NORTHWEST·TERRITORIES
SCIENTIFIC·RESEARCH·1989

SCIENCE·INSTITUTE
OF·THE·NORTHWEST·TERRITORIES

How do Inuit children formulate stories?

How do you grow luscious berries and vegetables in the N.W.T.?

What are the educational and work-oriented needs of the Dene?

How effective are the new humane traps used for Arctic fox?

What information is known about the gyrfalcon, our new territorial bird?

Can seabirds dive to incredible depths?

How do walrus communicate?

How can we improve educational curriculum in the N.W.T.?

Are you ...

a journalist looking for ideas for stories?

a bureaucrat or administrator developing northern policy?

a politician who wants to keep abreast of activities in your locale?

a student or a teacher studying a particular topic?

a businessman or local entrepreneur willing to innovate?

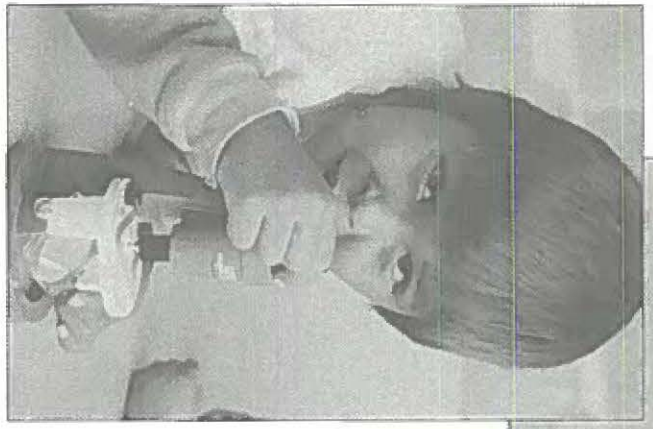
Are you ...

a curious member of our northern society?

Do you want to know more about northern research?

THIS SCIENCE INSTITUTE OF THE NORTHWEST TERRITORIES SUMMARY OF RESEARCH IN 1989 IS FOR YOU !

Photo: Culture & Communications, GNWT



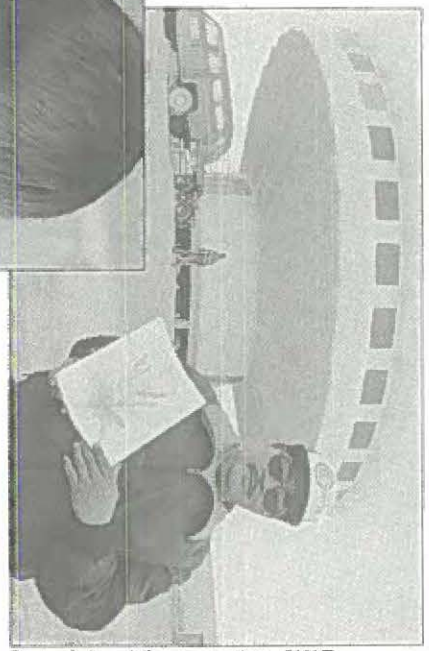


Photo: Culture & Communications, GNWT

Photo: Tessa MacIntosh, GNWT

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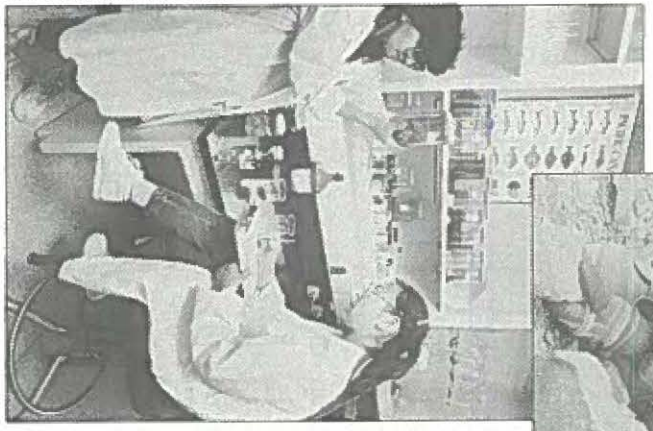

Photo: Bob Wilson, GNWT

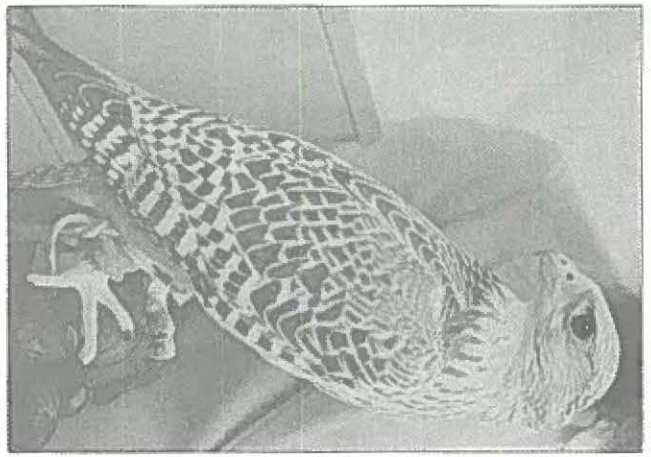

Photo: Tessa MacIntosh, GNWT

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SCIENCE INSTITUTE
OF THE NORTHWEST TERRITORIES

RESEARCH IN THE N.W.T.

To learn about and appreciate science one must understand what science is all about. The Science Institute of the N.W. T. uses a very open definition of Science : the knowledge and understanding of the world around us obtained through observation, study and asking questions.

The Science Institute of the N.W.T. wishes to encourage the best use of our most valuable resource - people. By the promotion of communication, cooperation and coordination of efforts within the developing scientific community of the N.W.T. we can only expect to create a stronger, more useful tool for learning about the northern environment.

Everyone brings to science and learning a different perspective. Knowledge is gained from observation, experimentation and asking questions. A specific useful body of knowledge in the north is that of traditional knowledge. Those who have lived and experienced the northern environment for many years and generations, while not formally analysing and recording in the recognized scientific method, offer much to northern research. Everyone's insight is worthwhile.

Some of you may have been involved in 1989 as researchers or their assistants. Some of you may have provided answers to some of the questions by sharing traditional knowledge passed on to you or describing your observations as a hunter on the land. Some of you may have participated in interviews. All of you must be curious about research going on in your community.

The sharing can grow. Researchers in the north are expected, perhaps more than others, to contribute the results of their studies. By doing this northerners can become more aware of, participate in and become a part of the growing scientific community. Perhaps you have a research concern but can not tackle it on your own. There is opportunity for you to become involved.

In this document you will find a list of research that was carried on in the N.W.T. in 1989. Each entry tells you what the research was about, where the work was done, who the principle investigator conducting the study was and which agency within the N.W.T. licensed the study.

Researchers are government employees, private consultants, students, professors and individuals. The researchers whose studies appear in this Summary of Research are from all over Canada. Some are from the United States and overseas. Some of the researchers are resident in the north.

Researchers have conducted their studies using a variety of techniques and quite often used local resources such as outfitters and research centers. Though the information and possibly samples were collected locally in the north, research followup such as laboratory analysis and report writing are often done in the researcher's main center. There is a very strong need for the information to be returned to the north.

All researchers in the N.W.T. are required under the Scientist's Act to be licensed. This encourages and facilitates communication amongst local people who may potentially be influenced by the research, the researcher and northern decision-makers. Other researchers and the public can learn what is happening in the research community. Perhaps someone else has done similar work and can share this learning to avoid repetition of work. Perhaps native northerners are very interested in what a visiting researcher is doing.

Reporting of research done in the north is done by written reports. Researchers submit summaries of their work at all stages. First they must outline their work in order to get a license. After their work is complete they must submit a brief summary of what went on. Unpublished formal reports and published articles are often also sent in to the Science Institute. Researchers are encouraged to share their findings within the community where the study was conducted. The Science Institute can help facilitate local presentations by researchers.

The 1989 Summary of Research lists work done only under the licensing of the Prince of Wales Northern Heritage Center (A), the Government of the Northwest Territiories Renewable Resource Department (R) and the Science Institute of the N.W.T. (S). Some Renewable Resource biologists may do several studies under one licence. Other research is done under the jurisdiction of federal departments such as the Department of Fisheries and Oceans and the Geological Survey of Canada. Still other research is done under the auspices of organizations such as the Inuvialuit Lands Administration. As you can imagine the sharing of information becomes challenging. The establishment of an information sharing network is vital.

For this reason the Science Institute of the N.W. T. encourages all researchers and potential researchers from government, consulting firms, universities and the private sector to please be in touch. Your ideas can be effectively shared and a growth of the scientific community within the N.W.T. fostered. Young people in the north will have a valuable resource tool from which to develop their scientific interests and knowledge.

USING THE SUMMARY OF RESEARCH IN 1989

The studies have been separated geographically according to region: Baffin (BA), Keewatin (KE), Kitikmeot (KI), Inuvik (IN) and Fort Smith (FS).

The research has also been designated a specific discipline according to historic scientific thought: Social Sciences, Biological Sciences, Health Sciences, Earth Sciences, Physical Sciences and Applied Sciences.

Social Sciences : This includes studies which focus on some aspect of pre-historic, historic or current human society; for example studies in archaeology, economics, anthropology or history.

Biological Sciences: A study which examines wildlife and plants and in some cases humans is categorized as Biological Sciences.

Health Sciences: If a social science or biological science study focuses on a specific aspect of physical or mental well-being the category Health Sciences is used.

Earth Sciences: These are studies which have focused on some aspect of the physical world around us; for example geology, geography, geomorphology, climatology or hydrology.

Physical Sciences: Studies which primarily use the disciplines of chemistry, physics or astronomy to study particular phenomena are categorized as Physical Sciences.

Applied Sciences: Engineering studies and analytical studies from which the results are intended for immediate use by society are termed Applied Sciences.

Please note that particularly when the long term application of many studies are considered, the studies may fall into more than one category. For the most part only the dominant category has been used.

FOR MORE INFORMATION

The Science Institute is constantly revising and updating its information system. If you are interested in a 1990 research endeavour, the Institute may be able to help you.

The Institute is also currently preparing a document, *Research in the N.W.T.: SINT Licensing Procedures*.

If you wish to obtain information about a specific study, the Institute encourages you to contact the researcher directly. This lets you really experience Science. S.I.N.T. will provide you with a popular summary of reports but will not give out copies of unpublished reports without the author's prior consent.

Not all information is documented in reports from research. Other information documents housed at the Science Institute include listings of northern research and northern research needs assessment. Please see a sample of these titles in this report.

If you have not been listed in the compendium and conducted research please keep the Institute informed in the future. Thank you.

For further information regarding any aspect of research in the N.W.T. you are welcome to contact the Science Institute at the following address:

The Science Institute of the Northwest Territories
Box 1617
Yellowknife, NT
X1A 2P2

MULTIPLE REGION PROJECTS

Applied & Biological Sciences

Mitch Taylor
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Agency: R Region: BA, KI, IN, KE
Licence Number: 1454

Baffin, Kitikmeot, Inuvik, Keewatin Reg.

Mr. Taylor collected 600 fat samples from polar bears for toxicology analyses.

Applied & Biological Sciences

Theresa Mulhern
Department of Geography
Room 1113 Lefrak Hall
University of Maryland
College Park, Maryland, U.S.A.
20742

Agency: S Region: FS, IN
Licence Number: 9114

Wood Buffalo Park/Fort Smith; Inuvik

Ms. Mulhern gained familiarity with the vegetation of the boreal forest and tundra of northern and western Canada by taking aerial photographs and non-destructively sampling vegetation. The information will be compared with satellite imagery of the boreal forest and tundra of this same area so that satellite photos can be more accurately read.

Biological Sciences

Christopher Norment
Graduate Fellow
Museum of Natural History
University of Kansas
Lawrence, Kansas, USA
66045

Agency: S Region: FS, KE
Licence Number: 9028

Thelon Game Sanctuary

Mr. Norment was studying the breeding biology of the Harris' Sparrow. He collected data on many physical factors (such as weather, food supply, nest-site, predators) or genetic factors (such as number of eggs, breeding cycle, condition of females).

Biological Sciences

Birgit Braune
CWS
Canadian Wildlife Service
Ottawa,
Ontario
K1A 0H3

Agency: R Region: BA,IN,KI,FS,KE
Licence Number: 1540

7 locations across the NWT

Dr. Braune developed a comprehensive base of information on contaminants in waterfowl.

