POLAR CONTINENTAL SHELF PROJECT

NEWSLETTER
1997

Natural Resources Canada
Ressources naturelles Canada

Canada

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(version français disponible)

INTRODUCTION

Polar Continental Shelf Project's 1997 Newsletter provides a brief description of the programs which have applied to us for logistics support in the upcoming Arctic field season.

In order that we have adequate time to translate this text, and to ensure this Newsletter is sent to you as early in the year as possible, we have stopped adding any new information which reached us after mid-November 1996. As you know, at this point we have not yet decided which programs we can support. It is not, therefore, possible to delete project descriptions of any cancelled programs, or to revise the text as field arrangements are updated or altered.

We urge you to use this information to coordinate your field activities with other programs and as an information tool to make contact with other research scientists conducting similar or complementary work.

Sincere thanks to Margaret Herzog for compiling this Newsletter.

Wishing all of you a safe, successful year.

Bonnie Klyczyk

Director
PCSP

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ANTHROPOLOGY/ARCHAEOLOGY

Archaeological and Geological Research in Western Beringia (Northern Yukon): Old Crow, Bluefish, and Upper Porcupine regions

Project: 510-97

Period: July

Area: Old Crow

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The research scheduled for the upcoming summer (1997) is part of the interdisciplinary studies on Beringia conducted over recent years, and will address three aspects: (1) A study of traditional modes of occupation and use of land in the region of Old Crow Flats. The research, to be carried out in cooperation with R. Gotthardt and R. Le Blanc, is a follow-up to the work done in 1996. (2) Test pits will be dug in two peat bogs to determine the nature and thickness of the sediment. (3) For archaeological and paleoecological purposes, excavations and sampling will be undertaken in new caves (grottos or shelters) discovered in recent years. This activity, to be carried out in cooperation with B. Lauriol, will be conducted in concert with a team from the Institut du Quaternaire of the University of Bordeaux (France).

Long-term Hunter-Gatherer Adaptations in the Northern Boreal Forest, Northern Yukon Territory, Canada

Project: 613-97

Period: 01 July - 14 August

Area: Schaeffer Creek/Dog Creek

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The major objective of the project is to delineate long-term land use patterns in the Porcupine River drainage of the northern Yukon Territory (i.e., north of 67°N latitude) over a period of more than 20,000 years. The research will contribute to the broader picture of northwest North American prehistory and also to the nature of the initial colonization of the New World. More generally, it has theoretical importance for its potential to contribute to the interpretation of hunter-gatherer archaeology on a circumpolar scale.

Amundsen Gulf Thule Project **Project:** 509-97

Period: 10 July - 15 August

Area: Pearce Point, Amundsen Gulf

Name: Morrison, David

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A thousand years ago, Thule culture Inuit began to expand east into Arctic Canada from their Alaskan homeland. This project continues work begun by William E. Taylor on early Thule sites in the Pearce Point area of Amundsen Gulf on the Gateway to Arctic Canada.

Richards Island Prehistory Project **Project:** 504-97

Period: 11-28 August

Area: Richards Island

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The project represents a continuation of archaeological investigations into the early prehistory of the Mackenzie Delta that began in 1994. The field programme will include further excavations at Satkualuk, a multi component Palaeo-Eskimo site located on Richards Island, as well as survey and testing of additional early site localities on the east coast of Richards Island.

BIOLOGY

Ozone Depletion and UV Inhibition of Photosynthesis in Arctic Kelps: Spectral and Temporal Dependence

Project: 703-97

Period: 04-30 April - 11-30 August

Area: Resolute

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Depletion of stratospheric ozone, particularly in the polar regions, is causing increased concern over the effects of harmful UV radiation (mainly UVB, 280-320 nm). UVB is damaging to many biological processes and, in plants, it specifically targets photosynthesis. This proposal addresses the question of the effects of increased UVB on large benthic marine macroalgae (kelp) and the levels of UVB that penetrate into the coastal waters of the Arctic.

1997 NWT Eskimo Curlew Recovery Plan Project

Project: 307-97

Period: 20 May - 20 June

Area: Nicholson Peninsula

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To search for the endangered Eskimo Curlew (a shore bird) in its historical breeding ground in the Anderson River area.

To determine the status of the endangered Eskimo Curlew in identified suitable nesting habitats. The identification of suitable nesting habitats was based on ground data (collected from 1987 to 1996) and satellite data

Reproduction Ecology of the Greater Snow Geese

Project: 605-97

Period: 24 May - 20 August

Area: Bylot Island

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This project studies the population dynamic and plant/herbivore interactions in a goose population undergoing a rapid demographic expansion for the past two decades, the greater snow goose (*Chen caerulescens atlantica*) breeding on Bylot Island. A first objective is to examine the role of food availability (lower trophic level), predation (higher trophic level) and abiotic factors (thermal environment) in the regulation of this population. A second objective is to examine the impact of goose grazing on the vegetation of Bylot Island and the long-term effects of the population growth on Arctic wetland habitats.

Population Biology and Nutritional Ecology of Ross' Geese

Project: 211-97

Period: 25 May - 20 August

Area: Karrak Lake

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Centered around nesting studies at Karrak Lake, south of Queen Maud Gulf, this long-term study is addressing various factors that influence population size of Ross' geese. Spring nutrition, Arctic weather, and survival of young and adult Ross' geese over the annual cycle are the foci of this research.

Population Studies of Seabirds in Northern Hudson Bay and Foxe Basin

Project: 200-97

Period: 15 May - 25 August

Area: Coats Island/ Air Force Island/ Mansel Island

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Several internationally important populations of marine birds nest in Hudson Bay and Foxe Basin, an area that is little-known ornithologically. Surveys are designed to map and census breeding marine birds and to study the demography of selected species, especially thick-billed murres.

Mechanisms Mediating Freezing Tolerance in Arctic Invertebrates

Project: 614-97

Period: 28 May - 25 June

Area: Hazen Camp/ Ekblaw Lake/Caledonia Bay/Eureka

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The main objective of this study is to improve our understanding of how organisms survive freezing. Using Arctic invertebrates that survive at the physiological limits to life and sophisticated laboratory techniques, we are in the process of constructing a model for the mechanisms underlying freezing survival. The results relate directly to biomedicine (i.e. cryopreservation of tissues and organs) and food industry (i.e. frost resistance in crops, storage and transport of food, aquaculture operations).

Causes and Consequences of Biodiversity Change in High Arctic Tundra

Project: 636-97

Period: 29 May - 15 August

Area: Alexandra Fiord/Sverdrup
Pass/Eastwind Lake/Hot Weather Creek
Princess Marie Bay

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Factors affecting diversity in tundra communities, and the impacts of diversity on ecosystem function are poorly known. Causes and consequences of changes in biodiversity of High Arctic tundra will be determined using a combination of experimental manipulation and descriptive sampling along gradients of climate, grazing intensity and soil moisture. Manipulations will include removing dominant species/functional group; increasing seed density; and combinations of density changes, passive warming, fertilization, and changes in snow depth to alter growing season length. The research will be concentrated at the well-studied lowland at Alexandria Fiord, Ellesmere Island, and will address needs identified by ITEX, IGBP-GCTE, IASC and the Biodiversity Science Board of EMAN.

Population Studies of King and Common Eiders in East Bay, Southampton Island

Project: 215-97

Period: 30 May - 08 August

Area: East Bay

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Internationally important numbers of King and Common eiders breed in the East Bay area of Southampton Island. King and Common eider ducks are heavily hunted in Canada and Greenland. This study is designed to collect data on Eider survival rates, reproduction, and sources of mortality. This demographic information is required for effective management of the eider harvest.

Distribution and Abundance of the Northern Common Eider (*Somateria mollissima borealis*) Off Southern Baffin Island

Project: 202-97

Period: June

Area: Southern Baffin Island

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The northern species of the common eider (*Somateria millissima borealis*) are subjected to heavy subsistence and sport harvest throughout its breeding, staging, and wintering areas. It is also vulnerable to catastrophic events during winter and migration (e.g., oil spills). Despite this, no reliable data exists on its population status and few key habitat sites have been identified. A large proportion of the population is thought to breed on small islands off the south coast of Baffin Island, and we propose to conduct a population survey of eiders in this region using both aerial transects and ground surveys.

Microsatellite Variation in the Muskox *Ovibos moschatus*

Project: 618-97

Period: 07 June - 13 July

Area: Resolute

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We are describing microsatellite DNA variation in muskox *Ovibos moschatus* throughout their range in Canada and Greenland. These data are used to investigate the evolutionary history of this genus and the effect islands have on genetic polymorphisms in large mammals. The results will be applied to the management and conservation of this renewable resource.

Estimation of the Carrying Capacity of Breeding Areas of the Greater Snow Geese on Bylot Island

Project: 628-97

Period: 11 June - 20 August

Area: Bylot Island

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The Greater Snow geese population breeding in the High Arctic has considerably increased in the last two decades from 150,000 individuals in 1975 to 600,000 in 1995. The main goal of this project is to estimate the carrying capacity of the Snow geese breeding habitat on Bylot Island (73° N). The approach will be to compare requirements of the geese and available resources (quantity and quality).

Survival and Reproduction in King Eiders

Project: 217-97

Period: 15 June - 20 August

Area: Karrak Lake

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King eiders have appeared to decline by 75% in Canada's central and western Arctic over the last 30 years. Little is known about the breeding biology of King eiders but causes for the decline may be related to reduced production as few are shot in Canada. This study, centered at Karrak Lake, NT, will examine annual variation in survival and breeding performance.

Airphoto Inventory of Snow Geese Nesting on Baffin and Southampton Islands

Project: 208-97

Period: 17 June - 10 July

Area: Iqaluit/Coral Harbour

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Large format (9" x 9") air photography will be used to obtain an accurate estimate of the numbers of nesting Snow geese and the area they occupy on southwest Baffin Island and Southampton Island. Results will improve and update the information being used to manage these geese whose numbers have been increasing rapidly in both Canada and the U.S.A. The air photo inventory in June will complement and enhance summer surveys to be done in August on southwest Baffin by Dale Caswell.

