

NWT Biodiversity Action Plan

Copy of Appendix 2 – Detailed list

Wildlife-related Monitoring Programs in the Northwest Territories.

The NWT conducts a host of wildlife-related monitoring programs that help in determining changes in biodiversity and better understanding functional linkages in ecosystems.

A list of many of these monitoring programs can be found below.

The list includes monitoring conducted by federal and territorial governments, as well as non-governmental organizations and Aboriginal groups. This list does not include monitoring conducted by private industry.

In these programs, **Wildlife** includes any animal or plants.

Monitoring is defined as an activity undertaken at regular intervals and expected to continue on a long-term (e.g., 10+ years) or undetermined basis. The objective of monitoring is to detect changes -- sometimes still of an unknown nature, whereas the objective of research is to test hypotheses.

Research was defined as project that is expected to end when hypotheses were tested or when the objectives were completed. Research projects were not included in the monitoring list.

If tracking is done to investigate specific questions on, for example, movement or habitat use, then tracking is research. If tracking is expected to continue indefinitely so that it can be used as a tool to monitor movement, use, dispersion, population parameters etc. in a changing environmental context, then tracking may be considered Monitoring.

Detail list - Wildlife-related Monitoring Programs in the Northwest Territories.

Title	Schedule	Collaborators ¹
Ungulates and associated predators		
Moose Population Estimates and Population Composition (Fort Good Hope, Tulita, Norman Wells)	Every 5 years	RWED Sahtu Region
Census and Composition - Dall's Sheep (Katherine Creek and Palmer Lake study areas)	Annually	RWED Sahtu Region
Cumulative effects - Northern Mountain caribou – (South Nahanni herd)	Annually	RWED Wildlife and Fisheries Parks Canada Yukon Renewable Resources
Population Trend – Northern Mountain caribou (South Nahanni herd)	Every 5-6 years	RWED Deh Cho RWED Wildlife and Fisheries Parks Canada Yukon Renewable Resources
Population Survey - Dall's Sheep (Richardson Mountains NWT and Yukon)	Every 5-6 years	RWED, Inuvik Region DRR, Dawson GRRB VGFN
Calving Ground survey - BG Caribou (Beverly)	Every 5-6 years	Gov. of Nunavut RWED Wildlife and Fisheries
Calving Ground survey - BG Caribou (Bathurst)	Every 5-6 years	Gov. of Nunavut RWED Wildlife and Fisheries
Calving Ground survey - BG Caribou (B-Q)	Every 5-6 years	RWED Wildlife and Fisheries Gov. of Saskatchewan Gov. of Manitoba Gov. of Nunavut BQ Board
Photocensus - BG Caribou (Cape Bathurst and Bluenose-West)	Every 5-6 years	RWED, Inuvik Region RWED, Sahtu Region GRRB SRRB
Productivity - BG Caribou (Cape Bathurst and Bluenose-West)	Annually	RWED, Inuvik Region Parks Canada, Western Arctic Field Unit
Recruitment - BG Caribou (Cape Bathurst and Bluenose-West, Bathurst herd)	Annually	RWED, Inuvik Region Parks Canada, Western Arctic Field Unit GRRB SRRB Department of Resources, Wildlife and Economic Development HQ
Cumulative effects – BG Caribou - (Bathurst herd)	Annually	RWED Wildlife and Fisheries WKSS
Site Use and Behaviour - BG Caribou surveys (Bathurst herd near Ekati)	Annually	BHP Billiton