Biological Sciences

Steve Fancy
US Fish/Wildl.Serv.
Alaska Fish/Wildlife Service
101 12 Ave. Box 20
Fairbanks, Alaska
99701

Agency: R Region: FS, IN
Licence Number: 1510

Yukon/NWT Border

Dr. Fancy determined the age to sex ratios, mortality rates, distribution patterns and movements of Porcupine Caribou. He was authorized to relocate and replace 25 radio transmitters on adult caribou.

Biological Sciences

Mitch Taylor
Ren. Res.
GNWT
Box 1320
Yellowknife, NT XOE 2L9

Agency: R Region: IN, KI, BA
Licence Number: 1438

McClure Strait and Viscount Sound area

Mr. Taylor studied polar bears to identify territorial boundaries, movement and the population in this region. He could then recommend quotas to the GNWT. This is part of a five-year study. Three cabins to serve as a base camp were erected.

Biological Sciences

James Voelzer
Waterfowl Pop. Survey
U.S. Fish and Wildlife Serv.
Washington D.C.,
U.S.A. 20240

Agency: R Region: FS, IN
Licence Number: 1156

Fort Smith to Tuktoyaktuk

Mr. Voelzer determined the size & species composition of breeding waterfowl on the Mackenzie River. He did this through an aerial survey and concentrated his studies on ducks.

Health Sciences

Karen Graham
109 - 492 Range Lake Road
Yellowknife,
Northwest Territories
Canada
X1A 3G4

Agency: S Region: IN,FS,KE,KI,BA
Licence Number: 9158

All regions of the NWT

The Inquiry Mode Questionnaire of Harrison and Bramson was sent to all present and previous nurses in the Outpost Health Centres. The results will be compared with a study of the thinking styles of urban hospital nurses.

Health Sciences

Dr. Bliss Tracy
Northern Study Coordinator
Radiation & Medical Devices
775 Brookfield Road
Ottawa, Ontario
K1C 1C1

Agency: S Region: KE,FS
Licence Number: 9001

Baker Lake, Rae-Edzo

Dr. Bliss Tracy and team travelled to Baker Lake and to Rae-Edzo, NWT to complete whole body counts of radiocesium on the local people. This radioactive substance falls from the air onto lichens, and is then eaten by caribou and passed on to people. The researchers measured how much radiocesium was in people's bodies. They also recorded how much caribou people were eating so that they can advise them on the safety of eating caribou.

Health & Biological Sciences

Dr. Bliss Tracy
Radiation & Medical Devices
Health and Welfare Canada
775 Brookfield Rd.
Ottawa, Ont
K1A 1C1

Agency: R Region: FS, KE
Licence Number: 1480

Baker Lake and Rae-Edzo communities

Dr. Tracy collected samples of caribou meat for determination of radioactive contamination. This was related to a community-based study to determine radioactive cesium levels in humans and the food locally consumed.

Physical Sciences

Dr. B.H. Luckman;
Terrain Science Division
Geological Survey of Canada
601 Booth Street
Ottawa, Ontario
K1A 0E8

Agency: S Region: IN, BA
Licence Number: 9127

Mackenzie Delta areas including Inuvik and Tuktoyaktuk; Eureka and Fosheim Peninsula

Dr. Luckman and an assistant looked for potential sites for the Geological Survey of Canada to study global change. They also obtained recent tree-ring chronologies from treeline sites in the Mackenzie Delta.

Physical Sciences

David A. Sherstone;
Director, Scientific Services
Science Institute of the NWT
Box 1617
Yellowknife, NWT
X1A 2P2

Agency: S Region: IN, FS
Licence Number: 9148

Major channels on transect between Inuvik and Aklavik; the Hay River

Mr. Sherstone and his team inserted ice gauges into the ice in river channels in the Mackenzie Delta and the Hay River. Every 10 days the gauges were read to obtain the total ice, white ice, and snow quantities at each site. From the data the rates of ice growth and decay can be calculated and the approximate date at which the ice reaches its maximum thickness determined.

Physical Sciences

Rossitsa Blagoeva
10 Weredale Park # 202
Montreal, Quebec
H3Z 1Y6

Agency: S Region: FS, IN
Licence Number: 9083

Yellowknife area and Inuvik area

Radionuclides are deposited at the surface of the soil as a result of nuclear detonations or nuclear accidents. Some disintegrate rapidly but others persist in the environment for years. These are taken up by plants, washed away by rain or migrate through the soil. By comparison with other studies the researcher will determine if there is any difference in the migration rate of these radionuclides in temperate and northern soils.

Social Sciences

Steve Nitah
Research Coordinator
Dene Cultural Institute
Box 207
Yellowknife, NWT
X1A 2N2

Agency: S Region: FS, IN
Licence Number: 9052

Fort McPherson, Fort Franklin, Wrigley, Fort Rae, Fort Resolution, Norman Wells

Mr. Nitah studied the needs of the Dene, as perceived by themselves and their educators, regarding education and work. Through questionnaires and interviews, educational and training strategies are being developed which reflect a Dene perspective.

Social Sciences

Dr. Arlene Stairs
104 Somerville
Westmount, Quebec
H3Z 1J5

Agency: S Region: FS,IN,BA,KE,KI
Licence Number: 9144

All Regions of the N.W.T.

Dr. Stairs described the new role of the "native educator" based upon the experiences of northern native professionals within the educational establishment. She then made this information available for the training of professional native educators. In addition, she evaluated the effects of such cultural awareness applications on native and non-native teacher education programs.

Social Sciences

Catherine Anne Parker
16-424 Bank Street
Ottawa, Ontario
K2P 1Y8

Agency: S Region: FS, KE
Licence Number: 9039

Yellowknife and Rankin Inlet

Catherine Parker visited Yellowknife and made preliminary observations regarding northern political development. She attended public meetings and various activities in order to become aquainted with the northern political setting.

Social Sciences

Lloyd James McDonald
Box 443
Rock Island, Quebec
J0B 2K0

Agency: S Region: BA,IN,FS,KI,KE
Licence Number: 9166

All N.W.T. regions

Mr. McDonald mailed surveys to all business education teachers in the N.W.T. and tabulated the results. The aim is to create a culturally sensitive Business Education Curriculum designed to make this subject area relevant to both secondary school and adult education students in the North.

Social Sciences

Felix Winkelaar
5-275 Somerset Street West
Ottawa, Ontario
K2P 0J5

Agency: S Region: FS, BA
Licence Number: 9057

Yellowknife, Igloolik, Iqaluit

Mr. Winkelaar studied the evolution of the Science Institute by conducting interviews with Science Institute staff, Chairman and Board members, northern residents, and those involved in northern research. He also consulted the NWT Hansard, records and publications of the Science Institute, the Canadian Arctic Research Council and the Department of Indian Affairs and Northern Development.

Social Sciences

Peter R. Mulvihill;
72 Avondale Ave. South
Waterloo,
Ontario
Canada
N2L 2B8

Agency: S Region: FS, IN
Licence Number: 9130

Yellowknife and Inuvik

Mr. Mulvihill collected documents and conducted open-ended, informal conversations with native leaders, government and industry officials and others who are familiar with environmental assessment (EA) to more specifically outline the process and concerns.

Social Sciences

Ian Robertson
University of Calgary
2500 University Drive N. West
Calgary,
Alberta
T2N 1N4

Agency: A Region: IN, FS
Licence Number: 89-657

Mackenzie Valley between Fort Simpson and Fort Norman.

Ian Robertson and Gerald Smith of the University of Calgary and Douglas Hanna of Simon Fraser University looked for evidence of the Clovis people who camped around the shores of a large lake which existed after the last ice age, about 11,000 years ago. Last summer they mapped the ancient lakeshore and found a few interesting artifacts in a cave.

Social Sciences

Dr. Claudia Notzke
University of Lethbridge
4401 University Drive
Lethbridge, Alberta
T1K 3M4

Agency: S Region: IN, FS
Licence Number: 9125

Yellowknife, Rae Edzo, Norman Wells

Case studies were collected from several businesses in the Yellowknife, Rae Edzo and Norman Wells areas to use in the course materials of the BESS-Program (Business Enterprises and Self-Governing Systems of Indian, Inuit and Metis Peoples) offered at the University of Lethbridge. Most of the information was gathered by means of personal interviews.

BAFFIN REGION

Applied Sciences

Dr. G.W. Heinke
Dean, Faculty of Applied Sci. & Eng.
University of Toronto
35 St. George Street
Toronto, Ontario
M5S 1A4

Agency: S Region: BA
Licence Number: 9096

Iqaluit, Broughton Island and Pangnirtung

Dr. Heinke and his research team gathered information to assist in the sorting and assessing of garbage and waste that goes to the landfill site. This was done in order to provide data for the planning and design guidelines for waste disposal sites in northern communities.

Applied Sciences

Dennis J. Gregor
Head, Surveys & Interpretation Div.
Water Quality Branch
1901 Victoria Avenue
Regina, Sask.
S4P 3R4

Agency: S Region: BA
Licence Number: 9140

Resolute Bay

Large volume snow sampling was undertaken. These samples were returned to Resolute Bay for melting and processing prior to analysis at Environment Canada laboratories. This information will be used to determine the importance of atmospheric sources of contaminants to the total body burden of Arctic fish and marine mammals.

Applied Sciences

James A. Hyatt;
Department of Geography
Queen's University
Kingston, Ontario
K7L 3N6

Agency: S Region: BA
Licence Number: 9038

Pangnirtung;Pond Inlet;Cape Dorset;Lake Harbour;Broughton Is.;Clyde River;Arctic Bay

Mr. Hyatt is continuing his study to see if permafrost and ground ice are affecting the new water reservoir at Pangnirtung and at Pond Inlet. He is also starting a new study at Cape Dorset, Lake Harbour, Broughton Island, Clyde River and Arctic Bay.

Biological Sciences

Allan Baker
Dept. of Ornithology
Royal Ontario Museum
100 Queen's Park
Toronto, Ont.
N5S 2C6

Agency: R Region: BA
Licence Number: 0618

Various locations in the Baffin Region

Mr. Baker collected 35 species of selected bird populations to compile DNA profiles for evolutionary assessment. Mr. Baker specifically examined the role of isolation in glacial refuge.

Biological Sciences

Chris Davies
Ontario Ministry of Natural Resources
Box 190
Moosonee, Ont
POL IYO

Agency: R Region: BA
Licence Number: 1204

Akimiski Island

Mr. Davies trapped and banded Canada geese. Blood and tissue samples were also taken.

Biological Sciences

Ray Case
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
X1A 2L9

Agency: R Region: BA
Licence Number: N/A

S. Ellesmere Island: Svendsen Peninsula.

Mr. Case determined the status of muskox and caribou populations on southern Ellesmere Island.

Biological Sciences

Judith Eger
Mammalogy
Royal Ontario Museum
100 Queen's Park
Toronto, Ont
M5S 2C6

Agency: R Region: BA
Licence Number: 0619

Baffin Region

Ms. Eger analysed chromosomal DNA, mitochrondrial DNA and morphology of collared lemmings (genus Dicrostonyx).

Biological Sciences

Mike Ferguson
Renewable Resources
GNWT
Baffin Region
Pond Inlet, NT
X0A 0S0

Agency: R Region: BA
Licence Number: N/A

South Baffin Island

Mr. Ferguson determined seasonal movement and annual fidelity to seasonal ranges of caribou.

Biological Sciences

Gilles Gauthier
Dept. of Biology
University of Laval
Ste-Foy,
Quebec
G1K 7P4

Agency: R Region: BA
Licence Number: 1508/1822

Bylot Island

Mr. Gauthier determined the energy budget of nesting snow geese and their impacts on vegetation. This included conducting censuses and constructing grazing enclosures.

Biological Sciences

David Gray
Vertebrate Ethology Curator
Museum of Natural Sciences
Box 3443, Station D
Ottawa, ONT
K1P 6P4

Agency: R Region: BA
Licence Number: 1514

Polar Bear Pass and Islands in Penny Strait

Mr. Gray observed the breeding behavior of various birds; he tape recorded and photographed the subjects as well. He colour-marked and banded 10 Red-throated Loons.

Biological Sciences

David Gray
Vertebrate Ethology Curator
Museum of Natural Sciences
Box 3443, Station D
Ottawa, Ont
K1A 0M8

Agency: R Region: BA
Licence Number: 1517

Sverdrup Pass and Polar Bear Pass

Mr. Gray observed, filmed, and tape recorded the behaviour of Arctic hares. He also colour-marked and ear-tagged 20 of them. He spent time observing muskoxen and arctic wolves as well.