White-fronted and Canada Geese of the Central Canadian Arctic

Project: 210-97

Period: 20 June - 07 July

Area: Queen Maud Gulf Bird Sanctuary/Inglis River/King William Island/Adelaid Peninsula/Bathurst Inlet/Coppermine/ Pelly Bay/Repulse Bay/Baker Lake/ Chesterfield Inlet/Rankin Inlet

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Helicopter supported surveys will fill in the gaps in our knowledge of the numbers of white-fronted geese and small Canada geese which nest in the central Canadian Arctic. Results will help extend and improve the information being used to manage the conservation of these geese in North America (Canada, U.S.A. and Mexico).

Habitat Selection and Competition Among Arctic Rodents

Project: 619-97

Period: 22 June - 14 July

Area: Walker Bay Camp

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We are studying the coexistence of lemmings and other rodents to assess how competing species affect spatial distribution and habitat selection. Estimates of population density in different tundra habitats and experimentally manipulated densities will allow us to test the ability of habitat theories to reveal competition. The research should also help us understand the role of habitat in the characteristic population cycles exhibited by northern mammals.

Bird Distribution and Abundance in Northwest Foxe Basin

Project: 213-97

Period: 23 June - 15 July

Area: Air Force Island

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The islands of northwest Foxe Basin (Prince Charles, Air Force and Foley islands) are considered key habitats for shorebirds, Sabines gulls and Brant. They are currently being evaluated for some sort of protected status. In 1997 we will continue surveys of shorebirds and shorebird habitat, gulls and goose census.

Peary Caribou Numbers and Distribution, Western Queen Elizabeth Islands

Project: 308-97

Period: 01-30 July

Area: Resolute

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There may be now as few as 2,000 Peary caribou left on the High Arctic islands but some islands have not been surveyed since between 1961 and 1987. In 1990, they were nationally recognized as endangered after numbers had dropped from 26,000 in 1961 to 5,000 in 1974. An aerial survey to estimate Peary caribou numbers would update their status and determine recovery actions.

Effect of Neck Collars on Survival of Geese

Project: 216-97

Period: 10-25 July

Area: Perry River

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This project will examine the effect of neck collars on survival rates of geese. Neck collars are being used increasingly to update distribution of geese. This study will also enhance knowledge of the migration and winter distribution of white-fronted and Canada geese.

Population Dynamics and Movements of Coregonids in the Mackenzie River and Delta, NWT

Project: 107-97

Period: 13-31 July

Area: Arctic Red River/Peel River

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Examination of demography of coregonid fishes of the lower Mackenzie River is required to build paradigms for management of fisheries in the region. Results will be incorporated into a quantitative model and will partially fulfil requirements for a PhD thesis at the University of Alberta.

Canada Goose Surveys and Banding on the West Coast of Hudson Bay

Project: 219-97

Period: 23 July - 01 August

Area: Hudson Bay

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The objectives of this project are to (1) obtain breeding population and production estimates for Canada geese on their nesting grounds, and (2) band and collar geese as part of an ongoing program. The goal is to complete these tasks in a single time period. The baseline data on distribution, survival and population size collected will help in the effective management of this population of Canada geese. This project is part of an international program involving wildlife agencies and non-governmental groups in Canada and the United States.

Comparative Studies of Seabird Foraging and Reproductive Ecology at the Northwater Polynya, Baffin Bay, 1997

Project: 214-97

Period: 25 July - 30 August

Area: Cambridge Point/Coburg Island

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The Northwater Polynya (NOW) is located in north Baffin Bay between Greenland and the east coasts of Ellesmere and Devon islands. It is generally believed that the high concentration of mammals and seabirds in and around the margins of the NOW is a consequence of high primary productivity which results in great availability of plankton and fish prey. Variations in ocean temperatures within the polynya may affect phytoplankton production and higher trophic levels on the east and west margins of the polynya. This project will examine this by comparing aspects of seabird reproduction and foraging at Coburg Island, Canada, as part of the International Northwater Polynya Project.

Rat River Charr Spawning Habitat Assessment Project

Project: 303-97

Period: August - September

Area: Fish Creek

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The Rat River Charr Spawning Habitat Assessment Project is aimed at determining the location and dimensions of the spawning habitat used by charr in the Rat River Drainage Basin. Neither the communities that harvest these charr nor the management biologists know the specific location and extent of the spawning habitat in this system. Research in the early 1970s observed that spawning likely occurs in late August in the Fish Creek tributary, however, this research did not document the location of the actual spawning bed(s). This project will locate, map, measure, and describe the spawning bed(s) of Fish Creek that are used by charr. This information will not only be important in insuring that the areas remain protected, but will be used in the development of a long-term management plan for the stock.

Ecology and Energetics of High Arctic Shorebirds

Project: 221-97

Period: 01 August - 15 September

Area: Alert/Ellesmere Island

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The objectives of this project are to determine the energy budgets and requirements of shorebirds on their High Arctic breeding grounds in order to understand how and where energetic constraints may affect the birds' survival during their annual cycle and, how climate and climate change may affect their distribution and survival in the Arctic.

Canada Goose Surveys and Banding on Southampton Island

Project: 218-97

Period: 05-20 August

Area: Boas River

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The objectives of this project are to: 1) obtain breeding population and production estimates for Canada geese on their nesting grounds, and; 2) band and collar geese as part of an ongoing program. The goal is to complete these tasks in a single time period. The baseline data on distribution, survival and population size collected will help in the effective management of this population of Canada geese. This project is part of an international program involving wildlife agencies and non-governmental groups in Canada and the United States.

Canada Goose Surveys and Banding on Baffin Island

Project: 209-97

Period: 06-20 August

Area: Nikko Island/Cape Dominion Esker

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The objectives of this project are to 1) obtain breeding population and production estimates for Canada geese on their nesting grounds, and 2) band and collar geese as part of an ongoing program. The goal is to complete these tasks in a single time period. The baseline data on distribution, survival and population size collected will help in the effective management of this population of Canada geese. This project is part of an international program involving wildlife agencies and non-governmental groups in Canada and the United States.

Grizzly Bear Habitat Assessment in the Fishing Branch River Area

Project: 306-97

Period: 20-31 August

Area: Fishing Branch River Area

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The Fishing Branch Ecological Reserve (160 km^2) was established by the Vuntut Gwich'in First Nation Final Agreement. Grizzly bears are a key component of the reserve. Habitat assessment is required to determine appropriate boundaries of a habitat protection area which will surround the Ecological Reserve and provide adequate protection to conserve the grizzly bear population.

Life History Variation, Population Dynamics of Charr and Lake Trout in Peter Lake, N.W.T.

Project: 108-97

Period: 25 August - 08 September

Area: Peter Lake

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The Peter Lake system is the spawning area for charr and lake trout harvested by the Rankin Inlet community. To test the hypothesis that charr and lake trout resources are threatened by contaminants such as toxiphene, the life history and population dynamics of Peter Lake charr and lake trout will be examined.

Hornaday River Charr: Confirmation of Spawning Areas

Project: 111-97

Period: 06-08 September

Area: Paulatuk

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In August 1995, 21 Arctic charr from the Hornaday River stock were tagged with radio transmitters and tracked from August 1995 - October 1996. The results of the tagging/tracking program indicated that the most likely area where searun Hornaday charr spawn is three holes in the section of the Hornaday mainstem from Coalmine to the mouth of Aklak Creek. The 1997/98 project proposal is aimed at confirming spawning activity in the mainstem areas suggested by the radio tagging project and to determine the approximate time of spawning.

Rat River Charr: Petersen Estimate of Abundance

Project: 112-97

Period: 25 September - 10 October

Area: Fish Creek (Rat River)

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This project is designed to determine the size distribution and life history composition of the Rat River charr population found at the fish hole on Fish Creek. It will also determine the number of spawners and non-spawners at this site using a multiple mark recapture estimate. As a result, it will provide a 'baseline' with which similar research sometime in the future can be compared to determine whether there has been changes (environmental or fishery related) in the overall size and composition of the spawning component in the Rat River.

BOTANY

Experimental Analysis of Interactions Between Caribou, Plants and Soils on the Calving Ground of the Porcupine Caribou Herd

Project: 630-97

Period: 15 May - 15 August

Area: Sheep Creek Camp/Kimakuk Camp

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Caribou calving grounds are considered critical habitat for barren-ground caribou. However, data on habitat characteristics and interactions between caribou, vegetation and soils on calving grounds are limited and no comparisons with unused adjacent areas have been made. Results of this study will assist responsible government agencies when developing operating guidelines and regulations regarding types and timing of activities within caribou calving grounds.

Causes and Consequences of Biodiversity Change in High Arctic Tundra

Project: 636-97

Period: 29 May - 15 August

Area: Alexandra Fiord/Sverdrup Pass/Eastwind Lake/Hot Weather Creek/Princess Marie Bay

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Factors affecting diversity in tundra communities, and the impacts of diversity on ecosystem function are poorly known. Causes and consequences of changes in biodiversity of High Arctic tundra will be determined using a combination of experimental manipulation and descriptive sampling along gradients of climate, grazing intensity and soil moisture. Manipulations will include removing dominant species/functional group; increasing seed density; and combinations of density changes, passive warming, fertilization, and changes in snow depth to alter growing season length. The research will be concentrated at the well-studied lowland at Alexandria Fiord, Ellesmere Island, and will address needs identified by ITEX, IGBP-GCTE, IASC and the Biodiversity Science Board of EMAN.

Estimation of the Carrying Capacity of Breeding Areas of the Greater Snow Geese on Bylot Island

Project: 628-97

Period: 11 June - 20 August

Area: Bylot Island

Name: Rochefort, Line

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The Greater Snow geese population breeding in the High Arctic has considerably increased in the last two decades from 150,000 individuals in 1975 to 600,000 in 1995. The main goal of this project is to estimate the carrying capacity of the Snow geese breeding habitat on Bylot Island (73° N). The approach will be to compare requirements of the geese and available resources (quantity and quality).

Constraints on Nutrient Cycling in Severely Grazed Arctic Ecosystems: The Role of Mosses

Project: 617-97

Period: 13 June - 13 August

Area: Bylot Island Base Camp

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In some snow goose colonies, vascular plant growth is increased because geese add N to the vegetation they graze. In contrast, growth of vegetation in moss-dominated colonies like that on Bylot Island is unaffected or reduced by grazing. My principle objective is to determine if mosses prevent plants from responding to N additions by geese. I will follow movements of added N through the system and will experimentally determine whether the presence of mosses reduces the growth of other plants.