Title	Schedule	Collaborators ¹
Fall Composition - BG Caribou (Cape Bathurst and Bluenose-West) Bathurst herd	Every 5-6 years	RWED, Inuvik Region Parks Canada, Western Arctic Field Unit Department of Resources, Wildlife and Economic Development HQ
Commercial Harvest Survey - BG caribou (Inuvialuit Settlement Region and Gwich'in Settlement Area)	Annually	RWED, Inuvik Region
Contaminants - BG caribou (Cape Bathurst and Bluenose-West)	Every 5 years	RWED, Inuvik Region RWED, Yellowknife
Outfitter Questionnaire - Caribou Health	Annually	RWED Wildlife and Fisheries
Environmental Contaminants in Caribou (Bathurst, Beverly & Cape Bathurst herds)	Every 5 years	RWED Wildlife & Fisheries RWED Inuvik Region RWED North Slave Region RWED South Slave Region
Population surveys - Bison (Mackenzie herd)	Every 2 years	RWED South Slave Region
Population surveys - Bison (Slave River Lowlands herds)	Every 2 years	RWED South Slave Region Parks Canada – Wood Buffalo National Park
Population surveys - Bison (Nahanni herd)	Every 5 years	RWED South Slave Region RWED Deh Cho Region
Composition (calf productivity & yearling recruitment) - Bison (Mackenzie, Slave River Lowlands, Hook Lake herds & Nahanni)	Annually	RWED South Slave Region RWED Deh Cho Region RWED Wildlife and Fisheries
Hunt monitoring - Bison (Mackenzie)	Annually	RWED South Slave Region Fort Providence Resource Management Board
Summer anthrax surveillance flights and monitoring of Brucellosis & Tuberculosis - Bison (Mackenzie bison)	Annually	RWED South Slave Region RWED Wildlife and Fisheries
Control Area surveys - Bison - associated Woodland caribou, Moose & Wolf (South Slave Control Area)	Annually	RWED South Slave Region Parks Canada – Wood Buffalo National Park
Population survey - Peary caribou, muskoxen, and Arctic wolves (Banks Island)	Every 4-5 years	RWED, Inuvik Region Parks Canada, Western Arctic Field Unit
Population survey - Peary caribou, muskoxen, and Arctic wolves (NW Victoria Island)	Every 4-5 years	RWED, Inuvik Region
Productivity and Recruitment - Peary caribou and muskoxen (Banks Island)	Annually	RWED, Inuvik Region Parks Canada, Western Arctic Field Unit
Productivity and Recruitment - Peary caribou (Melville Island)	Annually	RWED, Inuvik Region Parks Canada, Western Arctic Field Unit

Title	Schedule	Collaborators ¹
Late winter body condition and diet - snow urine study - Peary Caribou and Muskoxen (Banks Island)	Annually	RWED, Inuvik Region
Prevalence and Intensity of Infection of gastrointestinal parasites - Peary Caribou and Muskoxen (Banks Island)	Annually	RWED, Inuvik Region RWED, Wildlife & Fisheries, Yellowknife Western College of Veterinary Medicine
Harvest Survey - Peary Caribou (Banks Island)	Annually	RWED, Inuvik Region
Population Survey - Muskoxen (Mainland in Inuvialuit Settlement Region)	Every 5 years	RWED, Inuvik Region Parks Canada, Western Arctic Field Unit RWED Sahtu Region (usually)
Harvest Survey - Muskoxen (Inuvialuit Settlement Region -including commercial tags, subsistence harvest and sport hunts)	Annually	RWED, Inuvik Region
Fur-bearers, Carnivores and Small Mammals		
NWT Small Mammal Survey (across NWT)	Annually	RWED Wildlife and Fisheries Gov. of Nunavut, RWED Regions, RWED Forest Management University of Alberta, University Laval, University of British Columbia, Gwich'in Renewable Resource Board University of Alaska Museum
Lemming monitoring- Collared and brown lemmings (Aulavik National Park)	Annually	Parks Canada, Western Arctic Field Unit
Hare Survey (Forested NWT)	Annually	RWED Wildlife and Fisheries RWED Regions RWED Forest Management Gwich'in Renewable Resource Board
Beaver Lodge Densities (Willow Lake, Oscar Lake, Ramparts River)	Every 4 years	RWED Sahtu Region
Harvest/Hunting effort Questionnaire - Mountain Grizzly bears (Mackenzie Mountains)	Annually	RWED (all regions) RWED Enforcement & Legislative services RWED Wildlife and Fisheries
Harvest monitoring (problem bears killed, subsistence harvest, and sport hunts) - Grizzly bears (Inuvialuit Settlement Region and Gwich'in Settlement Area)	Annually	RWED, Inuvik Region DRR, Dawson Gwich'in Renewable Resource Board
Problem bear monitoring - Grizzly bear, polar bear, and black bear	Annually	RWED, Inuvik Region RWED, North Slave Region RWED, Deh Cho Region RWED, South Slave Region
Population surveys - Grizzly bear (Inuvialuit	Every 20-25	RWED, Inuvik Region

