moose	Are management plan actions current? Has moose population changed between 2006 and 2011?	Actions identified in Moose Management Plan 2000. Last population survey was in 2011. Density estimate was calculated in 8 survey blocks. Poster produced and shared w/communities.

## Gwich'in Renewable Resources Board Research Interests Summary

<b>GRRB Research interests-Fur bearers</b>		
<b>Species and pop'n/location</b>	<b>Research interest description</b>	<b>Status update_Aug 2016</b>
Otter	What is abundance and distribution of otter? What is their diet? What impact are they having on other species? Ex beaver and muskrat	GRRB - local knowledge pilot project - 2013 COMPLETE
Grizzly bear	Are management plan actions current?	Actions identified in Management Agreement 2006
Grizzly bear	What is the estimated grizzly bear population in the GSA? Is full GSA survey required, or localized to seasonal concentrations ex. along highway in hunting season?	Actions identified in Management Agreement for Grizzly bears in GSA 2006; GRRB lead - grizzly human interaction on Dempster - 2013; Communication materials distributed 2013-2016
Grizzly bear	grizzly- human interaction on Dempster highway; more data on Dempster grizzly pop'n	RI added Sep 2016
Wolf	Have wolf populations increased locally? Are they having a significant impact on caribou and moose?	
Beaver	What is the current estimated population of beaver? What impact are they having on other species?	
Muskrat	What is the current estimated population of muskrat? Community members are concerned that populations may be declining.	Brietzke_ UVic - research 2015, 2016
Snowshoe hare *Ft McPherson region	What is hare population estimate near Ft McPherson? Is trend in rabbit population due to natural cycle?	GRRB lead in Inuvik_ ENR_ Small Mammal Survey - ongoing
<b>GRRB Research interests- Birds and insects</b>		
<b>Species and pop'n/location</b>	<b>Research interest description</b>	<b>Status update_Aug 2016</b>
Peregrine falcon *Campbell Hills	What impacts have recent developments had on Peregrine falcon populations? (gravel extraction, Territorial Park, increased flights from Airport)	peregrine falcon mitigation during construction of trails 2013-2014

## Gwich'in Renewable Resources Board Research Interests Summary

Songbirds *Mackenzie Delta	Assess current abundance and distribution of swallows and other songbirds in Delta; interest in future bank swallow surveys on Peel at 8 Mi	bank swallow survey-GRRC AFSAR funded - 2014 - Mackenzie river route; 2015 - GSA quarries_COMPLETE
Songbirds *Mackenzie Delta/Aklavik	Concern about general decline in songbird populations. What impact do ravens have on local songbird populations around Aklavik ? (Ian McLeod_Aug 2016)	
Snipes	population survey, appear to be in decline. James Andre-Feb 2016	
Insects	Range expansion. Are 'new' insects becoming established in the GSA?	
<b>GRRB - Research interests- Dolly Varden char</b>		
<b>Species and pop'n/location</b>	<b>Research interest description</b>	<b>Status update_Aug 2016</b>
Dolly Varden *Shingle Point	Stock identification and composition of mixed stock fishery	project leads: DFO/FJMC/ AHTC survey last conducted 2012
Dolly Varden *Rat River	Monitoring of critical habitat; Assessment of new habitats	habitat monitoring has not yet been conducted
Dolly Varden_All	Develop and present curriculum based DV conservation program for K-12	interest added 2015, subject to funding
Dolly Varden *Rat River	Population monitoring	project lead: DFO Pop`n assessments conducted 2009-2012; project continued - 2014, 2015
Dolly Varden Big Fish River	Stock identification and composition	project leads: DFO/ FJMC; not GRRB priority
Dolly Varden * Vittrekwa River	Stock identification and composition	project leads: DFO/GRRB/FJMC last conducted in 2011; reduce priority until 2013 or 2014