Biological Sciences

Barrow Strait and W. Lancaster Sound

Keith Hobson
Dept. of Biology
University of Saskatchewan
Saskatoon,
Saskatchewan
S7N 0W0

Mr. Hobson collected a number of birds of nine different species for isotope analysis of tissue samples. The seabirds he captured included: Thick-billed murres, Glaucous gulls, Black-legged kittiwakes, Black guillemots, Northern fulmars, Arctic terns, Dovekies, Common eiders and King eiders.

Agency: R Region: BA
Licence Number: 1515

Biological Sciences

Eureka, Ellesmere Island

Albert Karvonen
Karvonen Films Ltd.
373 Wyecliff
Sherwood Park, AB
T8A 4T6

Mr. Karvonen shot film to show the importance of the wolf as a predator of muskox.

Agency: R Region: BA
Licence Number: N/A

Biological Sciences

Bathurst Island

Gordon Kerr
CWS
Canadian Wildlife Service
2nd Floor, 4999-98 Ave.
Edmonton, AB
T6B 2X3

Mr. Kerr determined the impact of snow and ice on the distribution and movement of Peary Caribou.

Agency: R Region: BA
Licence Number: 1505

Biological Sciences

Phillips Inlet, Ellesmere Island

Joe McCarron
Oxford University
58 Abingdon Road
Oxford,
United Kingdom
0X1 4PE

Mr. McCarron studied arctic ecology to integrate studies of biology and geology. He primarily observed Arctic Hare and bird species as part of the wildlife component of his project.

Agency: R Region: BA
Licence Number: 1482

Biological Sciences

Ellesmere Island

David Mech
US Fish/Wildl. Serv.
North Central Forest Experim. Stn.
1992 Folwell Ave.
St. Paul, MN
55108

Mr. Mech determined social interactions of wolf pack members through direct observation, video tape and photography. He also investigated minor manipulation of wolf behaviour using baits, odors and howling.

Agency: R Region: BA
Licence Number: 1524

Biological Sciences

Various Islands near Bathurst Island

Frank Miller
CWS
Canadian Wildlife Service
2nd Flr, 4999-98 Ave.
Edmonton, Alberta
T6B 2X3

Mr. Miller evaluated the springtime distribution of caribou. He also examined the impact of snow and ice conditions on the animals. His work was carried out through field work and helicopter reconnaissance surveys.

Agency: R Region: BA
Licence Number: 1536

Biological Sciences

Robert Montgomerie
Department of Biology
Queen's University
Kingston,
Ontario
K7L 3N6

Agency: R
Licence Number: 1546

Region: BA

Sarcpa Lake, Melville Peninsula

Dr. Montgomerie determined the behaviour and ecology of high arctic animals in relation to their harsh environment.

Biological Sciences

Dr. Guy Morrison
Canadian Wildlife Service
100 Gamelin Boulevard
Hull, Quebec
K1A 0H3

Agency: R
Licence Number: 1538

Region: BA

Alert, Ellesmere Island

Dr. Morrison determined the activity patterns of birds immediately after their return North and before their nesting periods.

Biological Sciences

Dr. Guy Morrison
CWS
Canadian Wildlife Service
100 Gamelin Boulevard
Hull, Quebec
K1A OH3

Agency: R
Licence Number: 1544

Region: BA

Rowley/Prince Charles Islands

Dr. Morrison studied the breeding habits of the shorebird population & their habitat at Foxe basin.

Biological Sciences

Donald Pattie
Ren. Res.
NAIT
1172-106 St.
Edmonton, AB
T5G 2R1

Agency: R
Licence Number: 1202

Region: BA

Devon Island and Eureka

Mr. Pattie continued long-term enumeration of wildlife and photographed several species.

Biological Sciences

Austin Reed
CWS
Canadian Wildlife Serv.
1141, route de l'eglis
Sainte-Foy, Quebec
G1V 4H5

Agency: R
Licence Number: 1526

Region: BA

Bylot Island/Great plains of Koukdjuak

Mr. Reed studied the behaviour, movements and distribution of Snow Goose broods by visual observation and telemetry (using radio transmitters to calculate distances). He also made some population estimates using helicopter surveys and photography.

Biological Sciences

Chris Shank
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Agency: R
Licence Number: N/A

Region: BA

Barrow Peninsula and Newell Sound

Mr. Shank determined the occupancy and productivity of known Gyrfalcon nest sites. He also banded, measured and took blood samples from the nestlings.

Biological Sciences

Resolute Bay Area

Dr. Ian Stirling
Canadian Wildlife Service
5320-122 Street
Edmonton,
Alberta
T6H 3S5

Dr. Stirling investigated the distribution and reproductive ecology of walrus by sound recording. He worked primarily in the Penny Strait area.

Agency: R Region: BA
Licence Number: 1487

Biological Sciences

Various Locations Baffin Region

Mitch Taylor
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Mr. Taylor marked 300 or more polar bears. He also determined population sizes and removed radio-collars.

Agency: R Region: BA
Licence Number: N/A

Biological Sciences

Truelove Lowland (Devon Island)

Dr. Cheryl M. Pearce;
Department of Geography
The University of Western Ontario
Social Sciences Centre
London, Ontario
N6A 5C2

Dr. Pearce and her associate returned to Truelove Lowland to evaluate an idea regarding plant associations growing on raised beaches: the different ages are a result of varying soil and water conditions rather than inconsistencies in the amounts of time the plants have had to live.

Agency: S Region: BA
Licence Number: 9069

Biological Sciences

Truelove Lowland, Devon Island

Lawrence C. Bliss;
Professor of Botany
University of Washington
KB - 15
Seattle, Washington, USA
98195

Mr. Bliss and his research team continued their study of the role of soil algae in high arctic ecosystem development. In 1989 the focus was on the uptake of carbon, nitrogen and other organics. Soil algae development with or without sunlight was measured also.

Agency: S Region: BA
Licence Number: 9070

Biological Sciences

Iqaluit

Lisa Andermann
14 Stratford Road
Hampstead, Quebec
H3X 3C4

Ms. Andermann gathered ethnoecological knowledge of the ringed seal using a questionnaire distributed to Environmental Technology students at Arctic College in Iqaluit.

Agency: S Region: BA
Licence Number: 9061

Biological Sciences

Pangnirtung

Pam Krannitz
Department of Biology
Queen's University
Kingston, Ontario
K7L 3N6

Ms. Krannitz collected seeds and a few plants to conduct comparative studies on two species of fireweed. She collected specimens from large populations to study how they reproduce.

Agency: S Region: BA
Licence Number: 9101

Biological Sciences

Michael Weis
Great Lakes Institute
Department of Biological Sciences
University of Windsor
Windsor, ON
N9B 3P4

Agency: S Region: BA
Licence Number: 9059

Tarr Inlet; Flaherty Island, Belcher Islands;

Mr. Weis harvested birch stems cut at ground level. The number of stems cut was limited and the survival of genetic individuals and populations was not affected significantly. This project was a continuation of work begun in 1988.

Biological Sciences

Pierre Richard
Marine Mammal Division
Freshwater Inst.-Fisheries & Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Agency: S Region: BA
Licence Number: 9033

Foxe Basin, Hall Beach

Mr. Richard and his team conducted aerial and boat surveys on walrus to determine their summer distribution and abundance. They also documented walrus behavior.

Biological Sciences

Dr. Mark A. Curtis
Associate Professor
McGill Univ. - Macdonald College
21, 111 Lakeshore Road
Ste. Anne de Bellevue, Quebec
H9X 1C0

Agency: S Region: BA
Licence Number: 9034

Igloolik

Dr. Mark Curtis and his team of 10 students from the University of Copenhagen studied molluscs, marine worms, and crustaceans living on the sea bottom and the parasites that live in arctic char and lake trout. The research was organized as part of a Copenhagen University course on Arctic biology.

Biological Sciences

Stephanie Guildford
Fish Habitat Research, DFO
Freshwater Institute
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Agency: S Region: BA
Licence Number: 9102

Resolute Bay, Barrow Strait and Lancaster Sound

Ms. Guildford collected water samples to determine whether phytoplankton (microscopic plants) are controlled in their rate of growth by the supply of nutrients, amount of light or the temperature in the water.

Biological Sciences

Paul Hebert
Department of Biological Sciences
University of Windsor
401 Sunset Avenue
Windsor, Ontario
N9B 3P4

Agency: S Region: BA
Licence Number: 9087

Sarcpa, Lailor and Hall Lakes, Melville Peninsula, Igloolik

A survey was carried out to ascertain the extent of genetic variability in arctic char and lake trout from lakes on the Melville Peninsula and northwestern Baffin Island. A particular effort was made to determine the incidence of hybrids between these two species.

Biological Sciences

Dr. Gregory H.R. Henry
Department of Geography
University of Alberta
3-32 HM Tory Building
Edmonton, Alberta
T6G 2H4

Agency: S Region: BA
Licence Number: 9093

Ellesmere Island

Dr. Henry and his research team conducted ecological research on certain arctic plant specimens at Princess Marie Bay lowland on east central Ellesmere Island and Fosheim Peninsula.

Biological Sciences

Josef Svoboda
Professor of Botany
University of Toronto
Mississauga, Ontario
L5L 1C6

Agency: S Region: BA
Licence Number: 9111

Sverdrup Pass, Ellesmere Island

Dr. Svoboda continued his research on the effects of muskox grazing in Sverdrup Pass and started two new projects: one to study two species of arctic herbs and the other to study sedges in small ponds.

Biological Sciences

Dr. Michael Levandowsky
Research Scientist
Pace Univ., Haskins Laboratories
41 Park Row
New York, New York, U.S.A.
10038

Agency: S Region: BA
Licence Number: 9106

Igloolik

Dr. Levandowsky conducted research of the waters in the Igloolik area. He collected water samples and examined them for the presence of microscopic animal-like organisms called microzoaplankton.

Biological Sciences

Michael Dickman
Professor
Department of Biological Sciences
Brock University
St. Catherines, Ontario
L2S 3A1

Agency: S Region: BA
Licence Number: 9122

Pond Inlet

Professor Dickman and his research assistant surveyed the lakes near Pond Inlet for various types of aquatic plants and animals.

Biological Sciences

Dr. Harold Welch
Research Scientist
Department of Fisheries and Oceans
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Agency: S Region: BA
Licence Number: 9095

Barrow Strait, Lancaster Sound and nearby waters

Dr. Welch continued research on the productivity of marine mammal food chains in the eastern Arctic. In particular he studied Arctic cod, clams and plankton.

Biological Sciences

Dr. Ian Stirling
Canadian Wildlife Service
5320 - 122 Street
Edmonton, Alberta
T6H 3S5

Agency: S Region: BA
Licence Number: 9021

Penny Strait, Radstock Bay

Dr. Ian Stirling and his team recorded underwater sounds of walruses and observed their behaviour.

Biological Sciences

Bruce C. Forbes;
Department of Geography
McGill University
805 Sherbrooke Street West
Montreal, P.Q.
H3A 2K6

Agency: S Region: BA
Licence Number: 9024

Clyde River and area; Lake Hazen, Ellesmere Island; Truelove Lowland, Devon Island

Mr. Forbes is looked at how quickly plants are invading the old settlement of Clyde River where the ground was cleared for buildings and roads. This site will be compared to undisturbed ground and similar disturbances at other human occupancy sites within the High Arctic.

Biological Sciences

Haakon Hop
Department of Zoology
CW-312 Biological Sciences Building
University of Alberta
Edmonton, Alberta
T6G 2E9

Agency: S Region: BA
Licence Number: 9042

Resolute Bay and adjacent bays on Cornwallis Island, and bays on Devon Island

Mr. Hop and his assistants collected Arctic cod using trawls and trap nets. Samples of these and other fish were taken back to the University of Alberta for study. They also captured some live marine fish and invertebrates to be shipped to the Vancouver Aquarium for their new Arctic display.

Biological Sciences

Dr. Guy Morrison
Canadian Wildlife Service
National Wildlife Research Centre
100 Gamelin Boulevard
Hull, Quebec
K1A 0H3

Agency: S Region: BA
Licence Number: 9073

Rowley Island, Foxe Basin, Prince Charles Island

Dr. Morrison and his research team gathered information on the breeding and shoreline habitats of birds in the Foxe Basin area. The knowledge of birds in the Canadian Arctic, (population census, breeding densities, return rates, migration and wintering ranges). The use of remote sensing studies on vegetation and terrain habitats is presently limited.

Biological Sciences

W. Raymond Cummins
University of Toronto
Erindale Campus
Mississauga, Ontario
L5L 1C6

Agency: S Region: BA
Licence Number: 9079

Devon Island, Truelove Lowland

Professor Cummins and his team estimated the potential productivity of plants in northern ecosystems and further investigated the exceptionally high rate of respiration and alternative pathway respiration discovered in arctic plants. They used nitrate and ammonium electrodes to survey the levels of available nitrogen in wet and dry meadows on Devon Island.