Comparison of the Stream Algae in Four Drainage Basins in the Central Arctic Near Cambridge Bay

Project: 601-97

Period: 21-25 June

Area: Cambridge Bay

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Dean's Office
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College of Biological Science
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Stream macroalgae and periphyton will be collected from four drainage basins in the central Arctic, two northwest of Cambridge Bay and two in the Melville Sound region on the mainland to the south. At least 12 stream reaches will be sampled throughout each basin and various physical and chemical characteristics will be measured.

Molecular Systematics of Arctic Grasses

Project: 508-97

Period: 14 July - 16 August

Area: Shingle Point/Irene Bay/Ekblaw Lake/Expedition Fiord

Name: Gillespie, Lynn J.

Canadian Museum of Nature
Research Division
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This research focuses on systematic problems, hybridization and genetic variation in Canadian Arctic grasses. We are testing hypotheses of hybrid origin in the genus Poa using molecular techniques combined with field observations on reproductive biology, ecology and distribution. We are also re-examining the systematic status of several poorly known species of Puccinellia that are considered to be rare Nearctic endemics.

Genetic Biogeography of Mielichhoferia (Musci)

Project: 705-97

Period: 29 July - 07 August

Area: Tanquary Fiord

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The goals of this research are to determine if moss populations growing in Arctic regions that were not completely ice-covered during the last glacial advance contain exceptionally high levels of genetic variability. Molecular genetic data obtained from samples collected on northern Ellesmere Island will complement information already gathered from populations to the south in Canada and the U.S., and will be supplemented by data gathered from plants growing in Alaska and the Yukon Territory. Molecular data will also be used to assess the importance of long distance dispersal between Arctic and alpine sites.

CLIMATOLOGY

Ice Core Analysis, Glacier Mass Balance and Snow Pollution

Project: 006-97

Period: 12 March - 12 May

Area: Melville, Meighen, Agassiz, Devon and Penny Ice Caps

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To measure the mass balance of four ice caps to monitor climatic change. To drill an ice core to 100 m and study variations of snow chemistry, ice layering (summer temperatures), pollen (sources and sinks) and stable isotopes (annual temperature) of that core and spatially over the Devon Ice Cap.

Hydrological Studies - Mackenzie Delta Area

Project: 224-97

Period: 10 April - 15 June

Area: Inuvik/Trail Valley Creek

Name: Marsh, Philip

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This study is aimed at improving our understanding of processes controlling snow accumulation, snowmelt, and rainfall runoff in permafrost environments, and the related hydrogeochemical fluxes. Collaboration through the Canadian GEWEX program will allow integration of land surface and atmospheric processes and models. This work has implications for predicting snow melt flooding, global change/climate change and the flux of nutrients and pollutants through northern ecosystems.

Measuring and Modelling Evaporation and Water Balance in Permafrost Regions of the Mackenzie Basin

Project: 602-97

Period: 15 May -30 August

Area: Trail Valley Creek (Inuvik)

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Detailed year-round measurements of evaporation, energy balance components and soil temperatures from characteristic landscape units (dry and wet tundra, birch tundra, open subarctic forest) are being used for calibrating evaporation-water balance models which can be used for examining times past, when a meteorological record is available, and for predicting impacts of climate change on the water balance of these terrain types in times future. Emphasis is on both individual terrain types and on their interactions. This research is integrated closely with ongoing hydrologic investigations aimed at modelling water yield and stream flow in permafrost regions of the Mackenzie Basin.

Air and Ground Temperature Monitoring

Project: 015-97

Period: 15-23 July

Area: Mackenzie Valley and Delta

Name: Nixon, Mark

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Paired air and ground surface temperature records are being collected at 27 remote natural sites throughout the Mackenzie Valley and Delta at a frequency of five readings daily. The goal is to establish a relationship of air temperature to surface temperature for a number of representative natural environments. Complementary studies include monitoring, seasonal penetration and ground truthing remotely sensed vegetation classifications for modelling.

Ecology and Energetics of High Arctic Shorebirds

Project: 221-97

Period: 01 August - 15 September

Area: Alert/Ellesmere Island

Name: Morrison, R.I.G.

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morrisg@nwrc.cws.doe.ca

The objectives of this project are to determine the energy budgets and requirements of shorebirds on their High Arctic breeding grounds in order to understand how and where energetic constraints may affect the birds' survival during their annual cycle and, how climate and climate change may affect their distribution and survival in the Arctic.

GENERAL

Wild Encounters III (Polar Bear, Walrus) **Project**: 804-97

Period: 01-30 April

Area: Lancaster Sound/Bathurst Island

Name: Karvonen, Albert

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The project is part of a series of 25 minute natural history documentary films. The major focus of this expedition will be to film polar bears and walrus in their natural environment. The films will pay special attention to natural behaviour and biological accuracy.

Permafrost and Ground Ice Investigations, Western Arctic Coast **Project**: 626-97

Period: April - August

Area: Illisarvik/Gary Island/Todd Lake/ Pingo 15

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The intention is to continue long-term investigations on the growth of pingos and ice wedges at several sites in the Tuktoyaktuk coastlands, and to complete a six-year project on permafrost conditions near tundra lakes. A ground temperature monitoring site will be established on Gary Island.

Ellesmere Island National Park Reserve

Project: 501-97

Period: May - August

Area: Tanquary Fiord/ Lake Hazen/Ward Hunt Island

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Ellesmere Island National Park Reserve
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EINPR is the most northerly park in Canada's National Park System. Its prime mandate is that of ensuring the "ecological integrity" of this 37.775 km^2 area which represents the eastern High Arctic glacier natural region.

Periglacial and Permafrost Geomorphology
B.A. report

Project: 610-97

Period: 31 May - 04 June

Area: Tuktoyaktuk

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The project consists in the production of an illustrated inventory of geomorphological phenomena associated with permafrost in the region of the Mackenzie Delta, N.W.T. The inventory will be used as a teaching tool by the University of Sherbrooke's Department of Geography and Remote Sensing. The field work consists in observing and taking photographs and video images of landforms associated with permafrost in the Mackenzie Delta area.

High Arctic Data Communications System Mark II (HADCS II)

Project: 502-97

Period: June - August

Area: Resolute/Eureka

Name: Dion, Benoît

Project HADCS II
SRS Modernization Projects
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HADCS II is a project to modernize and upgrade the existing communications link between CFS Alert and Ottawa. Its mandate is to provide a more secure, high speed and ultra reliable system. The actual upgrade will consist of Microwave, Comms Interface, and Satellite upgrade installations commencing 29 May to approximately the end of August 1997. A proposed upgrade remote power system is forecasted for 1998/99.

White-fronted and Canada Geese of the Central Canadian Arctic

Project: 210-97

Period: 20 June - 07 July

Area: Queen Maud Gulf Bird Sanctuary/Inglis River/King William Island/Adelaid Peninsula/Bathurst Inlet/Coppermine/ Pelly Bay/Repulse Bay/Baker Lake/ Chesterfield Inlet/Rankin Inlet

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Helicopter supported surveys will fill in the gaps in our knowledge of the numbers of white-fronted geese and small Canada geese which nest in the central Canadian Arctic. Results will help extend and improve the information being used to manage the conservation of these geese in North America (Canada, U.S.A. and Mexico).

Biostratigraphy of a Tertiary Vertebrate Locality at Strathcona Fiord

Project: 500-97

Period: 01-29 July

Area: Strathcona Fiord

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The object of this study is to add to our knowledge of the vertebrate from this beaver-pond site near Strathcona Fiord by collecting bones and other fossils so as to better understand: (1) evolutionary relationships and dispersal histories of previously unknown Pliocene vertebrates in the Arctic; (2) a unique "boreal forest" margin environment that existed in Pliocene time; and (3) the geological age of the deposit.

Fuel Cache Cleanups

Project: 110-97

Period: 15 July - 15 August

Area: Babbage River/Big Fish River

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Previous fisheries research projects have left fuel caches at two sites, one at the Babbage River and the second at the Big Fish River. These projects are now completed, but fuel caches require removal. Caches include full, partially full and empty drums, approximately four drums (45 gal.) per site. Other material, as tent frames, may also be at sites and will require returning to Inuvik.

(A) Bio-optical Algorithm Validation
(B) Radionuclide Contamination

Project: 702-97

Period: 15 July - 02 September

Area: Barrow Strait

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Our bio-optical research is aimed at developing and validating algorithms for satellite remote sensing of ocean colour at high latitudes. These relationships will make it possible to determine phytoplankton biomass and productivity accurately from space. We are also assessing possible radionuclide contamination from the Former Soviet Union (FSU) in organisms consumed directly by humans. The FSU dumped radioactive waste in the Arctic Ocean which may eventually become incorporated into marine foodwebs at considerable distance.

GEOLOGY

Geological Evaluation of the Yathkyed-Imikula Lakes area

Project: 300-97

Period: 01 June - 10 August

Area: Yathkyed/Imikula Lakes

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This mapping project is designed to evaluate mineral potential and to determine the geological history and tectonic setting of the map area. Bedrock mapping will be carried out at 1:50,000 scale as a contribution to the proposed western Churchill NATMAP program (GSC).

Western Churchill Mapping Program - Quaternary Geology Studies

Project: 014-97

Period: 02 June - 31 July

Area: Kaminak, Quartzite, Yathkyed and Meliadine Lakes

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The Western Churchill Mapping Program is a multi-agency and multi-disciplinary initiative conducted by the Geological Survey of Canada in the District of Keewatin. The principle objective of the Program is to provide geological maps of the supracrustal belts located within the western Churchill province of the Canadian Shield. The Quaternary geology component of the Program will consist of detailed mapping and geochemical prospecting over selected greenstone belts and regional systematic ice flow indicator mapping related to the Keewatin ice divide.

Effect of Climatic Change on Solifluction, Fosheim Peninsula, Ellesmere Island

Project: 615-97

Period: 10 June - 10 August

Area: Hot Weather Creek

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This research is an experimental study of the effect of climate on solifluction (slow downslope movement of the active layer), one of the most important geomorphic processes in permafrost areas. Surface treatments (warming, wetting, a combination of the two, and cooling) were applied at an experimental site in 1996 and the effects recorded relative to a control. The aim in 1997 is to examine the lagged influence of these treatments on movements during freeze-up in 1996 and the upcoming summer.