## Gwich'in Renewable Resources Board Research Interests Summary

Dolly Varden * Rat River	DV health monitoring - char monitors to collect kidney samples for health assessment	project leads: DFO/EC no kidney sampling in 2012; project status uncertain	
Dolly Varden *Arctic Red River	Obtain species' baseline biological information	IFMP priority for Species at Risk Act (SARA); recommend to conduct research before 2015; Arctic Red project - 2015, 2016	

## Gwich'in Renewable Resources Board Research Interests Summary

<b>GRRB - Research interests- other fish species</b>		
<b>Species and pop'n/location</b>	<b>Research interest description</b>	<b>Status update_Aug 2016</b>
Lake Trout * Airport Lake	monitor habitat parameters to determine whether Airport Lake development is impacting Lake Trout habitat	DONE_Lake trout studies Airport Lake, Deep Water - 2013-2014
Salmon species *Mackenzie River	Salmon species (chum, coho, pink, sockeye) are being caught more frequently in the Mackenzie River system. Are salmon becoming established in the GSA? Are populations sufficient for sustainable	Project lead: DFO salmon collection project , 2011-2014 data collection in Mackenzie River system
Loche *Mackenzie Delta	data collection for monitoring purposes (Amy Amos)	DONE_Loche data collected for 2 years on genetics, parasites
Loche *Mackenzie Delta	concern about 'bad loche', soft flesh, story of a fisher only keeping 8/20 fish (fall 2016) b/c rest were 'bad'. Are there contaminants?(Wanda McLeod, Nov 2016)	
Coney *Mackenzie River	Coney observed in nets all summer rather than few weeks in July and have been found in areas not seen previously. Are they expanding their range and season?	June 2012 - staff recommend this be re-prioritized/re-defined as community concerns arise
Whitefish and coney *Peel, Arctic Red, Mackenzie Rivers	abnormalities observed in fish organs, including sperm ducts and eggs, (harder than normal), black spots on fish livers, red scars on whitefish and coney skin, fish flesh not firm. Are fish healthy?	
Whitefish and coney *Peel, Arctic Red, Mackenzie Rivers	What is the relationship between flesh firmness and water temperature, time of year (spring to fall) and location (river, lake, creek)? Harvesters have observed that the flesh of whitefish caught near Tsiigehtchic is generally firmer than those caught near Ft. McPherson.	

## Gwich'in Renewable Resources Board Research Interests Summary

Whitefish and coney *Peel, Arctic Red, Mackenzie Rivers	Harvesters (Richard Ross, John Carmichael) have noticed unusual stomach contents including sand, in lake whitefish. What are the stomach contents and why is sand present?	
<b>GRRB - Research interests- other fish species</b>		
<b>Species and pop'n/location</b>	<b>Research interest description</b>	<b>Status update_Aug 2016</b>
Lake Trout; Grayling; N. Pike *Sandy, Travaillant	Can lakes of the GSA sustainably support a sport fishing industry?	DONE_Lake trout studies Airport Lake, Deep Water - 2013-2014
Least cisco (walleye) population	concern about apparent declines TRRC_Feb 2015	
herring (pickerel?) population	TRRC-Feb 2015	
Other fish species *Nagwichoonjik (Mackenzie River) ; Chii Tiet	Range expansion? Arctic char observed in the Mackenzie. Increasing numbers of walleye (pickerel) in Chii Tiet .	Chii Tiet (drains into Mackenzie upstream of Tsiig ferry, west)
<b>GRRB Research interests- Forestry and vegetation</b>		
<b>Species and pop'n/location</b>	<b>Research interest description</b>	<b>Status update_Aug 2016</b>
Vegetation survey	What are dominant vegetation types in association with particular ecosystems in GSA?	
Forest disturbance - harvesting	What are sustainable forest harvesting levels in the GSA?	Forest Management Plan approved August 2012
Forest disturbance - fire	How are forest fires likely to behave in the GSA and under what conditions?	Refer to ENR forestry division
Forest disturbance - insects	Are spruce budworm or pine beetle negatively impacting forests in the GSA?	ENR Forestry regularly updates on this. See their updates to the GRRB at meetings and at RRC Regional