Earth & Biological Sciences

Joe McCarron
Ellesmere Expedition
Oxford University
58 Abingdon Road
Oxford, ENGLAND
0X1 4PE

Agency: S Region: BA
Licence Number: 9046

Phillips Inlet, Ellesmere Island; MacDonald River Valley, Tanguay Fiord

Joe McCarron and his team mapped the Eastern Phillips Inlet. They also investigated the relationship between insects and plants in the high Arctic.

Earth Sciences

Hector Beaudet
Department of Geography
University of Alberta
Edmonton, Alberta
T6G 2H4

Agency: S Region: BA
Licence Number: 9068

Eureka, Lake Hazen, Northern Ellesmere Island

Mr. Beaudet and his team continued with a three year research project initially undertaken in 1987 which focuses on the glacial history of the Lake Hazen area.

Earth Sciences

Dale A. Russell;
Curator of Fossil Vertebrates
National Museums of Canada
Ottawa,
Ontario
K1A 0M8

Agency: S Region: BA
Licence Number: 9071

Ellesmere Island and the western coast of Amund Ringnes Island

Mr. Russell, in the company of eight other paleontological personnel, prospected for fossil vertebrate remains in the area of Bylot Island.

Earth Sciences

James F. Basinger
Department of Geological Sciences
University of Saskatchewan
Saskatoon, Saskatchewan
S7N 0W0

Agency: S Region: BA
Licence Number: 9080

Axel Heiberg and Ellesmere Island

Dr. Basinger and his research team continued their study on high latitude floras. They collected high latitude fossil floras which are proving to be critical to their understanding of the origin of northern temperate floras.

Earth Sciences

Dr. Gifford Miller
Geochronological Research Centre
INSTAAE, University of Colorado
Boulder, Colorado, USA
80309-0450

Agency: S Region: BA
Licence Number: 9062

Frobisher Bay, Iqaluit area

Dr. Gifford Miller and his research team travelled to the north shore of the outer portion of Frobisher Bay and concentrated their observations on the direction of the ice sheet flow over SE Baffin Island. They also assessed sea levels and ice flow in the area of Loks Land to Gold Cove.

Earth Sciences

Dr. Gunter K. Muecke
Department of Geology
Dalhousie University
Halifax, Nova Scotia
B3H 3J3

Agency: S Region: BA
Licence Number: 9066

Tanquary Fiord and Hanson Point, Ellesmere Island; Axel Heiberg Island

Dr. Muecke and his team travelled to Ellesmere and Axel Heiberg Islands to investigate the field relations, petrology, mineralogy, geochemistry, and geo-chronology of magmatic rocks of the northern Canadian Arctic Islands.

Earth Sciences

Charles Gruchy
Canadian Conservation Institute
Department of Communication
1030 Innes Road
Ottawa, Ontario
K1A 0C8

Agency: S Region: BA
Licence Number: 9075

Geodetic Hills, Axel Heiberg Island, Beechey Island, Franklin site

Mr. Gruchy and his research team continued to map the stumps and logs of the unmineralized fossil forest at Geodetic Hills. The erosion and the impact humans have had on the site was also studied. In addition small samples of wood and leaf litter were taken to continue their studies of preservation methods. They also photographed grave markers at Beechey Island, Franklin site, to monitor changes.

Earth Sciences

Jonathan T. Overpeck
Associate Research Scientist
Lamont-Doherty Geological Observ.
Columbia University
Palisades, New York, USA
10964

Agency: S Region: BA
Licence Number: 9018

Ogac Lake (62o52'N and 67o21'W) South Baffin Island near Iqaluit

Mr. J. Overpeck and his team collected samples of mud from the bottom of Ogac Lake. In their laboratory, they then examined the chemistry, texture, and fossils in this mud in hopes of documenting how the southern Baffin Island environment (mainly climatic) has changed over the past 8,000 years.

Earth Sciences

Trevor Bell
Department of Geography
University of Alberta
Edmonton, Alberta
T6G 2H4

Agency: S Region: BA
Licence Number: 9023

Fosheim Peninsula (Ellesmere Island)

Mr. Bell studied the Quaternary geology and geomorphology of the Fosheim Peninsula (west-central Ellesmere Island) as a part of a 3 year study which began in 1987.

Earth Sciences

John D. Jacobs
Professor and Head
Department of Geography
University of Windsor
Windsor, Ontario
N9B 3P4

Agency: S Region: BA
Licence Number: 9031

Nettiling Lake, Amadjuak Lake and Barnes Ice Cap, Baffin Island

Dr. Jacobs and his team returned to the Baffin to continue his investigation of changes in climate and environment over the last 8000 years.

Earth Sciences

Dr. Vera Alexander
Director and Professor
Institute of Marine Science
University of Alaska, Fairbanks
Fairbanks, Alaska, USA
99775

Agency: S Region: BA
Licence Number: 9036

Devon Island

Dr. Alexander and her team measured the temperature, solar heat and light penetration in Lake Hazen. They believed that they may be able to detect signs of global warming (Greenhouse Effect) according to the change in the temperature in this Arctic lake. They also collected study data on phytoplankton populations of the lake.

Earth Sciences

Brian MacLean
Environmental Marine Geology
Bedford Oceanography Inst. - EMR
Box 1006
Dartmouth, Nova Scotia
B2Y 4A2

Agency: S Region: BA
Licence Number: 9035

Hudson Strait

Mr. MacLean and his team travelled through Hudson Strait by research ship to take samples of the deposits and sediments in the Strait. They investigated the history and conditions of the area. Sediments records were used to detail late glacial and post glacial conditions in the Strait.

Earth Sciences

Dr. Peter Adams
Department of Goegraphy
Trent University
Box 4800
Peterborough, Ontario
K9J 7B8

Agency: S Region: BA
Licence Number: 9047

White Glacier and Colour Lake on Axel Heiberg Island

Dr. Adams and his team continued their study on the mass balance of the White Glacier. They also continued their examination of the chemistry and limnology of Colour Lake.

Earth Sciences

Dr. P. Martini
Land Resource Science
University of Guelph
Guelph, Ontario
N1G 2W1

Agency: S Region: BA
Licence Number: 9056

Igloolik, Iqaluit

Dr. Martini and his team continued their survey of the sediments and terrain in the coastal area of Foxe Basin. They collected soil and rock samples. They also created a map of the shores and ocean bottom.

Earth Sciences

Dr. W.M. Schwerdtner
Department of Geology
University of Toronto
170 College Street
Toronto, Ontario
M5S 1A1

Agency: S Region: BA
Licence Number: 9082

Hare Fiord and Otto Fiord, Ellesmere Island

Dr. Schwerdtner and his research team continued a research project begun in 1988. They carried out detailed mapping of the Hare Fiord and Otto Fiord regions of Ellesmere Island.

Earth Sciences

Dr. Antoni G. Lewkowicz
Department of Geography
Erindale Campus
University of Toronto
Mississauga, Ontario
L5L 1C6

Agency: S Region: BA
Licence Number: 9091

Fosheim Peninsula, Ellesmere Island

Dr. Lewkowicz examined rates of a number of geomorphic processes such as weathering of bedrock, ground-ice slump development and active layer detachment and attempted to link these to climatic variables. This was a continuation of work undertaken in 1987 and 1988.

Earth Sciences

Dr. Alfred Lenz
Department of Geology
University of Western Ontario
Biological & Geological Building
London, Ontario
N6A 5B7

Agency: S Region: BA
Licence Number: 9116

Grinnell Penninsula, Devon Island, Central Ellesmere Island

Dr. Lenz collected fossils (graptolites) as a continuation of his study of the fossils on western Grinnell Penninsula, Devon Island and central Ellesmere Island.

Earth Sciences

Dr. James T. Gray
Department of Geography
University of Montreal
Montreal, Quebec
H3C 3J7

Agency: S Region: BA
Licence Number: 9124

Charles Island; King George Islands

Dr. Gray and his research team studied quaternary glacial and sea level history along the north east Ungava coast.

Earth Sciences

Dr. Elliott Burden
Assistant Professor
Department of Earth Sciences
Memorial Univ. of Newfoundland
St. John's, Newfoundland
A1B 3X5

Agency: S Region: BA
Licence Number: 9154

Iqaluit; Pond Inlet; Bylot Island

Dr. Burden did research on Bylot Island and northern Baffin Island to better understand the geologic history of the area at a time before the glaciers. The rocks on Bylot and Baffin Islands were being systematically mapped and sampled for sediment and fossil analysis.

Earth Sciences

Dr. Wayne Pollard
Assistant Professor
Geography Dept./ McGill University
Burnside Hall 805 Sherbrooke St. W.
Montreal, Quebec
H3A 2K6

Agency: S Region: BA
Licence Number: 9094

Expedition Fiord, Axel Heiberg Island

Dr. Pollard recovered buried glacier ice from the ice moraine at the snout of the Thompson Glacier on Axel Heiberg Island. He took soil samples and mapped the characteristics of the ice bodies.

Earth Sciences

Alexander D. McCracken
Eastern Paleontology Section
Geological Survey of Canada
601 Booth Street
Ottawa, Ontario
K1A 0E8

Agency: S Region: BA
Licence Number: 9157

Putnam Highlands Area, Baffin Island

The researchers made collections to add to the scientific knowledge of the fossils in this Baffin region. Further mapping of the Putnam Highlands region will also be done.

Earth Sciences

Dr. O.A. Dixon
Department of Geology
University of Ottawa
Ottawa, Ontario
K1N 6N5

Agency: S Region: BA
Licence Number: 9063

East Central Cornwallis Island and Northwest Devon Island

Dr. Dixon and his research team studied sedimentary rocks and fossils in the Arctic Islands that were formed over 400 million years ago in warm tropical seas. They hoped to use their study to interpret the ancient environments. The study's aim was to reveal types of sea animals not known in modern oceans.

Earth Sciences

Michael J. Retelle
Assistant Professor of Geology
Bates College
Lewiston, Maine, USA
01003

Agency: S Region: BA
Licence Number: 9072

Sophia Lake, Eastern Cornwallis Island

Mr. Retelle and his research team gathered information from sediment cores, such as microfossil content, grain size and lamination thickness. This information was then used to reconstruct the environmental history of the basin.

Earth Sciences

Raoul Miller
INSTAAR, Campus Box 450
University of Colorado
Boulder, Colorado, U.S.A.
80309

Agency: S Region: BA
Licence Number: 9131

Countess of Warwick Sound; Loks Land, Hall Peninsula, Baffin Island

Mr. Miller and Mark Abbott took water samples and cores from the sediment at the bottom of lakes in the area of Countess of Warwick Sound and Loks Land. The purpose of the sample collection is to find out about the past climate of the area and also to see what impacts human activity in the Arctic might have on these lakes.

Earth Sciences

Dr. Roger H. King
Dept. of Geography
Social Science Centre
University of Western Ontario
London, Ontario
N6A 5C2

Agency: S Region: BA
Licence Number: 9090

Truelove Lowland; Capes Skogn, Newman-Smith, Sparbo-Hardy; Devon Is.

Dr. King and his students examined the sediments and soil of the Truelove Lowland and northeastern Devon Island. Using the paleoenvironmental record they observed, they tried to reconstruct the environmental changes that took place in these Polar Oases. They concentrated on the last 10,000 years.

Earth Sciences

Christopher Somr
Dept. of Geography
Univ. of Western Ontario
London, Ontario
N6A 5C2

Agency: S Region: BA
Licence Number: 9138

Truelove Lowlands; Capes Skogn, Newman-Smith, Sparbo-Hardy; Devon Is.

Mr. Somr returned as a member of Dr. King's Truelove Lowland research party. He extracted sediment cores from polygonal peat plateau bogs and collected samples from them. These were to be used for chemical, physical and paleobotanical analyses (at the university laboratory) of the paleoenvironmental record.

Health Sciences

Dr. Hugh Sampath
255 Le Marchant Road
St. John's,
Newfoundland
A1E 1P8

Agency: S Region: BA
Licence Number: 9162

Iqaluit

This study was entitled "Psychiatric Morbidity in an Arctic Urban Community." Dr. Sampath studied records at Baffin General Hospital, concentrating on the five-year period prior to the arrival of private practitioners. He used his results in a comparison with data he collected during 1968-69 on a similar study.