Project: 017-97

Western Churchill NATMAP - Kaminak Greenstone Belt Project (Bedrock Component)

Period: 10 June - 31 August

Area: Rankin Inlet

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The Western Churchill NATMAP initiative is a multi-disciplinary, multi-agency collaborative programme involving GSC, GNWT, INAC with active participation of university-based scientists. The first order objective is to understand the formation of the late Archaean continental crust of the Western Churchill Province and the subsequent Paleoproterozoic intracontinental tectonic history, 2.8 - 1.7 billion years ago. The Kaminak Project component of the programme (1997) will comprise bedrock mapping at 1/50,000 - 1/125,000 scales and establishing the history of the greenstone belt between Tavani and Padlei hamlets.

Geomorphological Study of Limestone Massifs in Northern Yukon

Project: 627-97

Period: 15 June - 15 July

Area: Richardson Mountains

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The objective of the research program is to assess the effect of climate changes at the end of the Pleistocene on the geomorphology of the limestone massifs in northern Yukon.

South Baffin Multidisciplinary Project (Bedrock Component)

Project: 016-97

Period: 16 June - 31 August

Area: South Baffin Island

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The South Baffin Project is a three-year multidisciplinary project to investigate the geology of NTS sheets 25 K, L, M and N. Field aspects of the project in 1997 include bedrock geological mapping of 15 000 km^2 at 1:100 000 scale SE of Kimmirut and Iqaluit, mapping of surficial deposits at 1:250 000 scale, airborne aeromagnetic surveys and rock/mineral identification for local residents, Inuit carvers and geologists from mineral exploration companies. Work in 1997 will centre on Barrier Inlet.

Phanerozoic Bedrock Mapping **Project:** 004-97

Period: 21 June - 07 August

Area: Dobbin Bay/Allman Bay/Jolliffe Glacier/Daly River

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Summer field activities are a continuation of previous summer's work on four 250,000 scale map sheets between Bache Peninsula and northern Judge Daly Promontory. Stratigraphic and structural analyses will be undertaken from several two-man fly camps mainly in the two northern map sheets.

HAUGHTON-MARS 97 (HM-97): Study of the Haughton Impact Structure, Devon Island, Northwest Territories, as a Mars Analog **Project**: 700-97

Period: 21 June - 07 July

Area: Haughton Crater, Devon Island

Name: Lee, Pascal

National Aeronautics and Space Administration (NASA)
Ames Research Center
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HAUGHTON-MARS 97 is a NASA/NRC-proposed study of the Haughton impact crater, Devon Island, N.W.T., viewed in the perspective of a Mars analog. The cold, relatively dry, windy and unvegetated environment of the High Arctic is akin to that prevailing on Mars (and more particularly early in that planet's history), offering a unique opportunity to investigate here on earth, some of the geologic and possibly biologic processes that presided over the evolution of Mars. A team of four planetary scientists from NASA's Ames Research Center will be conducting the Mars-related field work at the crater during the 1996 field season.

Upper Paleozoic Basin Analysis, Sverdrup Basin, Canadian Arctic

Project: 002-97

Period: 22 June - 02 August

Area: Eureka

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To gather stratigraphic information and to map units of Carboniferous and Permian age in the Sverdrup Basin, Canadian Arctic. Data acquired through this project will be useful for future hydrocarbon and mineral exploration, and will have a direct link to wealth generation for the local northern communities and Canadians in general.

Geochemistry of Late Mesoproterozoic Carbonate and Evaporite Sediments

Project: 701-97

Period: 25 June - 10 August

Area: Tay Cliffs/Bylot Island

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Continental orogeny and increased erosional fluxes related to pre-Grenvillian and Grenvillian tectonics (1300 - 960 Ma) are purported to have led to increased organic carbon burial, a rise in atmospheric oxygen, and increased biological fractionation of sedimentary sulfur. We propose a detailed stratigraphic study of C, O, S and Sr isotopes from the Society Cliffs Formation, Baffin Island, to explore the hypothesis that global tectonic events influenced biologic C, O and S cycling in late Mesoproterozoic marine environments.

Surficial Geology of Southern Baffin Island **Project:** 012-97

Period: 25 June - 10 August

Area: Baffin Island

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Regional mapping of surficial materials and landforms of southern Baffin Island (NTS 26K, 26N).

Slave Province Evolution and Metallogeny **Project:** 505-97

Period: July - August

Area: Kikerk Lake

Name: Jackson, Valerie

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Detailed field studies and accompanying geochronological and geochemical sampling of rock assemblages in the western and north-central Slave Structural Province.

Fossil Plants of Arctic Canada **Project:** 612-97

Period: 01-31 July

Area: Geodetic Hills, Axel Heiberg Island

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The fossil forests of Axel Heiberg Island represent the single most important source of materials in our regional study of the early evolution of northern coniferous and broad-leaved deciduous forests. The 1997 field season will be aimed at recollection of the critically important flood plain vegetation, a component of the local flora that is not yet well documented.

Haughton Impact Structure II: Geoscience at a 24 km Impact Crater **Project:** 901-97

Period: 01-26 July

Area: Haughton Impact Crater, Devon Island

Name: Sharpton, V.L.

Lunar and Planetary Institute
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USA

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A group of two Canadian and three U.S. geoscientists of the Lunar and Planetary Institute, Houston, Texas, and the Geological Survey of Canada, will conduct a detailed geological mapping and sampling program, a study of impact related deformation of target rocks, and a gravity survey in and around the Houghton Impact Crater, Devon Island. Emphasis will be on breccia characterization, a study of shock metamorphism of carbonate rocks and the establishment of a refined subsurface gravity model.

Surficial Geology Mapping in the Slave Geological Province, N.W.T.

Project: 011-97

Period: 01 July - 07 August

Area: Windy Property

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Mapping of surficial sediments and landforms, establishing ice flow patterns, and glacial history regional till sampling to create a predevelopment geochemical database in an area where such data are needed for environmental assessments and to assist mineral exploration in an area of high potential.

Quaternary Geology, Southern Melville Peninsula

Project: 009-97

Period: 01 July - 10 August

Area: Southern Melville Peninsula

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This project provides maps and baseline information on the Quaternary geology of the southern half of Melville Peninsula. Surficial geology maps for the region have already been released as part of this project. This year's field work will concentrate on several areas where more intensive work is needed to interpret glacial history and ice flow.

Metallogeny on Rankin Ennadai Belt

Project: 503-97

Period: 07 July - 25 August

Area: Kammak Lake/Woodburn Lake/Nowyak Lake

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A systematic sampling of mineral showings in the Rankin - Ennadai Belt (Kammak Lake area) and Yathkyed Lake area will be carried out in order to document mineral paragenesis and alteration as an aid to mineral (especially gold) exploration. This will be done in conjunction with geologists from GSC and RWED (GNWT). The Woodburn Lake group (near Baker Lake) will constitute a smaller area of similar study.

Surficial Geology of Bathurst Island, Northwest Territories

Project: 008-97

Period: 09-23 July

Area: Scoresby Hills/Greenwich Hills/Shamrock Bay

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As part of a Mineral and Energy Resource Assessment, Terrain Sciences, Geological Survey of Canada, began field investigations on the Bathurst Island group, southern Queen Elizabeth Islands. The objective is to map the surficial geology and gather data on Quaternary glaciations, till geochemistry and sea level history.

Wenlock-Ludlow Graptolite Taxonomy and Biostratigraphy

Project: 600-97

Period: 08-22 July

Area: Baillie Hamilton Island/Snowblind Creek/Abbott River

Name: Lenz, Alfred C.

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University of Western Ontario
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A detailed sampling and study of upper Wenlock-Ludlow graptolite taxonomy, stratigraphic ranges, biostratigraphy and evolution. Particular focus will be on the late Wenlock graptolite extinction and evolutionary recovery event.

Permafrost and Coastal Studies, Tuktoyaktuk Coastlands

Project: 010-97

Period: 15 July - 05 August

Area: Richards Island

Name: Dallimore, S.R.

Natural Resources Canada
Geological Survey of Canada
Terrain Sciences Division
601 Booth Street
Ottawa, ON
K1A 0E8

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E-mail: dallimore@gsc.nrcan.gc.ca

Permafrost plays an important role in controlling geomorphic processes and coastal stability in the Tuktoyaktuk coastlands area. During the summer of 1997, field work will concentrate on a) regional geomorphology/permafrost conditions of lakes on Richards Island; b) maintaining and resurveying of instrumented landslide sites and c) ground truthing of newly acquired RADARSAT images. The latter task will be carried out in association with the Canada Centre for Remote Sensing as part of a new project to evaluate RADARSAT applications in coastal environmental studies. Task a) is in association with C.R. Burn, Carleton University.

The Evolution and Interrelationships of Lungfishes Within a Diverse Early Devonian Marine Community

Project: 506-97

Period: 15 July - 14 August

Area: Anderson/Snake Rivers

Name: Cumbaa, Stephen

Canadian Museum of Nature
P.O. Box 3443, Station D
Ottawa, ON
K1P 6P4

Tel.: (613) 941-0051
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E-mail: scumbaa@mus-nature.ca

Our team proposes further exploration of a locality discovered by us in 1995 which produced a unique assemblage of Early Devonian lungfish and other fossil fishes along the Anderson River, NWT. In addition, we plan to examine rocks of the same age along tributaries of the Snake River, YT, to see if they produce fossils representing a similar fauna and paleoenvironment. These field studies support our research on the evolution and interrelationships of early marine bony fishes and their paleoenviroments.

Geology of Eastern Prince of Wales Island

Project: 003-97

Period: 18 July - 11 August

Area: Prescott Island/ Flexure Bay/Back Bay

Name: Mayr, Ulrich

Natural Resources Canada
Geological Survey of Canada, Calgary
Sedimentary & Marine Geoscience
3303 - 33rd St. N.W.
Calgary, AB
T2L 2A7

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Project comprises compilation of existing GSC and industrial data to produce GSC Bulletin and two 1:250,000 A-series geological maps. Field work is required to complete and update existing GSC data. Project is part of GSC project 850039 (Investigation of the Stratigraphy and Tectonic Development of the Lower Paleozoic Platform Marginal Zone).