## Gwich'in Renewable Resources Board Research Interests Summary

Forest disturbance - flood	Do flooding events negatively impact forests in the GSA? What are flood frequency intervals?	ENR Forestry regularly updates on this. See their updates to the GRRB at meetings and at RRC Regional
Forest disturbance-development	How do forestry activities impact wildlife?	If Gwich'in Forest Management Plan being followed, cutting locations are being mapped and monitored, to help address this question.
Forest-commercial use	How have forests and forest products in the GSA been used commercially? Is there potential for forestry expansion?	See GFMP
Vegetation-berries	Where are berries collected? Are these sites healthy? Can traditional collecting activities be sustained at these sites?	Refer to Gwich'in Culture Department
<b>GRRB Research interests- Forestry and vegetation</b>		
<b>Species and pop'n/location</b>	<b>Research interest description</b>	<b>Status update_Aug 2016</b>
Vegetation-medicinal	What medicinal plants are collected? Where are they collected? Are these sites healthy? Can traditional collecting activities be sustained at these sites?	Refer to Gwich'in Culture Department
Vegetation-traditional food	Species that have been traditionally collected such as rhubarb and bear root appear to be decreasing. Why aren't these species found where they used to be?	Refer to Gwich'in Culture Department
Vegetation-introduced spp	range expansion. Are introduced vegetation species becoming established in the GSA?	
<b>GRRB Research interests- Environment and health</b>		
<b>Species and pop'n/location</b>	<b>Research interest description</b>	<b>Status update_Aug 2016</b>

## Gwich'in Renewable Resources Board Research Interests Summary

effects of slumps on wildlife and habitat	concerns raised about whether slumps cause animals to avoid sites which may affect habitat use, caribou migratory routes	GRRB requests erosion/permafrost/slumping researchers report evidence of wildlife use or avoidance in these areas (summer 2015, 2016)	
Erosion *Mackenzie River; Arctic Red River	Residents have observed increased frequency of river bank failure, especially during high water. Is this due to regularly occurring river processes or to permafrost melting?	Megaslump disturbance and impact on fish habitat on the Peel Plateau is subject of research by AANDC and others. Research supported by GRRB.	
Aquatic habitat *Campbell Creek, Campbell Lake	Poorer fishing reported in system in recent years. Location close to proposed Mackenzie gas pipeline. NRRC would like baseline study prior to development		
Water quantity *Peel Channel, Mackenzie Delta, Arctic Red River	Fluctuating river levels affect travel on the river. What has river height and discharge volume been in recent years compared to historical data? What causes these fluctuations?		
<b>GRRB Research interests- Environment and health</b>			
<b>Species and pop'n/location</b>	<b>Research interest description</b>	<b>Status update_Aug 2016</b>	
Water quantity *Peel Channel, Mackenzie Delta, Arctic Red River	What is the cause of river level fluctuations? How does this affect fish? Ex: Peel River ferry closed 4X summer 2016, wind, high water		
Country Food	Country foods play important nutritional, cultural and spiritual role in the lives of the Gwich'in. It is feared that as the consumption of country food decreases, so does the health, culture and general well-being of Gwich'in.	Is not directly related to GRRB mandate. Refer to Gwich'in Culture Department	

## Gwich'in Renewable Resources Board Research Interests Summary

<p>Water quality *Peel Channel, Mackenzie Delta, Arctic Red River</p>	<p>Concerns about water quality especially after H. pylori found in Aklavik drinking water (2008). Are these healthy rivers? What are contaminant levels?</p>	<p>concerns can be referred to Water Resources Officer-ENR</p>
<p>Water quality * Peel Channel, Mackenzie River upstream of communities</p>	<p>Concerns about water quality raised due to new developments on Peel and Mackenzie River watersheds. GTC would like to see monitoring stations upstream of Fort McPherson, Aklavik and Tsiigehtchic</p>	<p>concerns can be referred to Water Resources Officer-ENR</p>