Physical Sciences

Rupert M.V. Summerson
ICEWALK CANADA
1774 Grey Nuns Drive
Orleans, Ontario
K1C 1C3

Agency: S Region: BA
Licence Number: 9005

Resolute Bay, Cape Columbia, northern Ellesmere Island to the North Pole

Mr. Summerson and his team collected snow samples for sulphate, chloride, and nitrate analysis. They measured levels of mercury in the air, as well as graphitic carbon particles and pollen as air mass tracers. Direct measurements of arctic haze was planned, using a sun photometer.

Physical Sciences

Dr. Bruce Ott
Norecol Environmental Consultants Ltd
700-1090 West Pender Street
Vancouver, B.C.
V6E 2N7

Agency: S Region: BA
Licence Number: 9067

Pistol and Turner Lakes, From Wilberforce Falls on the Hood River near Bathurst Inlet

Dr. Ott and his associates collected information on the quality of water at Pistol and Turner Lakes near Bathurst Inlet. Hydrological studies which dealt with the relationship of the water with the land surface, soil, underlying rocks and atmosphere were undertaken.

Physical Sciences

Dr. Richard Heron
Department of Geography
University of Windsor
Windsor, Ontario
N9B 3P4

Agency: S Region: BA
Licence Number: 9048

McMaster River and Small Lake near Resolute Bay

Dr. Heron and his assistant installed monitoring devices in snowdrifts which block stream channels. This study examined these snowdrifts and the way in which they break, since rapid thawing may cause flooding downstream.

Physical Sciences

Dr. Ming-ko Woo
Department of Geography
McMaster University
1280 Main Street West
Hamilton, Ontario
L8S 4K1

Agency: S Region: BA
Licence Number: 9050

McMaster River Basin near Resolute Bay

Dr. Woo and his team studied snow-melt and run off in order to get a better understanding of how the seasons and sunlight affect the Arctic environment.

Physical Sciences

Gary Sergy
Env. Can.,Conservation & Protection
Western and Northern Region
Twin Attria #2,2nd Flr.,4999- 98 Ave
Edmonton, AB
T6B 2X3

Agency: S Region: BA
Licence Number: 9142

Pond Inlet

Mr. Sergy and his research team resurveyed a beach in Pond Inlet on which oil had been released experimentally. This is an ongoing study to estimate the natural behavior and rates of removal of oil from an arctic beach.

Physical Sciences

S.D. Rajan
Woods Hole Oceanographic Institute
Bigelow 302
Woods Hole, Massachusetts, U.S.A.
02543

Agency: S Region: BA
Licence Number: 9054

Resolute and Griper Bay area

Mr. Rajan and his team studied how sound waves are carried under sea ice. They drilled a pair of holes a known distance apart. A sound source was placed in one hole and a receiver in another. The time taken for the sound pulse to travel from one hole to the other was measured in order to determine the sound's speed.

Social Sciences

Father Guy Mary-Rousseliere
Roman Catholic Mission
Pond Inlet, Northwest Territories
Canada
X0A 0S0

Agency: A Region: BA
Licence Number: 89-653

Navy Board Inlet, Bylot Island (near Pond Inlet).

Last summer, Father Mary-Rouselliere and his crew excavated a very large house complex at the Nunguvik site. The discovery of a harpoon rest suggests that the Dorset people may have hunted seal at their breathing holes on the sea ice. Team members also examined a house ruin on the south shore of Bylot Island (which Father Mary-Rousseliere discovered 17 years before).

Social Sciences

James Helmer
Department of Archaeology
University of Calgary
2500 University Drive N. West
Calgary, Alberta
T2N 1N4

Agency: A Region: BA
Licence Number: 89-668

Truro and Little Cornwallis Islands

Working near the site of the Polaris Mine, James Helmer inspected several archaeological sites attributed to the Dorset Culture. These contained several interesting carvings as well as several small stone blades. The sites have been marked and will be protected for further study.

Social Sciences

Susan Rowley
Department of Anthropology
University of Alberta
Edmonton,
Alberta
T6G 2H4

Agency: A Region: BA
Licence Number: 89-667

Igloolik Island

Numerous archaeological sites on Igloolik Island had not yet been surveyed. Ms. Rowley wanted to do this before sites were disturbed. Many sites on the west of the island were excavated and it was discovered that most were remains of sites of the Dorset people. Several large Thule, proto-Historic (early historic) and historic sites were also found.

Social Sciences

Pat Sutherland
Canadian Museum of Civilization
100 Laurier Street
Box 3100, Station B
Hull, Quebec
J8X 4H2

Agency: A Region: BA
Licence Number: 89-671

Borden Penninsula, northern Baffin Island

Archaeological sites were located and identified before development for the Department of National Defense takes place. A number of sites of Thule origin were located along the Admiralty Inlet coast. A few sites were also found on eastern Melville Island. All sites were located through aerial and ground surveys.

Social Sciences

James Savelle
Department of Anthropology
McGill University
855 Sherbrooke Street West
Montreal, Quebec
H3A 2T7

Agency: A Region: BA
Licence Number: 89-669

Hazard Inlet on Somerset Island

A crew of seven mapped and excavated two large prehistoric Thule Inuit sites. Some significant finds included large winter or partially underground houses made with sod, stone and whalebone, ceremonial kariqi, shallow sod qarmat and the remains of over 250 bowhead whales. A week was spent at Creswell Bay observing modern whaling techniques .

Social Sciences

Yves Labreche
Laboratoire d'archeologie
Universite du Quebec a Montreal
CP 8888, Succ. 'A'
Montreal, Quebec
H3C 3P8

Agency: A Region: BA
Licence Number: 89-672

Joy Bay, Ungava Bay; Ukiivik Island

In the investigation of houses resembling those of the Thule many well-preserved animal bones as well as ivory buckles, harpoon heads and a figurine were found. Tools, pots and lamps were also discovered. An unusual find was a piece of pottery. The Thule probably lived in the region about 500 years ago. A new site was also discovered. Two women from Kangiqsujuaq provided the researchers with some traditional knowledge about food.

Social Sciences

Kevin Lunn
Canadian Parks Service
Prairie and Northern Region
457 Main Street
Winnipeg, Manitoba
R3B 3E8

Agency: A Region: BA
Licence Number: 89-673

Blacklead Island, Cumberland Sound or Umanajuak

This important whaling site was mapped by the crew. This site was chosen by American and Scottish whalers presumably because of a good view of the whales from a mountain. A Church Missionary Socley established a mission here in 1894. Though not a traditional site, in 1897 over one hundred Inuit worked and lived here. By 1935 the settlement was very small with inhabitants having moved to Pangnirtung and Kingmiksok.

Social Sciences

Peter Schledermann
Arctic Institute of N. America
University of Calgary
2500 University Dr. N. West
Calgary, Alberta
T2N 1N4

Agency: A Region: BA
Licence Number: 89-658

Goding Bay, Ellesmere Island

Mr. Schledermann and Karen McCullough investigated sites from the late Dorset, late Thule and early Arctic Small Tool periods (featuring the first people in the Canadian Arctic). Excavation revealed strong cultural influence from Greenland and possibly a 19th century migration of Inuit from Baffin Island. Cape Dunsterville, consisting of 16 early Thule houses, was visited. Weather conditions and polar bear visits challenged the investigators.

Social Sciences

Leigh Clark
Instructor EATEP, Arctic College
P.O. Box 1329
Iqaluit, NWT
X0A 0H0

Agency: S Region: BA
Licence Number: 9002

Iqaluit

Mr. Clark examined the use of computers in elementary schools in Iqaluit. He made classroom observations and interviewed children, staff and school board members. Special attention was paid to information which mentioned the use of computers in language learning.

Social Sciences

Leena Evic Twerdin
c/o Baffin Divisional Board of Education
Box 1330
Iqaluit, NWT
X0E 0H0

Agency: S Region: BA
Licence Number: 9008

Iqaluit

Ms. Evic Twerdin contacted Inuit students who have been to university in the south and may or may not have completed their studies. She conducted interviews with the students and other people who may have suggestions for a pre-university course and its content.

Social Sciences

Elijah Tigullaraq
Arctic College, Nunatta Campus
Eastern Arctic Teachers Education Program
P.O. Box 1000
Iqaluit, N.W.T. X0A 0H0

Agency: S Region: BA
Licence Number: 9013

Igloolik

Elijah Tigullaraq and Ooloota Maatiusi interviewed children in Igloolik aged 2 to 5 to study Inuktitut morphemes (short words or phrases of meaning). They looked at wordless story books with the children and got them to tell the story again in their own words. The children drew pictures and talked about their drawings. All conversations were in Inuktitut. All parents of the children gave consent first.

Social Sciences

Gwen Reimer
Department of Anthropology
McMaster University
1280 Main Street West
Hamilton, Ontario
L8S 4L9

Agency: S Region: BA
Licence Number: 9016

Pangnirtung

Ms. Reimer conducted interviews with local people involved in locally controlled tourism development. She also collected information regarding the social and cultural effects of tourism in the community of Pangnirtung.

Social Sciences

Dr. Jill Oakes
Clothing & Textiles Dept.
University of Manitoba
Winnipeg,
Manitoba
R3T 2M2

Agency: S Region: BA
Licence Number: 9004

Sanikiluaq

Dr. Oakes documented bird skin clothing production in Sanikiluaq. The information included skin selection, skin preparation, pattern development, garment construction and maintenance of eider duck parkas. The clothing and artifacts were assembled in an exhibition which included a booklet (English and Inuktitut) and a short video film. The show travels to schools and museums in the NWT, Quebec, and Labrador.

Social Sciences

Dr. George W. Wenzel
Department of Geography
McGill University
805 Sherbrooke Street West
Montreal, P.Q.
H3A 2K6

Agency: S Region: BA
Licence Number: 9025

Clyde River

Dr. Wenzel continued the work begun in 1988 to learn about the costs of hunting. He investigated some academic questions such as: "Is there a better definition for the words 'subsistence economy'?" and "Can you collect accurate harvest data if you only interview some hunters instead of all hunters?"

Social Sciences

Dr. Andris Rode
50 Belmont Avenue
Ottawa, Ontario
K1S 0V1

Agency: S Region: BA
Licence Number: 9053

Igloolik

Dr. Rode and his team repeated observations and studies made upon adult members of the Igloolik community 18 years ago. The study examined how their lives (physical activity, health, fitness, energy flow) have changed since the introduction of the 'white' lifestyle in the community.

Social Sciences

Michele Dupuis
Department of Geography
McGill University, Burnside Hall
805 Sherbrooke Street West
Montreal, Quebec
H3A 2K6

Agency: S Region: BA
Licence Number: 9086

Hamlet of Lake Harbour

Ms. Dupuis lived with an Inuit family for a period of four to six weeks. She conducted informal interviews as well as more formal but brief questionnaires on hunting, housekeeping and shopping information.

Social Sciences

Karla Williamson
1017 Temperance Street
Saskatoon, Saskatchewan
S7N 0N5

Agency: S Region: BA
Licence Number: 9088

Pangnirtung, Baffin Island

Ms. Williamson inquired regarding Inuit perception of the physical environment. How does their particular understanding influence human behavior? How is such knowledge carried into the next generation? This information will be used as foundation material for the improved development of arctic school curricula. Interviews of approximately 20 community people in 3 different age groups were conducted.

Social Sciences

Rachel Szymanski
19 Hallbank Terrace
Agincourt, Ontario
M1S 2V8

Agency: S Region: BA
Licence Number: 9092

Iqaluit

Ms. Szymanski examined the significance and relevance of Inuit broadcast television images during a period of rapid cultural and social changes. Changes that are affecting Inuit women's traditional roles, responsibilities and perceptions were studied.

Social Sciences

Grise Fiord

Lyle Dick
Environment Canada
457 Main Street
Winnipeg, Manitoba
R3B 3E8

Mr. Dick, with the Canadian Parks Service, planned this oral history project with the community council of Grise Fiord. Local residents were hired to carry out interviews and to translate and return copies of all information back to the community.

Agency: S Region: BA
Licence Number: 9118

Social Sciences

Iqaluit and Cape Dorset

Wayne Warry
Assistant Professor
Anthropology Dept.,McMaster Univ.
1280 Main Street West
Hamilton, Ontario
L8S 4L9

Mr. Warry made a visit to the Baffin region to do preliminary research on criminal justice and its relationship with mental health issues. His work will relate to his long term goal of understanding the culturally based reasons for native peoples' conflict with the law. His actual research will begin in 1990-91.

Agency: S Region: BA
Licence Number: 9126

Social Sciences

Cumberland Sound, Baffin Island

Marc Stevenson
11207 48th Ave
Edmonton, Alberta
T6H 0C8

Mr. Stevenson recorded the social organization of traditional outpost camps of ancient peoples. This was done in order to determine the organization's effects on archaeological patterning.