Ice Scouring: Seafloor Disturbance by Drifting Ice Keel

Project: 018-97

Period: 22 July - 15 August

Area: Resolute

Name: Blasco, Steve

Natural Resources Canada
Geological Survey of Canada, Atlantic
Bedford Institute of Oceanography
1 Challenger Drive, P.O. Box 1006
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B2Y 4A2

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E-mail: blasco@agc.bio.ns.ca

From 1992 to 1996 the same sector of seabed along the coast at Resolute Bay was resurveyed annually using GOS positioned sidescan sonar. The repetitive mapping program will be conducted again in 1997. Correlation of year to year data results in the identification of new ice scours and scour morphology changes with time. Observations will be used to determine spatial and temporal scour impact rates, degradation rates and extreme scour depth distribution.

Coastal Impacts of Climate Change

Project: 019-97

Period: 01-20 August

Area: North Head

Name: Forbes, Donald

Natural Resources Canada
Geological Survey of Canada, Atlantic
Bedford Institute of Oceanography
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B2Y 4A2

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The main objectives of the field program are to improve our understanding of coastal processes in the Canadian Beaufort Sea and to acquire information which can be used to develop and calibrate predictive models of coastal change. The program in 1997 will focus on acquiring beach and nearshore morphological information and thaw depth data at sites of ongoing GSC monitoring.

GEOPHYSICS

To Acquire High Resolution Reconnaissance Aeromagnetic Data in the Lincoln Sea Area of Northeast Canada and Northwest Greenland

Project: 001-97

Period: April-May

Area: Lincoln Sea

Name: Forsyth, D.

Natural Resources Canada
Geological Survey of Canada
Continental Geoscience Division
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K1A 0Y3

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1989-1991 PMAP data have revealed a major new incipient rift beneath the Lincoln Sea crossing the continental shelf from north of Greenland to north of Ellesmere Island and a possible trace of the suture produced by the docking of Pearya terrane with North America. The multi-agency Canadian and German group is attempting to better understand the features discovered in the 1989-1991 work by extending the aeromagnetic coverage to include available geological calibration on Greenland and in the offshore north of Ellesmere Island. By default, the work will provide the first aeromagnetic map of one of the least known areas on earth.

Permafrost Geophysics

Project: 013-97

Period: 01-18 April

Area: Illisarvik/Richards Island/Lousy Point

Name: Hunter, J.A.

Natural Resources Canada
Geological Survey of Canada
Terrain Sciences Division
601 Booth Street
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K1A 0E8

Tel.: (613) 992-2560
Fax.: (613) 992-2468

This project is directed towards the design and testing of geophysical equipment and techniques for mapping permafrost structure and physical properties of earth materials. Such techniques are used by Canadian industry to help define thaw zones in permafrost (taliks and cryopegs), ice content (involving massive ice definition) as well as geological structure of frozen materials.

Haughton Impact Structure II: Geoscience at a 24 km Impact Crater

Project: 901-97

Period: 01-26 July

Area: Haughton Impact Crater, Devon Island

Name: Sharpton, V.L.

Lunar and Planetary Institute
3600 Bay Area Boulevard
Houston, TX 77058
USA

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Fax: (713) 486-2162
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A group of two Canadian and three U.S. geoscientists of the Lunar and Plantetary Institute, Houston, Texas, and the Geological Survey of Canada, will conduct a detailed geological mapping and sampling program, a study of impact related deformation of target rocks, and a gravity survey in and around the Haughton Impact Crater, Devon Island. Emphasis will be on breccia characterization, a study of shock metamorphism of carbonate rocks and the establishment of a refined subsurface gravity model.

GLACIOLOGY

Ice Core Analysis, Glacier Mass Balance and Snow Pollution

Project: 006-97

Period: 12 March - 12 May

Area: Melville, Meighen, Agassiz, Devon and Penny Ice Caps

Name: Koerner, Roy M.

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Geological Survey of Canada
Terrain Sciences Division
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K1A 0E8

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To measure the mass balance of four ice caps to monitor climatic change. To drill an ice core to 100m and study variations of snow chemistry, ice layering (summer temperatures), pollen (sources and sinks) and stable isotopes (annual temperature) of that core and spatially over the Devon Ice Cap.

Hydrology and Dynamics of John Evans Glacier, Ellesmere Island

Project: 603-97

Period: 26 April - 28 May

Area: John Evans Glacier/Allman Bay/Ellesmere Island

Name: Sharp, Martin J.

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The overall aim of the project is to study the links between the hydrology and dynamics of a High Arctic glacier and to investigate its response to climate change. 1997 fieldwork will involve: (a) servicing and downloading three automatic weather stations installed on the glacier in 1996; (b) snow survey and mass balance measurements; (c) shallow ice coring in the zone of superimposed ice formation for purposes of mass balance reconstruction; (d) low frequency radio echo sounding for mapping of ice thickness and bed topography; (e) multiple frequency radio echo sounding for mapping the location of the 0°C isotherm and distribution of warm-based ice; and (f) multiple polarisation radio echo sounding for mapping of englacial reflectors such as englacial drainage channels.

Mass Balance of White and Baby Glacier, Expedition Fiord, Axel Heiberg Island, N.W.T.

Project: 631-97

Period: 13 May - 03 June

Area: Expedition Fiord/Axel Heiberg Island

Name: Ecclestone, Miles

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Department of Geography
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K9J 7B8

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A continuous mass balance record (time series) represents the direct connection between glaciers and climate. Such records are rare, particularly for the High Arctic which, outside of Greenland and Antarctica, contains a major share of the land ice on earth. Our analysis shows the White (and Baby) Glacier to be representative of Canada's High Arctic glaciers and, as such, they provide a useful climate record, necessary for models and predicting impacts of climate change (i.e., warming) in the High Arctic.

Recent Change at Barnes Ice Cap From Ground Surveys and RADARSAT SAR

Project: 616-97

Period: 28 June - 09 August

Area: Barnes Ice Cap

Name: Jacobs, John D.

Memorial University of Newfoundland
Department of Geography
St. John's, NF
A1B 3X9

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Field surveys will be carried out to coincide with imaging of Barnes Ice Cap by RADARSAT. Training areas previously selected from 1996 RADARSAT imagery and earlier Landsat TM will be surveyed and physical parameters measured to provide the basis for detailed analysis of the 1997 imagery. The objective is to develop a method based on satellite synthetic aperture radar (SAR) for the routine monitoring of Barnes Ice Cap and similar glaciers.

HYDROLOGY

Movement and Concentration of Oil and Gas Exploration Waste Fluids in a Permafrost Setting

Project: 007-97

Period: 01-15 April

Area: Beaufort/Mackenzie Delta Area

Name: Dyke, Larry

Natural Resources Canada
Geological Survey of Canada
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K1A 0E8

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Oil and gas exploration in the Beaufort-Mackenzie Delta area has relied on permafrost as a medium for containing waste fluids from drilling operations. If these wastes are to be routinely disposed of in future exploration or production programs, the true suitability of permafrost as a waste repository needs to be determined. It is proposed to sample sediments alongside drilling mud sumps in the Mackenzie Delta area to determine the degree to which sumps fluids have escaped in the subsurface. This field work will be complemented with laboratory studies to determine the importance of natural processes in promoting migration of contaminants away from sumps.

Hydrological Studies - Mackenzie Delta Area

Project: 224-97

Period: 10 April - 15 June

Area: Inuvik/Trail Valley Creek

Name: Marsh, Philip

Environment Canada
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11 Innovation Blvd.
Saskatoon, SK
S7N 3H5

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This study is aimed at improving our understanding of processes controlling snow accumulation, snowmelt, and rainfall runoff in permafrost environments, and the related hydrogeochemical fluxes. Collaboration through the Canadian GEWEX program will allow integration of land surface and atmospheric processes and models. This work has implications for predicting snow melt flooding, global change/climate change and the flux of nutrients and pollutants through northern ecosystems.

Snow Distribution and Snowmelt for Hydrological Studies

Project: 632-97

Period: 20 May - 30 June

Area: Resolute

Name: Woo, Ming-ko

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Extensive snow surveys are being conducted in Fosheim Peninsula and near Resolute to provide snow cover data to Calibrate Special Sensor Microwave Imagery satellite signals for developing an algorithm for snow mapping. The spatial variability of snowmelt will be studied to seek methods for calculating melt over large areas. One requirement is to set up an inland automatic weather station to determine whether the coastal data (obtained by government weather stations) is applicable to interior locations.

Hydrologic and Ecological Patterns of Saturated Zones Adjacent to Late-lying Snowbeds in the Canadian High Arctic

Project: 624-97

Period: 15 June - 15 August

Area: Resolute

Name: Young, Kathy Lynn

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Many late-lying snowbeds occur in breaks-of-slope and yield meltwater to adjacent zones throughout the Arctic summer. This water supply often allows luxurious vegetation to exist in an otherwise barren environment and, these sites are important local sources of food for Arctic fauna and migratory birds. This study seeks to understand the patterns and linkages between water flow, nutrients and plant growth in these types of environments; both level and sloping.

Hydrogeology in Permafrost Karst Terrains **Project**: 629-97

Period: 17-28 June

Area: Cache Creek Spring

Name: Clark, Ian D.

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This research examines the extent and impact of global warming on the hydrogeology of watersheds in permafrost karst terrains of the Canadian north. Modern systems are studies with aufeis and the carbonate geochemistry of watershed runoff. Fissure calcrete (endostromatolite) found within limestone terrains record past climatic optimums and, provide an analogue for groundwater recharge and flow during warmer Arctic climates.

LIMNOLOGY

Environmental Change, Truelove Lowland, Devon Island, N.W.T.

Project: 620-97

Period: 13 June - 04 August

Area: Truelove Lowland

Name: King, Roger H.

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N6A 5C2

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The present and past performance of the Truelove Lowland ecosystem, a High Arctic "oasis", are being examined using the biological and chemical record preserved in the sediments in one of the largest of the Lowland's freshwater lakes. Interpretation of this record is being aided by an analysis of the relationships between the physico/chemical characteristics of the present lakes in the Lowland and, measures of biological productivity together with a study of the mass transfers taking place within the surface materials in the lake catchments.