Title	Schedule	Collaborators ¹
Settlement Region and northern Gwich'in Settlement Areas)	years	GRRB DRR, Dawson
Site use and behaviour – Grizzly, Wolf, Wolverine surveys (near Ekati)	Annually	BHP Billiton
Population surveys - Polar bear (South Beaufort, North Beaufort, and Viscount-Melville Sound)	Every 20-25 years	RWED, Inuvik Region DSD, Nunavut US Fish & Wildlife CWS
Harvest Monitoring - Polar bears (Inuvialuit Settlement Region) problem bears killed, subsistence harvest, and sport hunts	Annually	RWED, Inuvik Region Wildlife Management Advisory Council (NWT)
Carcass Collection - Marten (Fort Good Hope area)	Annually	RWED Sahtu Region
Harvest Survey- Arctic wolves (Banks Island and NW Victoria Island) (number, age, sex, and diet of wolves harvested)	Annually	RWED, Inuvik Region
Carcass Collection - Lynx (all regions)	Annually	RWED Wildlife and Fisheries RWED Sahtu Region RWED South Slave Region RWED North Slave Region RWED Inuvik Region
NWT-wide Rabies Monitoring	Annually	RWED Wildlife & Fisheries RWED Regions including RRO's GNWT Health & Social Services
Monitoring of Cougar sightings	Annually	RWED Wildlife and Fisheries RWED Sahtu Region RWED South Slave Region RWED North Slave Region RWED Inuvik Region
Marine fishes, mammals and other species		
Beluga Harvest monitoring program	Annually	DFO Fisheries Joint Management Committee
Marine Mammal Stock assessments	Annually	DFO
Marine Fish harvest rates, abundance and health part of Tariuq (Ocean) Monitoring Program – sites including near Aklavik, Shingle Point, Tuktuayktuk harbour, and Hendrickson Island.	Annually	Inuvialuit and Gwich'in communities and organizations DFO
Fish, Amphibians and Aquatic invertebrates		
Frog Watch NWT	Annually	Ecology North EMAN-North EMAN GNWT Private volunteers (Lead: Mike Fournier)
Contaminant monitoring in fish populations	Annually in different	DFO

Title	Schedule	Collaborators ¹
	pops.	
Rat River Char Monitoring – Dolly Varden stock (Rat River watershed)	Annually	Gwich'in Renewable Resource Board DFO
Birds		
Duck banding project (Willow Lake)	Annually	US Fish and Wildlife RWED Sahtu Region
Duck banding project (Mills Lake)	Annually	US Fish and Wildlife
Inventory of Snow and Ross' Geese - Vertical Aerial Photography	Every 5 years	CWS, Yellowknife
Snow goose banding at Banks Island, Kendall Island and Anderson River colonies	Annually	CWS, Yellowknife
White-fronted goose breeding surveys in the Mackenzie Delta/Tuktoyaktuk Peninsula areas	Every 3-5 years	CWS, Yellowknife
Thick-billed Murre Survey – part of Seabird monitoring strategy of the Canadian Arctic (Cape Parry) part of Canada's Conservation Plan for Seabirds and Colonial Waterbirds.	Every 5-10 years	CWS, Yellowknife
Trumpeter Swan Survey	Every 5 years	CWS, Yellowknife
Boreal Ducks and Grebes monitoring – productivity and habitat use (east of Yellowknife, North Arm of Great Slave Lake)	Annually	CWS, Yellowknife DU INAC Arctic Hydrometric Surveys Division, EC
Boreal Lesser Scaup monitoring - Population Ecology (east of Yellowknife, North Arm of Great Slave Lake)	Annually	CWS, Yellowknife University of Saskatchewan Delta Waterfowl Foundation GNWT, DOT DU
Boreal Songbird monitoring – population and habitat use (Liard Valley)	Annually	CWS, Yellowknife GNWT INAC Acho Dene Koe First Nation Industry
Christmas Bird Count ³ (Norman Wells) part of North American Christmas Bird Count program.	Annually	RWED Sahtu Region Private volunteers
Christmas Bird Count ³ (Yellowknife) part of North American Christmas Bird Count program.	Annually	Ecology North Private volunteers
Christmas Bird Count ³ (Fort Smith) part of North American Christmas Bird Count program.	Annually	Private volunteers
Christmas Bird Count ³ (Fort Simpson) part of North American Christmas Bird Count program.	Annually	Parks Canada, Nahanni National Park Private volunteers
Peregrine Falcon Survey (Mackenzie River) part of 5-year North American Peregrine Falcon survey, and of Recovery Strategy.	Every 5 years	RWED Wildlife and Fisheries RWED Regions (Sahtu and Inuvik) RWED Forest Management