Agency: S Region: BA
Licence Number: 9135

Social Sciences

Pangnirtung

Sandra Sweeney
School for
Resource & Environmental Studies
1312 Robie Street
Halifax, Nova Scotia
B3H 3E2

Ms. Sweeney spoke with members of the Pangnirtung Hunters' & Trappers' Association to better understand the importance of whale hunting and to find out how myth, and rituals relate to the whale hunt. She also evaluated the recommendation from the 'Whales Beneath the Ice' program which proposes decentralized Inuit control over whale populations.

Agency: S Region: BA
Licence Number: 9060

Social Sciences

Iqaluit

Jeanette Ireland
Box 547
Iqaluit, NWT
X0A 0H0

Jeanette Ireland has been collecting oral Inuit stories from elders of various eastern Arctic communities and written Inuit textbooks. She wants to see how Inuit stories change when they are translated into English. By learning about this change, she can make recommendations to improve Inuit textbooks that are written for schools. In this way, the textbooks would reflect how Inuit think and feel about the world.

Agency: S Region: BA
Licence Number: 9064

Social Sciences

Igloolik

Bernard Saladin d'Anglure
Faculte des Sciences Sociales
Departement d'Anthropologie
Universite Laval
Ste-Foy, Quebec
G1K 7P4

Mr. d'Anglure and his team gathered information as part of a continuing research project in Igloolik focusing on a historical view regarding the sexual division of labor and the social categories of sex.

Agency: S Region: BA
Licence Number: 9110

FORT SMITH REGION

Applied & Biological Sciences

Robert Ferguson
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
X1A 2L9

Agency: R Region: FS
Licence Number: N/A

Various locations southern Mackenzie

Mr. Ferguson monitored bird population changes to determine if adverse trends, due to development and other factors, are occuring.

Applied & Biological Sciences

Chris Schmidt
Norecol Environmental Consult. Ltd.
700-1090 W.Pender St.
Vancouver,
British Columbia
V6E 2N7

Agency: R Region: FS
Licence Number: 1489

Pine Point

Mr. Schmidt collected data on current furbearer use of the Pine Point tailings pond. He conducted aerial surveys, ground transects, and interviewed members of the Fort Resolution Hunters' and Trappers' Association and Renewable Resources personnel.

Applied & Biological Sciences

D.M. Wishart
Interprovinicial Pipelines
Box 398
Edmonton,
Alberta
T5J 2J9

Agency: R Region: FS
Licence Number: 1469

MacKenzie Pipeline Right-of way

Mr. Wishart evaluated the effect of the pipeline on wildlife utilization in the Right-of-Way area. He continued to conduct track counts in the region.

Applied & Physical Sciences

Dr. Stephen Lonergan
Department of Geography
McMaster University
1280 Main Street West
Hamilton, Ontario
L8S 4K1

Agency: S Region: FS
Licence Number: 9044

Hay River, Yellowknife and Norman Wells

Dr. Lonergan and his team looked at the effect of water levels, flooding, ice and snow production on the transportation systems in the Mackenzie Valley. They tried to estimate what economic affects the changing climate will have on our transportation systems.

Applied Sciences

John E. Bickel
Mail Code 543, Dept of the Navy
Naval Ocean Systems Centre
San Diego, California, U.S.A.
92152

Agency: S Region: FS
Licence Number: 9077

Fort Smith

An antenna and a computer operated VLF (very low frequency) signal receiving and recording equipment were set up in the Atmospheric Environment Service facility in Fort Smith. This is part of a 2 year study. Training was provided to Atmospheric Environment Service personnel on how to collect data.

Applied Sciences

John B. Morris
RADC/EECP
Hanscom, AFB
Massachusetts, U.S.A.
01731-5000

Agency: S Region: FS
Licence Number: 9121

Royal Canadian Mounted Police Field Site, Yellowknife

Mr. Morris conducted an experiment to explore the limitations imposed on antenna size due to the propagation medium. Long range antennae that 'see' beyond the earth's curvature provide advanced notice of approaching targets.

Biological & Earth Sciences

Diane Spivey
Geography Department Rm B349 Loeb
Carleton University
Ottawa, Ontario
K1S 5B6

Agency: S Region: FS
Licence Number: 9152

Fort Simpson area

Ms. Spivey is interested in knowing why there is less permafrost now in peatbogs. First, she mapped areas that have thawed and collapsed. Then, she sampled vegetation to see if the vegetation had been disturbed so that it no longer insulated the permafrost as well. Finally, she studied how well peat retains heat and acts as an insulator. This was a continuation of her 1988 research.

Biological & Earth Sciences

Dr. Glen M. MacDonald
Department of Geography
McMaster University
1280 Main Street West
Hamilton, Ontario
L8S 4K1

Agency: S Region: FS
Licence Number: 9012

Hay River area

Dr. Glen MacDonald and his team obtained lake sediment cores, samples of pine needles, cones, seeds and tree-ring cores from 2 sites near Hay River. Fossil pollen from the sediment is used to document the chronology of pine migration into the NWT following the last ice-age. The study was used to understand the postglacial history of northern plants.

Biological Sciences

Cormack Gates
Ren. Res.
GNWT
P.O. Box 390
Fort Smith, NT
X0E 0P0

Agency: R Region: FS
Licence Number: N/A

Fort Providence

Mr. Gates did composition surveys and radio-collar tracking of bison to complete a habitat analysis.

Biological Sciences

Ron Graf
Ren. Res.
GNWT
P.O. Box 390
Fort Smith, NT
X0E 0P0

Agency: R Region: FS
Licence Number: N/A

Big River area

Mr. Graf determined age/sex ratios and the home range of animals both in and out of the trapping area.

Biological Sciences

Ron Graf
Ren. Res.
GNWT
P.O. Box 390
Fort Smith, NT
X0E 0P0

Agency: R Region: FS
Licence Number: N/A

Snowdrift hunting area

Mr. Graf studied the distribution of muskox and estimated a population size.

Biological Sciences

60 km radius of YK

Doug Heard
82 Morrison Dr.
Yellowknife, NT
X1A 1Z2

Mr. Heard studied ravens by banding fledglings, observing their behaviour and performing necropsies (postmortem examinations).

Agency: R
Licence Number: N/A

Region: FS

Biological Sciences

Beverly Caribou Range

Doug Heard
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
X1A 2L9

Mr. Heard conducted aerial counts and collected wolf & caribou samples to assess population growth.

Agency: R
Licence Number: N/A

Region: FS

Biological Sciences

Within 50 Km. radius of Yellowknife

James Hines
Canadian Wildlife Service
Box 637
Yellowknife,
Northwest Territories
X1A 2N5

Mr. Hines determined habitat requirements, population density and the age and sex composition of spruce grouse.

Agency: R
Licence Number: 1550

Region: FS

Biological Sciences

400m each side of Yellowknife Highway

James Hines
Can. Wildlife Service
Box 637
Yellowknife,
NT
X1A 2N5

Mr. Hines determined factors that limit size, composition and productivity of breeding birds.

Agency: R
Licence Number: 1549

Region: FS

Biological Sciences

Fort Smith Area

Ernie Kuyt
CWS
Environment Canada
2nd Flr.,4999-98 Ave.
Edmonton, AB
T6B 2X3

Mr. Kuyt studied migration patterns and the reproductive success of American kestrels. Nesting sites were also located.

Agency: R
Licence Number: N/A

Region: FS

Biological Sciences

Nahanni and Camsell Bend

Kevin McCormick
Canadian Wildlife Service
Box 637
Yellowknife, NT
X1A 2N5

Mr. McCormick live captured and banded Trumpeter swans.

Agency: R
Licence Number: N/A

Region: FS

Biological Sciences

Dr. Bruce Ott
Norecol Environmental Consult. Ltd.
700-1090 W. Pender St.
Vancouver,
British Columbia
V6E 2N7

Agency: R Region: FS
Licence Number: 1210/1213

Pistol/Turner Lakes, Wildberforce Falls; Nicholas Lake

Dr. Ott examined eskers (the remains of sub-glacial stream beds). In particular he investigated their use by furbearers, rodents, large mammals and waterfowl.

Biological Sciences

John Polson
Environment Division
Saskatchewan Research Council
15 Innovation Blvd.
Saskatoon, Sask.
S7N 2X8

Agency: R Region: FS
Licence Number: 1460

Thor Lake Area

Mr. Polson gathered baseline information on wildlife groups & evaluated the impacts of mining on them. He concentrated on moose and barren-ground caribou when performing his aerial surveys.

Biological Sciences

Kim Poole
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Agency: R Region: FS
Licence Number: N/A

Ft. Simpson, Ft. Rae, Ft. Smith & Ft. Prov.

Mr. Poole collected lynx & marten carcasses to determine age, sex & reproductive conditions.

Biological Sciences

Kim Poole
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Agency: R Region: FS
Licence Number: N/A

Mackenzie Valley

Mr. Poole determined the density of occupied beaver colonies and identified areas for harvest increases.

Biological Sciences

Kim Poole
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Agency: R Region: FS
Licence Number: 1492

Calais Lake

Mr. Poole determined the home range size and movement patterns of lynx. Habitat use was also studied. To do this he monitored the animals from light aircraft and using radio tracking. He also conducted track counts and analyzed carcasses which were provided by local trappers. Finally this information was related to data on snowshoe hare densities.

Biological Sciences

Ron Graf
Ren. Res.
GNWT
Box 390
Ft. Smith, NT
XOE OPO

Agency: R Region: FS
Licence Number: N/A

N. of Yellowknife

Mr. Graf determined sex and percentage of calf survival using satellite imagery versus standard techniques.

Biological Sciences

John Solberg
U.S. Fish and Wildlife Service-MBMO
Box 1686
Kearney, Nebraska, U.S.A.
68848

Agency: R Region: FS
Licence Number: 1211

Mills Lake

Mr. Solberg did some pre-season banding of waterfowl.

Biological Sciences

Leslie Wakelyn
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Agency: R Region: FS
Licence Number: N/A

Yellowknife River Fiddler Lagoon

Ms. Wakelyn determined the relationship between clutch size, food abundance & number of eggs laid by tree swallows.

Biological Sciences

Sean P. Abbott
Microfungus Collection&Herbarium
Devonian Botanic Garden
University of Alberta
Edmonton, Alberta
T6G 2E1

Agency: S Region: FS
Licence Number: 9150

Fort Smith region in the general areas of Enterprise and Ft. Simpson

Mr. Abbott and his team collected specimens of fungi in the genus Helvella. Specimens were photographed, described and dried for preservation in the Devonian Botanic Garden.

Biological Sciences

Dr. Ross Wein
Director, Boreal Institute
CW 401 Biological Sciences Building
The University of Alberta
Edmonton, AB
T6G 2E9

Agency: S Region: FS
Licence Number: 9108

North of Wood Buffalo Park

Dr. Wein and his research team studied permafrost-based wetland forests that were burned by severe fires in 1981.

Earth Sciences

Gordon C. Jacoby
Lamont-Doherty
Geological Observatory
Columbia University
Palisades, New York, U.S.A.
10964

Agency: S Region: FS
Licence Number: 9123

Fort Simpson, Lac La Martre, Great Slave Lake near Yellowknife

The object of this research was to reconstruct past climate systems in order to understand how the climate system works, and what past natural variations may be expected to be repeated based upon this information. In this project samples of old-aged trees were used to reconstruct regional and Hemispheric temperatures for the most recent centuries.

Earth Sciences

Dr. Bruce Ott
Norecol Environmental Consultants Ltd.
700-1090 West Pender Street
Vancouver, B.C.
V6E 2N7

Agency: S Region: FS
Licence Number: 9017

Nicholas Lake, 40 miles northwest of Gordon Lake

Dr. Ott and his team collected baseline environmental data on natural conditions at Nicholas Lake. This included collecting water, soils and vegetation baseline data as well as conducting fisheries and habitat surveys. Archaeology and heritage surveys will be done by a sub-consultant.

Earth Sciences

Dr. Derald Smith
Professor of Geography
University of Calgary
2500 University Drive NW
Calgary, Alberta T2N 1N4

Agency: S Region: FS
Licence Number: 9037

Mackenzie River; from Fort Simpson to Fort Good Hope

Dr. Smith and his team continued their study of sediments in river cutbanks along the Mackenzie River and its tributaries between Fort Simpson and Wrigley. They wished to verify or reject the idea of the existance of a former lake in the Camsell Bend region about 11,000 years ago.