Biogeochemistry of Lakes in the Mackenzie Delta

Project: 622-97

Period: 16 June - 29 August

Area: Inuvik Research Centre

Name: Lesack, Lance

Simon Fraser University
Department of Geography
Burnaby, BC
V5A 1S6

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To determine the interacting biogeochemical and hydrologic processes that are controlling the cycling of nutrients and rates of primary production in aquatic ecosystems of the Mackenzie Delta. This study is part of a larger effort to develop a general understanding of nutrient cycling and primary production in aquatic ecosystems associated with the flood plains and deltas of major world rivers.

Limnology and Paleoecology of Arctic Lakes **Project**: 638-97

Period: 28 June - 18 July

Area: Barns Lake

Name: Smol, John P.

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Our limnological and paleolimnological studies are focussed on describing and correlating with environmental variables the algae and aquatic invertebrates of Arctic lakes. We then use the fossil assemblages of these organisms to interpret the paleoenvironmental histories of these lakes, centering on problems related to climatic change.

MARINE BIOLOGY

Role of Sound in Ringed Seal Navigation and Disturbance

Project: 704-97

Period: 15 March - 10 June

Area: Resolute

Name: Kelly, Brendan P.

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In winter and spring, the distribution of breathing holes in the sea ice limits the underwater range of ringed seals. Using an acoustic tracing system, we shall relate ringed seal movements and behaviour to (1) prey locations, (2) disturbance by predators, and (3) noise of known frequency and amplitude.

Beluga Whale Hunt Monitoring (Stinker Patrol)

Project: 104-97

Period: 15 July - 15 August

Area: Tuktoyaktuk

Name: Robinson, Neil

Department of Fisheries and Oceans
Conservation and Protection
Box 1871
Inuvik, NT
X0E 0T0

Tel.: (403) 979-3314
Fax: (403) 979-4330

Patrol north coast of Kugmallit Bay to King Point during aboriginal subsistence hunt; purpose is to get a number of how many dead animals wash up during and after the hunt. This provides an estimate on hunter success.

Monitoring of Browne Island Seabird Colony/Calibration of Sea Wifs Satellite

Project: 103-97

Period: 31 July - 28 August

Area: Brown Island

Name: Welch, H.E.

Department of Fisheries and Oceans
Freshwater Institute
501 University Crescent
Winnipeg, MB
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Tel.: (204) 983-5132
Fax: (204) 984-2403
E-mail: buster@magic.mb.ca

Monitoring of the Browne Island Kittiwake colony for the long-term analysis of populations and contaminants. "Ground-truthing" of the Sea Wifs Satellite.

North Baffin Narwhal Tagging

Project: 162-97

Period: 03-17 August

Area: North Baffin Island

Name: Richard, Pierre

Department of Fisheries and Oceans
Freshwater Institute
Resources Management Division
501 University Crescent
Winnipeg, MB
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Fax: (204) 984-2402
E-mail: richard@c-a.dfo.dfo-mpo.X400.gc.ca

Narwhals will be fitted with satellite linked transmitters in the waters of north Baffin Island during August. Data on fall migration/movements and dive behaviour will be collected.

Beaufort Sea Beluga Fall Tagging Program **Project:** 100-97

Period: 14-28 August

Area: Tuktoyaktuk

Name: Orr, Jack

Department of Fisheries and Oceans
Freshwater Institute
Resources Management
501 University Crescent
Winnipeg, MB
R3T 2N6

Tel.: (204) 984-2187
Fax: (204) 984-2402
E-mail: orr@c-a.dfo.dfo-mpo.X400.gc.ca

Beluga whales will be fitted with satellite linked transmitters to follow their fall migration and obtain diving behaviour.

MULTIDISCIPLINARY

Project: 201-97

Arctic Basin Buoy Deployments for the International Arctic Buoy Programme

Period: March - late April

Area: Mould Bay/Isachsen/Eureka

Name: Hudson, Ed

Environment Canada
Atmospheric Environment Branch
Arctic Weather Centre
Twin Atria Bldg., 2nd Floor
4999 - 98th Avenue
Edmonton, AB
T6B 2X3

Tel.: (403) 951-8878
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E-mail: hudsone@edm.ab.doe.ca

Buoys which provide surface atmospheric pressure, position, and in some cases temperature, are purchased, assembled inhouse or acquired from other participants of the International Arctic Buoy Programme (IABP). The buoys are deployed on the ice of the Arctic Basin. Meteorological and oceanographic data from these buoys is used for real-time operational requirements and research purposes including support to the World Research Program (WCRP) and the World Weather Watch (WWW) Program.

The IABP homepage http://iabp.apl.washington.edu shows the current map and listing of buoys.

Project: 608-97

Collaborative-Interdisciplinary Cryosphere Experiment (C-ICE '97)

Period: 01 April - 31 July

Area: Lowther Island

Name: Barber, David G.

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C-ICE is a continuation of the SIMMS initiative but is now based out of the University of Manitoba. C-ICE is a multi-disciplinary research program designed to develop methods by which microwave remote sensing data may be used to monitor changes in ocean-ice-atmosphere processes. This data is then used in modelling energy and mass fluxes at the ice surface during the spring transitional period.

Polar Bear Population Inventory

Project: 301-97

Period: 15 April - 25 May

Area: Resolute

Name: Taylor, Mitchell

Government of the Northwest Territories
Department of Resources, Wildlife and
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X0A 0H0

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Polar bear populations throughout Canada are periodically inventoried. The inventory provides estimates of population boundaries, population numbers and sustainable harvest rates for those populations. Harvest quotes are determined by the sustained yield. Our project will include the multi-year mark/recapture population inventory of the Kane Basin, Lancaster Sound, and Norwegian Bay polar bear populations. This is the final year of a seven-year project. The next populations to be inventoried are the M'Clintock Channell and Gulf of Boothia populations in the Kitikmeot.

A hydrologic Investigation of Mineralized Springs in the Expedition Fiord Area, Axel Heiberg Island, Northwest Territories

Project: 625-97

Period: 08 May - July 21

Area: Expedition Fiord

Name: Pollard, Wayne H.

McGill University
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This research is concerned with the investigation of perennial spring occurrence in the Expedition Fiord area of Axel Heiberg Island. The analysis of water chemistry, temperature and discharge rates will provide information on the source and age of the saline groundwater. Perennial springs are extremely rare in areas of deep continuous permafrost and their study could provide new information on High Arctic hydrology and biology.

Waterfowl Ecology - Central Arctic/Environmental Monitoring

Project: 302-97

Period: 15 May - 15 August

Area: Walker Bay Field Station/ Kent Peninsula

Name: Bromley, Robert G.

Government of the Northwest Territories
Resources, Wildlife & Economic Development
Wildlife and Fisheries Division
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X1A 3S8

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Long-term monitoring of the productivity of dark geese is used to supplement short-term intensive studies of their reproductive biology. Long-term environmental monitoring and associated studies of biodiversity at the Walker Bay Field Station complement ecological studies and provide base to the data for detecting the effects of climate change and other global processes.

Environmental Change, Truelove Lowland, Devon Island, N.W.T.

Project: 620-97

Period: 13 June - 04 August

Area: Truelove Lowland

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The present and past performance of the Truelove Lowland ecosystem, a High Arctic "oasis", are being examined using the biological and chemical record preserved in the sediments in one of the largest of the Lowland's freshwater lakes. Interpretation of this record is being aided by an analysis of the relationships between the physico/chemical characteristics of the present lakes in the Lowland and, measures of biological productivity together with a study of the mass transfers taking place within the surface materials in the lake catchments.

Taxonomic and Ecological Characterization of Freshwater Diatoms from Arctic Lakes and Ponds

Project: 637-97

Period: 28 June - 18 July

Area: Burns Lake, Victoria Island

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This is a continuing project whose focus is to describe the autecology of freshwater diatoms from a latitudinal gradient across the Arctic. Diatoms are excellent microfossils and these autecological data can be used in paleoenvironmental reconstructions. This field season will expand the data set to include diatom assemblages from shallow ponds and lakes on north eastern Victoria Island.

Paleoenvironmental Change in the Canadian High Arctic

Project: 611-97

Period: 20 June - 10 August

Area: Bay, Strathcona, Vendom, Baumann Fiords/ Cornwallis Island

Name: England, John

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This research concerns the nature and evolution of high latitude environments since the late Tertiary (the last two to three million years). It focuses on past glacial activity, sea level changes and proxy paleoenvironmental records derived from sea ice variations and lake sediments. Particular emphasis has been placed on the reconstruction of the last glacial maximum and the nature of postglacial emergence.

Holocene Paleoecology and Paleoclimatology of the Central Canadian Arctic Islands

Project: 635-97

Period: 01-15 July

Area: Burns Lake

Name: Gajewski, K.

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165 Waller Street
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K1N 6N5

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E-mail: gajewski@aixl.uottawa.ca

We are analyzing the pollen from lake sediment samples for paleoenvironmental studies. Pollen assemblages from modern sediment are related to large-scale vegetation and climate patterns. Cores are used to reconstruct the postglacial history of the vegetation and climate of northern Victoria Island.

Waterfowl and Wetland Studies, Old Crow Flats, Yukon

Project: 222-97

Period: 20 July - 10 August

Area: Old Crow Flats

Name: Hawkings, James S.

Environment Canada
Canadian Wildlife Service
Mile 917, 6B Alaska Highway
Whitehorse, YT
Y1A 5X7

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Fax: (403) 667-7962
E-mail: nancy.hughes@ec.gc.ca

This is a cooperative project between the Canadian Wildlife Service and the Vuntut Gwich'in First Nation. The project is designed to provide information useful in the management of the Old Crow Flats Special Management Area. The project focuses on the types, distribution, and dynamics of wetland habitats for waterfowl on the Old Crow Flats, and on the relationships between individual wetland characteristics and their use by moulting waterfowl.

The Evolution and Interrelationships of Lungfishes Within a Diverse Early Devonian Marine Community

Project: 506-97

Period: 15 July - 14 August

Area: Anderson/Snake Rivers

Name: Cumbaa, Stephen

Canadian Museum of Nature
P.O. Box 3443, Station D
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K1P 6P4

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Fax: (613) 954-4724
E-mail: scumbaa@mus-nature.ca

Our team proposes further exploration of a locality discovered by us in 1995 which produced a unique assemblage of Early Devonian lungfish and other fossil fishes along the Anderson River, NWT. In addition, we plan to examine rocks of the same age along tributaries of the Snake River, YT, to see if they produce fossils representing a similar fauna and paleoenvironment. These field studies support our research on the evolution and interrelationships of early marine bony fishes and their paleoenviroments.