Title	Schedule	Collaborators ¹
		Canadian Wildlife Service (part of North American-wide surveys)
Peregrine Falcon Survey (Aulavik and Tuktut Nogait National Parks) part of 5-year North American Peregrine Falcon survey.	Every 5 years	Parks Canada, Western Arctic Field Unit Canadian Wildlife Service RWED Inuvik Region (part of North American-wide surveys)
Raptor and breeding bird surveys (southern arctic near diamond mine sites)	Annually	BHP Billiton Diavik Diamond Mines RWED, Wildlife and Fisheries
White Pelican Monitoring (Fort Smith and northern Alberta)	Annually	Private volunteers (coordinator J. Van Pelt) Alberta Sustainable Resource Development – NE Region RWED, South Slave Region Wood Buffalo National Park
Breeding Bird Survey (Daring Lake)	Annually	RWED Wildlife and Fisheries Private volunteers (coordinator S Matthews)
Whooping Crane Monitoring (in Wood Buffalo National Park and surroundings) part of Whooping Crane Recovery Strategy.	Annually	Wood Buffalo National Park CWS, Edmonton Whooping Crane Recovery Team USFWS University of Alberta
Bird monitoring - Spring Arrival Dates (Yellowknife)	Annually	RWED Wildlife and Fisheries Canadian Wildlife Service Private volunteers (coordinator R. Bromley)
Raptor Survey - Daring Lake	Annually	RWED Wildlife and Fisheries
Breeding Bird Survey (Norman Wells) part of North American Breeding Bird Survey	Annually	RWED Regions (Sahtu) Canadian Wildlife Service Private volunteers (coordinator A. Veitch)
Breeding Bird Survey (Yellowknife) part of North American Breeding Bird Survey	Annually	Cygnus Consulting Private volunteers (coordinator J Bastedo)
NWT-Nunavut Bird Checklist Survey -Incidental observations of birds are recorded for the NWT-Nunavut Bird Checklist Survey (NWT-wide)	Annually	Canadian Wildlife Service Parks Canada Private volunteers
Arctic Shorebird Monitoring Program (currently in test phase- anticipated start in next 2-3 years) part of Program for Regional and International Shorebird Monitoring (PRISM)	Annually, rotating among zones of BCR 3	Canadian Wildlife Service
Boreal and Taiga Shorebird Monitoring Program (currently in development phase- anticipated start of test phase in 1 year) part of Program for Regional and International Shorebird Monitoring (PRISM)	Annually, rotating among zones of BCRs 6 and 7	Canadian Wildlife Service
Terrestrial ecosystems – Forest and Tundra		
International Tundra Experiment - Canadian	Annually	RWED Wildlife and Fisheries

Title	Schedule	Collaborators ¹
Tundra and Taiga Experiment on Phenology (Daring Lake)		EMAN-North Northern Ecosystem Initiative (Environment Canada) Gov. of Yukon
Tree Phenology study (Inuvik Region)	Annually	RWED Forest Management - Inuvik Region
Satellite monitoring of plant productivity	Annually	Parks Canada, Western Arctic Field Unit
Acid Rain National Early Warning System (ARNEWS), Forest Health Plot (4 plots in the NWT)	Annually first 5 years, every 5 years following	RWED Forest Management - Inuvik Region Gwich'in Renewable Resource Board Canadian Forest Service
Smithsonian Institute /Man and the Biosphere - Forest Plots (Inuvik Region)	Every 5 years	RWED Forest Management - Inuvik Region Gwich'in Renewable Resource Board Aurora College Inuvik Campus
Forest - Permanent Sample Plots (Inuvik Region)	Every 10-15 years	RWED Forest Management - Inuvik Region
Forest - Regeneration plots (Inuvik Region)	Annually first 5 years, every 5 years following	RWED Forest Management - Inuvik Region
Vegetation Contamination Survey – as part of the Wildlife Effects Monitoring Program (Survey is related to gas and dust emissions, Ekati Mine sites and control sites)	Every 3 years	BHP Billiton
Post-fire Vegetation plots - (in various burns throughout Inuvik Region)	Annually	RWED Forest Management - Inuvik Region Gwich'in Renewable Resource Board
Tibbitt Lake Post-Fire Study (Vegetation transects - near Yellowknife and Gordon Lake - associated wildlife, micro-climate and hydrological monitoring).	Annually first 5 years, every 2-3 years following.	RWED Wildlife and Fisheries RWED Region - North Slave RWED Forest Management Indian and northern Affairs Department of Fisheries and Oceans Environment Canada High Schools
Ocean ecosystem		
Beaufort sea monitoring – biophysical oceanography (Temperatures, currents, depth, salinity)	Annually	DFO Institute of oceanographic Sciences (Sidney, NS) World Climate Research Programme World Weather Watch
Insects		
Beaufort sea monitoring – biophysical oceanography (Temperatures, currents, depth, salinity)	Annually	DFO Institute of oceanographic Sciences (Sidney, NS) World Climate Research Programme World Weather Watch
Native Forest Insect Monitoring - Spruce	Annually	RWED Forest Development - Hay River