Earth Sciences

Cynthia J. Davey
503 Chapel Street
Ottawa, Ontario
K1N 8A1

Agency: S Region: FS
Licence Number: 9109

Yellowknife

Ms. Davey conducted research in the Yellowknife area with the assistance of a guide. She tried to gather information regarding seismic lines and how these lines affect the people living in the area.

Earth Sciences

Dr. D. S. Lemmen
Geological Survey of Canada
601 Booth Street
Ottawa, Ontario
K1A 0E8

Agency: S Region: FS
Licence Number: 9041

Hwys. 1, 2, 5, & 6 near Hay River, Pine Point, Forts Resolution & Smith & Yellowknife

Dr. Lemmen and his assistant collected soil samples. Their findings are helpful in setting Land Use Regulations for mineral explorations and engineering construction. The field geology work also provided historical data for the area.

Physical Sciences

Ian Robertson
University of Calgary
2500 Univ. Dr. N.W.
Calgary, AB
T2N 1N4

Agency: A Region: FS
Licence Number: N/A

Mackenzie Valley between Camsell Valley and the comunity of Fort Wrigley

Mr. Robertson and Mr. Hanna of Simon Fraser University in conjunction with Dr. Derald Smith of the University of Calgary, examined the glacial beaches which remain along what were once the shores of Glacial Lake Mackenzie. In this way, insight as to the travels of the Clovis peoples 100,000 years ago was gained.

Physical Sciences

Gene O.E. Hachey
Agriculture Development Officer
GNWT Economic Development and Tourism
P.O. Box 1366
Hay River, NWT X0E 0R0

Agency: S Region: FS
Licence Number: 9015

Fort Smith; Hay River; Fort Simpson

Mr. Gene Hachey and the NWT Farmers Association conducted research to enhance the knowledge base concerning horticultural production methods. Farmers from Fort Smith, Fort Simpson and Hay River made sites available on their holdings to allow for evaluation of vegetable and berry varieties, production methods and associated testing.

Physical Sciences

Alain P. Roy
Department of Geography
University of Ottawa
165 Waller Street
Ottawa, Ontario
K1N 6N5

Agency: S Region: FS
Licence Number: 9081

Selwyn Mountains, MacMillan Pass and Tungsten Areas

Mr. Roy carried out field work at two different sites, specifically MacMillan Pass and Tungsten. At each site, he examined two main items: the vegetation and the soil. Dry specimens were collected while he examined the other plants of the community and a small soil sample (approximately 200 grams) was taken.

Social Sciences

Yellowknife

Geoffrey Weller
Vice President (Acedemic)
Lakehead University
Thunder Bay, Ontario
P7B 5E1

Mr. Weller is part of a group of researchers investigating the process of devolution and its impact on constitutional development in the North. He will be detailing the federal-territorial process of negotiating devolution of health care services with particular attention to the personnel and administrative arrangements.

Agency: S Region: FS
Licence Number: 9007

Social Sciences

Yellowknife and Fort Smith

Dr. Francis Abele
School of Public Administration
Carleton University
Ottawa, Ontario
K1S 5B6

Dr. Francis Abele studied the transfer of government responsibilities from the federal to territorial government. In particular, she studied the transfer of fire fighting and forestry management. Her main questions were: "Did the transfer lead to better services for northerners?" and, "What effect will this have on Land Claims and constitutional development?"

Agency: S Region: FS
Licence Number: 9026

Social Sciences

East Arm of Great Slave Lake

Murray McComb
Canadian Parks Service
10 Wellington Street
Hull, Quebec
K1A 0H3

The researcher and field party worked with the Lutsel K'e Dene Band to learn of their concerns for the future use of the East Arm area.

Agency: S Region: FS
Licence Number: 9156

Social Sciences

Fort Smith

Fikret Berkes
Urban & Environmental Studies Ins.
Brock University
St. Catharines, Ontario

Mr. Berkes assisted the Dene Cultural Institute in a pilot project on Dene Traditional Knowledge. They talked to the Dene in the Fort Smith region to learn of the role of the hunters, their traditional ways of hunting, and their method for preservation of the wildlife around them.

Agency: S Region: FS

Licence Number: 9051

Social Sciences

Yellowknife, NWT

Dr. Mark Dickerson
Department of Political Science
University of Calgary
2500 University Drive NW
Calgary, Alberta
T2N 1N4

Dr. Dickerson wrote a historical account on the political evolution of the government in the NWT from 1920 to the present.

Agency: S Region: FS
Licence Number: 9084

Social Sciences

Ft. Good Hope

Martha Johnson
Research Director
Dene Cultural Institute
Box 207
Yellowknife, NWT
X1A 2N2

The researchers gathered information regarding the establishment of a system of wildlife management and land use planning in Denendeh. The system is to combine both western scientific and traditional approaches to environmental management. Information will also be used for northern curriculum development in the sciences and social studies programmes.

Agency: S Region: FS
Licence Number: 9145

INUVIK REGION

Applied & Biological Sciences

Dr. Peter Kershaw
Department of Geography
University of Alberta
Edmonton, Alberta
T6G 2H4

Agency: S Region: IN
Licence Number: 9027

10km north of Fort Norman

Dr. Peter Kershaw and his team continued his work begun in 1985 to assess and monitor the environmental characteristics of disturbed and undisturbed forest areas, in relation to revegetation and rehabilitation of pipeline corridors. His work also tests impact from northern crude-oil spills.

Applied Sciences

Gene O.E. Hachey
Agriculture Development Officer
GNWT Economic Development and Tourism
P.O. Box 1366
Hay River, N.W.T. X0E 0R0

Agency: S Region: IN
Licence Number: 9014

Norman Wells

Mr. Gene Hachey and his team examined a new method for producing horticultural crops on a year round basis in areas North of 60. The project involves the building of a prototype light collection and transmission device. The potential for irradiating horticultural crops grown in an opaque, insulated structure such as a green house, is investigated.

Applied Sciences

Christopher H. Gnieser
Geography Department
Box 751
Portland, Oregon, U.S.A.
97207

Agency: S Region: IN
Licence Number: 9128

Fort Simpson-Inuvik Toll Road

Mr. Gnieser studied about 20 sites along the outlined winter road to assess potential terrain disturbances.

Biological & Applied Sciences

Peter Clarkson
Ren. Res.
GNWT
Inuvik Region
Inuvik, NT
XOE OTO

Agency: R Region: IN
Licence Number: 1484

Norman Wells

Mr. Clarkson studied the use of dumps and camps by black bears. He also investigated the success of relocating problem bears.

Biological & Applied Sciences

Robert Ferguson
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Agency: R Region: IN
Licence Number: 1208

Thomsen River, Banks Island

Mr. Ferguson investigated the use of Landsat data for habitat determination.

Biological & Earth Sciences

Dr. William Howland
Director, Northern Studies Program
Middlebury College
Middlebury, Vermont, U.S.A.
05753

Agency: S Region: IN
Licence Number: 9151

Inuvik

Dr. Howland and his assistant studied plants and landforms in the Caribou Hills. This was a continuation of research licenced in 1987.

Biological & Earth Sciences

Dr. Cheryl M. Pearce
Department of Geography
The University of Western Ontario
Social Sciences Centre
London, Ontario
N6A 5C2

Agency: S Region: IN
Licence Number: 9069

Inuvik/Tuktoyaktuk

Dr. Pearce and her assistant gathered information in the Inuvik and Tuktoyaktuk areas to see if lichens can be used as sensitive indicators of climate change. In the subarctic and arctic zones where lichens are an important component of ground vegetation this information would be significant.

Biological Sciences

Rudy Boonstra
Div. of Life Science
University of Toronto
Scarborough,
Ontario
M1C 1A4

Agency: R Region: IN
Licence Number: 1522

North Star Harbour Sachs Harbour

Mr. Boonstra determined the population distribution, age structure and social structure of lemmings. He also examined the effects of mating and stress on small animals.

Biological Sciences

Peter Clarkson
Ren. Res.
GNWT
Inuvik,
Northwest Territories
XOE OTO

Agency: R Region: IN
Licence Number: 1485

Horton/Anderson R., Inuvialuit Lands

Mr. Clarkson determined the density, productivity, home-range & seasonal habitat use of grizzly bears. He captured and tagged the animals then monitored them using radio-collars.

Biological Sciences

Peter Clarkson
Ren. Res.
GNWT
Inuvik Region
Inuvik, NT
XOE OTO

Agency: R Region: IN
Licence Number: 1486

Inuvik to Paulatuk, Inuvialuit Lands

Mr. Clarkson was interested in determining movements, denning areas, and predation rates of western Arctic wolves. He also investigated the wolf/caribou relationship.

Biological Sciences

Loney Dickson
Can. Wildlife Service
2nd Flr., 4999-98 Av.
Edmonton, AB
T6B 2X3

Agency: R Region: IN
Licence Number: 1523

Fish Island, Kendall Island Sanctuary

Mr. Dickson conducted a clean-up of this area. He flew into the site by helicopter. He removed wooden stakes and checked drill pads for nesting sites. Previously banded semipalmated plover birds were noted.

Biological Sciences

Lynn Dickson
Canadian Wildlife Service
2nd Flr.,4999-98 Avenue
Edmonton, Alberta
T6B 2X3

Agency: R Region: IN
Licence Number: 1535/0608

Tuktoyaktuk Peninsula

Ms. Dickson determined the average age of Red-throated loon fledglings. She monitored the reproductive success of the seabirds and recorded factors contributing to this.

Biological Sciences

James Hines
Can. Wildlife Service
Box 637
Yellowknife,
NT
X1A 2N5

Agency: R Region: IN
Licence Number: N/A

Mackenzie Delta & Tuk Peninsula areas.

Mr. Hines determined the important habitat areas and numbers of swans and geese in the Inuvialuit Settlement Region.

Biological Sciences

Jerry Hupp
U.S. Fish/Wildlife Service
Alaska Fish/Wildlife Service
1011 E. Tudor Rd.
Anchorage, Alaska
999503

Agency: R Region: IN
Licence Number: 1537/0609

Arctic Coast

Mr. Hupp collected 50 snow geese eggs and transported them to the Arctic National Wildlife Refuge. There the goslings will be hatched and raised in captivity for the purpose of studying foraging ecology.

Biological Sciences

Dr. Peter Kershaw
Dept. of Geography
Univ. of AB
Edmonton,
Alberta
T6G 2H4

Agency: R Region: IN
Licence Number: 1203

Transport Corridor Fort Norman

Mr. Kershaw determined distrubution, seasonal movement and population size of small mammals by creating a replica of a natural transport corridor.

Biological Sciences

Dr. Charles Krebs
Dept. of Biology
Univ. of British Columbia
Vancouver,
British Columbia
V6T 2A9

Agency: R Region: IN
Licence Number: 1521

Pearce Point; Horton Mason; Anderson River

Dr. Krebs determined population size, territorial behaviour and the home range of both lemmings and voles. He trapped the small animals and used radio transmitters to help obtain data.

Biological Sciences

Paul Latour
Renewable Resources
GNWT
P.O. Box 130
Norman Wells, NT
X0E 0V0

Agency: R Region: IN
Licence Number: N/A

25 Km west of Norman Wells

Mr. Latour determined the summer and winter ranges of marten. He also documented the availability of food in these seasonal habitats. The dispersal time of martens in this region was also noted.

Biological Sciences

Andre Legris
Room 113
Biology Department
Trent University
Peterborough , Ont
K9J 7B8

Agency: R
Licence Number: 1506

Region: IN

Dempster Highway, Inuvik/Arctic Red R.

Mr. Legris monitored habitat use by passerine (a large biological order of birds) and captured some for banding. He also assessed the level of predation or feeding upon nests by collecting fecal samples.

Biological Sciences

Riley McClelland
School of Forestry
University of Montana
Missoula, Montana
U.S.A.
59812

Agency: R
Licence Number: 1481

Region: IN

MacKenzie River Basin

Mr. McClelland located nests and the summer area of Bald Eagles previously banded in Glacier National Park. He tracked the birds using the radio devices they were fitted with.

Biological Sciences

Bruce McLean
Renewable Resources
GNWT
Bag Service #1
Inuvik, NT
X0E 0T0

Agency: R
Licence Number: N/A

Region: IN

Bluenose caribou range

Mr. McLean conducted classification counts and collected biological samples of bluenose caribou while tracking them with radio.

Biological Sciences

Bruce McLean
Renewable Resources
GNWT
Bag Service #1
Inuvik, NT
X0E 0T0

Agency: R
Licence Number: 1159

Region: IN

Banks Island

Mr. McLean collected various animals resident on Banks Island to research diseases afflicting the muskox. Aerial surveys, classification counts, studies on parasites, and range studies were also conducted. Further information was gained by attending commercial muskox harvests.