International North Water Polynya Study

Project: 634-97

Period: August - September

Area: Icebreaker Louis S. St-Laurent
(Smith Sound/Baffin Bay)

Name: Fortier, Louis

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Arctic polynyas are recurring areas (10-90 000 km^2) of open water or reduced ice cover surrounded by frozen seas that serve as feeding, mating, spawning and overwintering grounds for key species in the Arctic marine ecosystem. Researchers from Canadian universities, the Department of Fisheries and Oceans, the Canadian Wildlife Service, the Atmospheric Environment Service, the Department of National Defence and their foreign collaborators have teamed up into a Research Network to study (1) the hydrodynamic and meteorological generation of the North Water polynya (northern Baffin Bay); (2) the intense planktonic production that supports the large mammal and bird populations in the North Water; and (3) the role of the North Water in sequestering atmospheric carbon dioxide. Field operations will begin in summer 1997 by the mooring of scientific instruments (current meters, sediment traps, etc.) at key locations in the North Water. The North Water ecosystem will be further studied during a 12-week expedition of the icebreaker Louis S. St-Laurent in the spring of 1998.

OCEANOGRAPHY

Ice Type and Thickness

Project: 226-97

Period: 14 March - 04 April

Area: Beaufort Sea

Name: Melling, Humfrey

Department of Fisheries and Oceans
Science - Pacific Region
Institute of Ocean Sciences
P.O. Box 6000
Sidney, BC
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Sonar positioned year-round at the seafloor are used to observe the movement, thickness and topography of drifting sea ice. This project, which expands earlier effort, will see the use of an imaging sonar to facilitate discrimination between multi-year and first-year ice in sonar recordings. Inter-annual variability in sea ice will be monitored at sites on the Mackenzie and Banks Island continental shelves. Data will be interpreted in relation to changes in Earth's climate.

(A) Bio-optical Algorithm Validation
(B) Radionuclide Contamination

Project: 702-97

Period: 15 July - 02 September

Area: Barrow Strait

Name: Cota, Glen F.

Center for Coastal Physical Oceanography
Old Dominion University
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Our bio-optical research is aimed at developing and validating algorithms for satellite remote sensing of ocean colour at high latitudes. These relationships will make it possible to determine phytoplankton biomass and productivity accurately from space. We are also assessing possible radionuclide contamination from the Former Soviet Union (FSU) in organisms consumed directly by humans. The FSU dumped radioactive waste in the Arctic Ocean which may eventually become incorporated into marine foodwebs at considerable distance.

SEA ICE

Ice Type and Thickness

Project: 226-97

Period: 14 March - 04 April

Area: Beaufort Sea

Name: Melling, Humfrey

Department of Fisheries and Oceans
Science - Pacific Region
Institute of Ocean Sciences
P.O. Box 6000
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Sonar positioned year-round at the seafloor are used to observe the movement, thickness and topography of drifting sea ice. This project, which expands earlier effort, will see the use of an imaging sonar to facilitate discrimination between multi-year and first-year ice in sonar recordings. Inter-annual variability in sea ice will be monitored at sites on the Mackenzie and Banks Island continental shelves. Data will be interpreted in relation to changes in Earth's climate.

TRADITIONAL KNOWLEDGE

Population Ecology and Management of Arctic Waterfowl

Project: 206-97

Period: 15 May - 05 August

Area: Tuktoyaktuk/ Big River/Egg River

Name: Hines, James E.

Environment Canada
Canadian Wildlife Service
Box 637
Yellowknife, NT
X1A 2N5

Tel.: (403) 920-8533
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E-mail: hinesj@yel.nt.doe.ca

Waterfowl are of great socio-economic importance to subsistence hunters in the Canadian Arctic and sport hunters and naturalists further south. The specific objectives of this project is to collect essential management-related information (population size, distribution, mortality, and productivity) on species harvested by the Inuvialuit: snow geese, white-fronted geese and brant.

Kitigaaryuit Cultural Mapping Project, Year Two

Project: 391-97

Period: 09-13 June

Area: Kitigaaryuit

Name: Hart, Elisa

Inuvialuit Regional Corporation
P.O. Box 2000
Inuvik, NWT
X0E 0T0

Tel.: (403) 979-2737
Fax: (403) 979-2135

Kitigaaryuit is an important Inuvialuit settlement at the mouth of the Mackenzie River which was declared a National Historic Site in 1978. The Inuvialuit Social Development Program (ISDP) is compiling information necessary to commemorate the site. The project includes hiring an archaeologist to assist with the mapping of the cultural resources of the site. The objective is to combine information from the Inuvialuit oral tradition and from the archaeological survey to produce a series of maps which reflects the changes in its use over time. The mapping of cultural resources began in the summer of 1996 and will continue in an adjacent area in 1997.

Qiniinaqtuq **Project:** 390-97

Period: 15-30 July

Area: Cape Dorset

Name: Hallendy, Norman

Box 1
Carp, Ontario
K0A 1L0

Tel.: (613) 839-2431
Fax: (613) 839-2431

The Qiniinaqtuq Project involves low-level aerial documentation of coastal and inland portions of southwest Baffin Island in co-operation with the Hamlet Council of Cape Dorset. Both electronic and photographic media will be employed with elders pointing out significant features during each traverse.

NUNALIRINIQ ("Total involvement with the land") **Project**: 392-97

Period: 01-30 August

Area: Eqe Bay

Name: Tapardjuk, Louis

Inullariit Elders Society
c/o Box 210
Igloolik, NT
X0A 0L0

Tel.: (819) 934-8910
Fax.: (819) 934-8910

The project will have two specific objectives: i) the transfer of traditional land-based skills and knowledge from Inuit elders to Inuit youth, and ii) the recording of traditional knowledge and oral histories relating to the Eqe area of west Baffin Island.

ZOOLOGY

Ringed Seal Distribution Detection by FLIR and Acoustic Tracking

Project: 101-97

Period: 01 March - 01 July

Area: Admiralty Inlet

Name: Innes, Stuart

Department of Fisheries and Oceans
Freshwater Institute
501 University Crescent
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R3T 2N6

Tel.: (204) 983-5057
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Ringed seal breathing holes and lairs have been detected by Forward Looking Infra-Red cameras (FLIR). This project will compare the distribution of lairs and breathing holes found by FLIR with those found by dogs and by tracking tagged seals. The seals that are tagged will also provide information on dive times, depths and spatial use to define habitat and behaviour prior to, during and after an ice breaker passes through the fast-ice habitat.

Population Ecology of Polar Bears in the Canadian High Arctic

Project: 633-97

Period: 02 April - 10 May

Area: Resolute

Name: Messier, François

University of Saskatchewan
Department of Biology
112 Science Place
Saskatoon, SK
S7N 5E2

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Population productivity, population estimates, space-use patterns, and sustained yield of polar bears are evaluated over two different sea-ice conditions; land-fast sea-ice (Viscount Melville Sound - McClure Strait area) and active sea-ice (Baffin Bay area). The project will provide ecological information on polar bear populations in the High Arctic, and the allocation of harvest quotas for bears compatible with international conservation policies for this species.

Hunting Behaviour of Free-Ranging Polar Bears

Project: 223-97

Period: 20 April - 20 June

Area: Radstock Bay, Devon Island

Name: Stirling, Ian

Environment Canada
Canadian Wildlife Service
5320 122nd Street
Edmonton, AB
T6H 3S5

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At Radstock Bay, on SE Devon Island, we are quantifying the activity budgets and hunting success of polar bears of different age and sex classes in order to model the energetic relationships between polar bears and ringed seals. Particular attention is being paid to hunting efforts of females with cubs of different ages.

Population Ecology and Management of Arctic Waterfowl

Project: 206-97

Period: 15 May - 05 August

Area: Tuktoyaktuk/ Big River/Egg River

Name: Hines, James E.

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Canadian Wildlife Service
Box 637
Yellowknife, NT
X1A 2N5

Tel.: (403) 920-8533
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E-mail: hinesj@yel.nt.doe.ca

Waterfowl are of great socio-economic importance to subsistence hunters in the Canadian Arctic and sport hunters and naturalists further south. The specific objectives of this project is to collect essential management-related information (population size, distribution, mortality, and productivity) on species harvested by the Inuvialuit: snow geese, white-fronted geese and brant.

Experimental Analysis of Interactions Between Caribou, Plants and Soils on the Calving Ground of the Porcupine Caribou Herd

Project: 630-97

Period: 15 May - 15 August

Area: Sheep Creek Camp/Kimakuk Camp

Name: Mueller, Frederick P.

University of Alaska
Institute of Arctic Biology
Fairbanks, Alaska
99775-0180 U.S.A.

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Caribou calving grounds are considered critical habitat for barren-ground caribou. However, data on habitat characteristics and interactions between caribou, vegetation and soils on calving grounds are limited and no comparisons with unused adjacent areas have been made. Results of this study will assist responsible government agencies when developing operating guidelines and regulations regarding types and timing of activities within caribou calving grounds.

Studies on Breeding and Migration of Greater Snow Geese

Project: 207-97

Period: 24 May - 20 August

Area: Bylot Island

Name: Reed, Austin

Environment Canada
Canadian Wildlife Service
Québec Region
1141, route de L'Église
Box 10100
Ste-Foy, PQ
G1V 4H5

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An improved understanding of the ecology of this important goose species is required to ensure proper management. This study examines changes in breeding numbers over time, investigates interactions between geese and their habitats, and monitors reproductive success and other population parameters. Systematic surveys are conducted every five years (next due 1998). Observations on breeding ecology and banding of large numbers of geese are conducted annually.

Reproduction Ecology of the Greater Snow Geese

Project: 605-97

Period: 24 May - 20 August

Area: Bylot Island

Name: Gauthier, Gilles

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Département de biologie
Centre d'études nordiques
Ste-Foy, PQ
G1K 7P4

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This project studies the population dynamic and plant/herbivore interactions in a goose population undergoing a rapid demographic expansion for the past two decades, the greater snow goose (*Chen caerulescens atlantica*) breeding on Bylot Island. A first objective is to examine the role of food availability (lower tropic level), predation (higher trophic level) and abiotic factors (thermal environment) in the regulation of this population. A second objective is to examine the impact of goose grazing on the vegetation of Bylot Island and the long-term effects of the population growth on Arctic wetland habitats.