Title	Schedule	Collaborators ¹
budworm (all forested regions)		RWED Forest Management - Inuvik Region Canadian Forest Service
Native Forest Insect Monitoring -Forest tent caterpillar, large aspen tortrix, spruce beetle (some forested regions)	Annually	RWED Forest Development RWED Forest Management - Inuvik Region Canadian Forest Service
Survey of Invasive Alien² Insects - Larch sawfly (across forested regions in the NWT)	Annually	RWED Forest Development
Survey of Invasive Alien² Insects - Birch leaf miner (Yellowknife and Hay River)	Annually	RWED Forest Development City of Hay River City of Yellowknife RWED Wildlife and Fisheries Canadian Forest Service Canadian Wildlife Service (in YK only)
Multi-species - General		
General Status Ranks of Wild Species in the NWT– part of Accord for the Protection of Species At Risk in Canada (NWT-wide)	Every 5 years	RWED Wildlife and Fisheries Gov. of Nunavut RWED Regions Department of Fisheries and Oceans Canadian Wildlife Service Sahtu Renewable Resources Board Gwich'in Renewable Resource Board Wildlife Management Advisory Council (NWT) Fisheries Joint Management Committee Private volunteers
Community-based Ecological Monitoring – multi-species and bio-physical (Gwich'in Settlement Area)	Annually	Gwich'in Renewable Resource Board Arctic Borderlands Ecological Knowledge Society (Co-op) Private volunteers
Non-resident Hunter Harvest - Mackenzie Mountains	Annually	RWED Deh Cho Region
Outfitter Harvest – Mackenzie Mountains	Annually	Mackenzie Mountain Outfitters Association RWED Deh Cho Region
Resident Hunters Harvest Survey (NWT-wide) - associated fur-bearer and migratory birds information.	Annually	RWED Wildlife and Fisheries
Outfitter-Hunter Wildlife Observations – Mackenzie Mountain	Annually	Mackenzie Mountain Outfitters Association RWED Deh Cho Region
Pipeline Wildlife Monitoring - Enbridge Pipeline Right-of-Way (Norman Wells to Zama, AB)	Weekly	Enbridge RWED Sahtu Region RWED Deh Cho Region
Wildlife cards-Incidental observations of all species of wildlife are documented in and around Aulavik and Tuktut Nogait National Parks.	Annually	Parks Canada, Western Arctic Field Unit

Title	Schedule	Collaborators ¹
Deh Cho Territorial Parks Wildlife Observations (Territorial parks in Deh Cho Region)	Annually	RWED Deh Cho Region
Wildlife Disease Monitoring - Harvested Wildlife (NWT-wide)	Annually	RWED Wildlife & Fisheries RWED Regions incl. RRO's Canadian Cooperative Wildlife Health Centre
Winter Road - Wildlife Questionnaire (Yellowknife to Slave Geological Area)	Annually	RWED North Slave Region

1 Shared budget or provided in-kind help.

2 Alien = Not native to North America.

3 In the NWT, non-governmental organizations or private citizen supervise Christmas Bird Counts (CBCs) locally. Birds Studies Canada supervises CBCs at the Canadian level (<http://www.bsc-eoc.org/national/cbcmain.html>), whereas the Audubon Society supervises them at the North American level (<http://www.audubon.org/bird/cbc/index.html>).