Research on Migration and Selection of Nest Sites in Greater Snow Geese

Project: 607-97

Period: 27 May - 20 August

Area: Bylot Island

Name: Giroux, Jean-François

University of Québec in Montréal
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H3C 3P8

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My research in the Arctic involves greater snow geese (*Chen caerulescens atlantica*) and my first objective is to study the mechanism of nest site selection using radio-marked females. I want to test the hypothesis that predators influence nest site selection and subsequently the reproductive output of geese. The other objective of my work in the Arctic is to capture individual families during their molt to mark adult females with conventional radios. These birds are then tracked during the following fall and spring along the St. Lawrence river to establish their regional and local movements. I want to build a model to predict the use of different staging areas in order to establish an integrated management plan involving wildlife and agriculture.

Population Studies of King and Common Eiders in East Bay, Southampton Island

Project: 215-97

Period: 30 May - 08 August

Area: East Bay

Name: Gilchrist, Grant

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Canadian Wildlife Service
Northern Conservation Branch
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X1A 2N5

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Internationally important numbers of king and common eiders breed in the East Bay area of Southampton Island. King and common eider ducks are heavily hunted in Canada and Greenland. This study is designed to collect data on eider survival rates, reproduction, and sources of mortality. This demographic information is required for effective management of the eider harvest.

Breeding Ecology of Canada Geese in Ungava

Project: 205-97

Period: 01 June - 15 August

Area: Povungnituk/Kuujjuak

Name: Reed, Austin

Environment Canada
Canadian Wildlife Service
Box 10100
1141 Route de l'Église
Sainte-Foy, PQ
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Tel.: (418) 649-6128
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This study investigates breeding success of Atlantic Flyway Canada geese nesting in Ungava. The aim is to find the causes of poor breeding success that this population has experienced over the last decade.

Assessment of Creswell Bay, N.W.T., for Future Protected Area Designation

Project: 212-97

Period: 09-30 June

Area: Cresswell Bay

Name: Latour, Paul

Environment Canada
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Northern Conservation
Canadian Wildlife Service
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Yellowknife, NT
X1A 2N5

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Cresswell Bay is probably a very important nesting and staging area for shorebirds, waterfowl, and seabirds. At present, we have little information with which to assess the importance of Creswell Bay. This program is designed to assess the importance of Creswell Bay to Arctic shorebirds, waterfowl and seabirds in preparation for its consideration as a future protected area.

Lemming Population Dynamics in the Central and Western Arctic

Project: 604-97

Period: 10 June - 04 September

Area: Horton River/North Star Harbour/Nicholson Point/Anderson River/Shingle Point/Kay Point/Walker Bay/Wilmot, Jamieson, Hurd, Cockburn, Breakwater Islands/Hope and Byron Bays

Name: Krebs, Charles

University of British Columbia
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The 3-4 year population cycle of lemmings and their predators does not occur in synchrony over the entire Arctic. By doing regional surveys of lemming numbers in the western Arctic and in the central Arctic, we will address the question of how much these cycles are in phase on islands and on mainland sites. By detailed studies of lemmings and their predators within a 10 ha enclosure at Walker Bay, we hope to find out more about what causes these cycles.

Use of Satellite Telemetry to Locate King Eider Molting and Wintering Areas

Project: 220-97

Period: 11-27 June

Area: Kagloryuak River Valley,
Victoria Island

Name: Dickson, Lynne

Environment Canada
Canadian Wildlife Service
4999 - 98th Avenue, Room 200
Edmonton, AB
T6B 2X3

Tel.: (403) 951-8681
Fax: (403) 495-2615
E-mail: lynne.dickson@ec.gc.ca

Transmitters will be implanted in King Eiders nesting in the Kagloryuak River valley on Victoria Island, then the birds will be tracked by satellite to their molting and wintering areas in the Chukchi and Bering seas. With knowledge of wintering and molting areas, we will be in a better position to examine the causes of the recent population decline, and if necessary, take measures to protect key wintering and molting habitat.

Barren-Ground Grizzly Bear Studies

Project: 305-97

Period: 16 June - 07 July

Area: Coppermine/Bathurst Inlet/Chimo Bay

Name: Case, Ray

Government of the Northwest Territories
Department of Resources, Wildlife and
Economic Development
600, 5102 - 50th Avenue
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E-mail: ray_case@gov.nt.ca

Studies are being conducted on grizzly bears in the central Arctic to determine distribution, movement patterns, population units, productivity, critical habitats, food habits, foraging behaviour, and habitat use. This information will be used to assess potential impacts of non-renewable resource development, impacts of harvest, and to prepare a managment plan.

Distribution and Abundance of Pacific Eiders in the Central Arctic

Project: 203-97

Period: 01-11 July

Area: Cambridge Bay/Chimo Bay/Coppermine

Name: Dickson, Lynne

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lynne.dickson@ec.gc.ca

Key areas for nesting Pacific Eiders within Coronation Gulf and Queen Maud Gulf were identified in 1995, and a breeding population estimate was obtained in 1996. The primary objective of the 1997 field program is to get a second year of data on the size of the major nesting colonies in the region. These data will be used as a baseline for monitoring Pacific Eider population trends.

Population Surveys and Migration Patterns of the Common Eider of Southeast Baffin Island

Project: 225-97

Period: 01-17 July

Area: Southeast Baffin Island

Name: Gilliland, Scott

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Canadian Wildlife Service
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X1A 5B2

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Little is known about the Common Eider abundance and distribution along the coast of Baffin Island. This study is designed to estimate breeding populations and determine affinities to wintering areas. This information is required to make sound management decisions.

Behaviour and Ecology

Project: 900-97

Period: 01 July - 02 August

Area: Eureka

Name: Mech, L. David

U.S. Geological Survey
Biological Research Division
North Central Forest Experiment Station
1992 Folwell Avenue
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U.S.A.

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Direct behavioural and ecological observations are made of a wolf pack which has been habituated to the investigator's close presence since 1986. Individual pack members are recognizable, and their breeding and survival history has been monitored each year along with food provisioning, care of young, and social interactions.

Bowhead Whale Sampling

Project: 109-97

Period: 01 July - 15 September

Area: Resolute

Name: Hall, Patt

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Freshwater Institute
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R3T 2N6

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This project is designed to monitor the hunt and collect biological information from bowhead whales harvested under Ministerial license within the Inuvialuit and Nunavut settlement regions. We involve a community representative in the monitoring and sampling process, and train this individual to sample and measure future landed whales independently or with minimal supervision.

Beluga Whales in the High Arctic
Population Assessment and Acoustic Behaviour

Project: 802-97

Period: 12 July - 25 August

Area: Cunningham Inlet/Cunningham Bay

Name: Smith, Thomas G.

E.M.C. Eco Marine Corp.
R.R. 3, 3027 Rosalie Rd.
Ladysmith, BC
V0R 2E0

Tel.: (604) 245-5670
Fax: (418) 458-2604

Satellite transmitters will be applied to beluga whales in Cunningham Inlet, N.W.T., to determine their location and movements between estuaries and dive behaviour in deeper waters. Acoustic recorders will also be applied to beluga whales to document vocal behaviour and ambient sounds, with particular attention to low frequency noise associated with human activities (vessel traffic, aircraft, A.T.O.C.). The retrievable units will provide the first information of individual vocal responses in the natural environment, and set the stage for playback experiments designed to investigate the effects of specific anthropogenic sounds.

Walrus Distribution in the Resolute Bay and/or Grise Fiord Area

Project: 105-97

Period: 24 July - 24 August

Area: Gregory Peninsula/Bathurst Island/Ellesmere Island

Name: Stewart, Rob

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Freshwater Institute
501 University Crescent
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R3T 2N6

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E-mail: rob.stewart@c-a.dft.dfo-mpo.x400.gc.ca

Walrus in the Bathurst/Cornwallis Island area and/or the Grise Fiord area will be immobilized and fitted with satellite tags. Their movements will be monitored. Auxiliary behaviour data such as depth and duration of dives will also be collected.

Comparative Studies of Seabird Foraging and Reproductive Ecology at the Northwater Polynya, Baffin Bay, 1997

Project: 214-97

Period: 25 July - 30 August

Area: Cambridge Point/Coburg Island

Name: Gilchrist, Grant

Canadian Wildlife Service
Northern Conservation Branch
Environment Canada
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Yellowknife, NT
X1A 2N5

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E-mail: gilchristg@yel.nt.doe.ca

The Northwater Polynya (NOW) is located in north Baffin Bay between Greenland and the east coasts of Ellesmere and Devon islands. It is generally believed that the high concentration of mammals and seabirds in and around the margins of the NOW is a consequence of high primary productivity which results in great availability of plankton and fish prey. Variations in ocean temperatures within the polynya may affect phytoplankton production and higher trophic levels on the east and west margins of the polynya. This project will examine this by comparing aspects of seabird reproduction and foraging at Coburg Island, Canada, as part of the International Northwater Polynya Project.

Genetic Diversity in the Biota of Arctic Lakes

Project: 606-97

Period: 01-20 August

Area: Tuktoyaktuk

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Our research program involves the survey of patterns and levels of molecular and biochemical genetic variation in populations of Arctic freshwater fish and zooplankton. This work aims to extend understanding of species diversity in Arctic aquatic habitats and to reconstruct the dispersal routes employed by organisms as they recolonized the Arctic from glacial refugia.

Interpopulation Assessment of Arctic Charr Fisheries of Cumberland Sound

Project: 106-97

Period: 03-20 August

Area: Irvine Inlet/Kingnait Fjord/Nettling Lake

Name: Tallman, Ross

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Central and Arctic Region, Science Branch
Freshwater Institute
501 University Crescent
Winnipeg, MB
R3T 2N6

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Several stocks of Arctic charr are harvested by the Pangnirtung (Baffin Island) community from rivers entering Cumberland Sound. To test the hypothesis that charr populations will be impacted by exploitation and, if so, determine the appropriate limit several populations under different exploitation levels will be sampled.

INDEX OF PRINCIPAL INVESTIGATORS