Biological Sciences

Bruce McLean
Ren. Res.
GNWT
Bag Serv. #1
Inuvik, NT
XOE OTO

Agency: R
Licence Number: N/A

Region: IN

Banks Island

Mr. McLean conducted aerial surveys of habitats to collect and analyse biological samples from animals.

Biological Sciences

Joachim Obst
General Delivery
Yellowknife,
Northwest Territories
Canada
X1A 2L8

Agency: R
Licence Number: 1503

Region: IN

Hornaday, Horton, and Anderson Rivers

Mr. Obst evaluated the population size, reproductivity, initiation of eggs layed, and prey species of raptors (predatory birds). Much of his work took place in the Anderson River Delta Migratory Bird Sanctuary.

Biological Sciences

Paul Latour
Ren. Res.
GNWT
P.O. Box 130
Norman Wells, NT
X0E 0V0

Agency: R
Licence Number: N/A

Region: IN

W. of Norman Wells

Mr. Latour estimated populations using bull:cow and cow:calf ratios of caribou. Animals were located using radio collars.

Biological Sciences

Kim Poole
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Agency: R
Licence Number: N/A

Region: IN

Inuvialuit Region

Mr. Poole determined the age and sex, reproductive history and fat condition of harvested wolverines.

Biological Sciences

Kim Poole
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Agency: R
Licence Number: N/A

Region: IN

Ft. Good Hope and Stump Lake Area

Mr. Poole determined the age and sex, as well as the reproductive condition of marten. Other small mammal populations were monitored too.

Biological Sciences

Chris Shank
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Agency: R
Licence Number: 1541/0612

Region: IN

Tuktoyaktuk and Anderson River

Mr. Shank analysed ptarmigan eggs for organochlorines. An example of an organochlorine is PCB. He searched for nests by locating, with the help of dogs, male birds who were "displaying" (following a behaviour pattern characteristic to the breeding season).

Biological Sciences

Chris Shank
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Agency: R
Licence Number: 1548

Region: IN

Richardson Mountain

Mr. Shank tried to determine the winter range, time of migration, and the travel routes of Gyrfalcons by radio tracking. Initially he had to conduct a helicopter survey to investigate nest sites. Nestlings were banded and weighed; blood samples were taken.

Biological Sciences

Chris Shank
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Agency: R
Licence Number: 1209

Region: IN

Inuvik to Norman Wells

Mr. Shank monitored the reproduction levels of peregrine falcons. He recorded occupancy rates of nests, banded the occupants and took blood samples from them. The survey was conducted by boat.

Biological Sciences

Chris Shank
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Agency: R Region: IN
Licence Number: N/A

Richardson Mountain West of Aklavik

Based on previous studies as well, Mr. Shank determined variation in numbers of birds between years. He used DNA fingerprinting to identify individual birds.

Biological Sciences

Thomas G. Smith
Renewable Resources Department
Macdonald Campus/McGill Univ.
c/o Gary Steno- 555 St. Pierre Blvd.
Ste. Anne de Bellevue, Quebec
H9X 3R4

Agency: S Region: IN
Licence Number: 9010

Holman Island

Dr. Thomas Smith took underwater recordings of bearded seal sounds. He collected data to describe and measure the vocal behavior of the seals underwater. He also collected bearded seals for dissection and analysis of the seal larynx. Roger Memorana of Holman was hired to work with Dr. Smith.

Biological Sciences

Dr. Ross Wein
Boreal Institute for N. Studies
CW 401 Biological Science Building
University of Alberta
Edmonton, Alberta
T6G 2E9

Agency: S Region: IN
Licence Number: 9065

Reid Lake and Sandy Lake

Dr. Wein and his assistant planted jack pine seedlings in the Reid Lake and Sandy Lake area where dry conditions simulate a drought. They hoped to find a species of jack pine which will survive drought conditions in more southern forests.

Biological Sciences

Dr. Ross Wein
Boreal Institute for N. Studies
CW 401 Biological Science Building
University of Alberta
Edmonton, Alberta
T6G 2E9

Agency: S Region: IN
Licence Number: 9074

Inuvik area; Tununuk Point; Tuktoyaktuk Peninsula

In the early 1970's, several test plots were established to see what happens when plants and soil are disturbed or removed by fire, oil spills and vehicles. Dr. Wein and two students revisited these sites to document how the plants have recovered since that time.

Biological Sciences

Karl Schwalme
Department of Zoology
University of Alberta
Edmonton, Alberta
T6G 2E9

Agency: S Region: IN
Licence Number: 9078

Inuvik; Campbell Lake; Shell Lake

Karl Schwalme continued work begun in 1988 regarding the fat content of pike. He collected about 50 great northern pike from each lake. He then took the fish back to the Inuvik Research Centre to determine their fat content. Since some of the fats help to prevent heart disease in people, the annual change has nutritional impacts.

Biological Sciences

Dr. Ralph E.H. Smith
Assistant Professor
Department of Biology
University of Waterloo
Waterloo, Ontario
N2L 3G1

Agency: S Region: IN
Licence Number: 9030

Resolute Bay

Dr. Smith and his team took cores from the sea ice and determined the abundace and activity of microscopic plants and bacteria in the ice and the seawater beneath. They hoped to learn why the amount of such plant material varies so much from time to time and from place to place, and how important these factors are to the animals that eat them.

Biological Sciences

Andre Legris
Room 113
Biology Department
Trent University
Peterborough, Ontario
K9J 7B8

Agency: S Region: IN
Licence Number: 9049

Dempster Highway near Inuvik and Arctic Red River

Mr. Legris and his assistant studied the way in which habitat and nest sites are used by different species in a subarctic bird community. This was done by examining the level of predation on nests of different species and how these same species used their habitat for feeding, resting and signing. This information will help to determine the factors that allow different bird species to coexist.

Biological Sciences

Richard A. Ring
Professor
Department of Biology
University of Victoria , Box 1700
Victoria, B.C.
V8W 2Y2

Agency: S Region: IN
Licence Number: 9136

Inuvik and Tuktoyaktuk

Mr. Ring continued an ongoing study on Arctic insect cold-tolerance.

Biological Sciences

W.A. Bond
Freshwater Institute
Fisheries & Oceans Canada
501 University Crescent
Winnipeg, Manitoba
R3T 2N6

Agency: S Region: IN
Licence Number: 9029

69o45' N. lat. 129o00' W. long. Anderson River Delta

Mr. Bond and his team set nets in Wood Bay near the mouth of the Anderson River to monitor seasonal movements of Arctic cisco (whitefish) in that area.

Biological & Social Sciences

Robert Bromley
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Agency: R Region: IN
Licence Number: 1525

Tuk/Paulatuk/Sachs Harbour/Liverpool Bay

Mr. Bromley noted the kinds of waterfowl shot by local residents. He also documented the sex and age of the birds retrieved during the spring waterfowl hunt.

Earth Sciences

S.R. Dallimore
Terrain Sciences Division
Geological Survey of Canada
601 Booth Street,
Ottawa, Ontario
K1A 0E8

Agency: S Region: IN
Licence Number: 9076

Richards Island - Mackenzie Delta

Mr. Dallimore and his team re-visited instrumented test-sites, completed mapping of surficial materials and collected limited soil samples for analyses.

Earth Sciences

Dr. Guy Narbonne
Associate Professor
Department of Geological Sciences
Queen's University
Kingston, Ontario
K7L 3N6

Agency: S Region: IN
Licence Number: 9117

Sekwi Mountain, Mount Eduni and Wrigley Lake

Dr. Narbonne and his research team examined and collected animal and plant fossil samples in the Sekwi Mountain, Mount Eduni and Wrigley Lake map areas.

Physical Sciences

Dr. J. Ross Mackay
Professor Emeritus
Department of Geography
University of Brit. Columbia
Vancouver, B.C.
V6T 1W5

Agency: S Region: IN
Licence Number: 9011

Tuktoyaktuk and area

Dr. Mackay continued the field research on permafrost along the Western Arctic Coast which has been ongoing since 1951. The basic objective is to better understand the origin of permafrost, the ice within permafrost, and the processes that helped to create the present environment.

Physical Sciences

Dr. Humfrey Melling
Institute of Ocean Sciences
Fisheries and Oceans Canada
P.O. Box 6000, 9860 West Saanich Rd.
Sidney, British Columbia
V8L 4B2

Agency: S Region: IN
Licence Number: 9020

Tuktoyaktuk and Beaufort Sea Area

Dr. Melling and his team studied sea-ice drift in the Beaufort Sea area. They collected data to characterize, in detail, the interaction of ice and oceanic motions, to estimate ice mass, ice movement, pressure at the sea floor and temperature-salinity profiles.

Physical Sciences

Larry Dyke
Asst. Prof./Geological Engineering
Department of Geological Sciences
Queen's University
Kingston, Ontario
K7L 3N6

Agency: S Region: IN
Licence Number: 9022

Richards Island

Mr. Larry Dyke returned to 7 locations on a spit located at the north end of Richards Island where temperature cables were installed the preceding July. Temperatures were again measured, along with ice thickness across the spit so that the thaw of this ice was accounted for in the prediction of ground temperatures.

Physical Sciences

Denis A. St. Onge
Terrain Science Division
Geological Survey of Canada
601 Booth Street
Ottawa, Ontario
K1A 0E8

Agency: S Region: IN
Licence Number: 9113

Dolphin Strait and Union Strait

Mr. St. Onge carried out field research in the Dolphin and Union Stait areas and collected sediment samples to determine their nature, origin and age.

Physical Sciences

Dr. C.R. Burn
Department of Geography
Social Science Centre
University of Western Ontario
London, Ontario
N6A 5C2

Agency: S Region: IN
Licence Number: 9019

Inuvik

Mr. Burn's team installed equipment to measure the growth of ice in the bottom of lakes after the water has frozen to the lake bed. The study included drilling the lake bottoms to determine the size of ice bodies that grow there over the winter. The research assisted in assessing how much frost heave may affect pipelines which must cross lakes.

Physical Sciences

A.L. Washburn
Professor Emeritus
Quaternary Research Centre AK-60
University of Washington
Seattle, Washington, USA
98195

Agency: S Region: IN
Licence Number: 9032

Resolute Bay Area

Dr. Washburn and his team continued his investigation into how the landscape has changed since the glaciers left 10,000 years ago. In particular, he was looking at how the effects of frost and permafrost have influenced the changes.

Social Sciences

Chris Hanks
Northern Heritage Centre
Government of the N.W.T.
Yellowknife,
Northwest Territories
X1A 2L9

Agency: A Region: IN
Licence Number: 89-659

Canol Pipeline route, from Norman Wells to the Yukon border.

Chris Hanks, Susan Irving and Susan Cross conducted an archaeological and architectural survey of this pipeline route which dates back to World War II. The purpose of the survey was to gather information on the use of the area by the Mountain Dene, and to see how the remaining structures along the route might be incorporated in a heritage trail.

Social Sciences

William E. Taylor, Jr.
Can. Museum of Civilization
100 Laurier S1treet
Box 3100, Station B
Hull, Quebec
J8X 4H2

Agency: A Region: IN
Licence Number: 89-666

Stapylton Bay, south shore of Amundsen Gulf

William E. Taylor and Jean Luc Pilon of the Archaeological Survey of Canada conducted a survey in the Stapylton Bay area to continue work begun in 1963. The researchers flew over 200 miles of coastline looking for archaeological sites. They also salvaged one Thule culture winter house at Clinton Point. Bones recovered reveal that the people hunted whale, seal and caribou.

Social Sciences

Charles Arnold
Senior Archaeologist
Pr. of Wa. Northern Heritage Centre
Government of the N.W.T.
Yellowknife, N.W.T.
X1A 2L9

Agency: A Region: IN
Licence Number: 89-652

Richards Island (50km west of Tuktoyakyuk).

The summer of 1989 was the final year of five years of excavations of archaeological sites at the mouth of the Mackenzie River. Work at the Gupuk site on Richards Island and at the nearby Pond site revealed driftwood and sod houses abandoned by the Inuvialuit in the mid 1800's.

Social Sciences

Raymond LeBlanc
Department of Anthropology
University of Alberta
Edmonton,
Alberta
T6G 2H4

Agency: A Region: IN
Licence Number: 89-656

Cape Bathurst Peninsula; Horton River mouth to Harrowby Bay

Dr. LeBlanc and his group spent 5 weeks excavating one site and trying to locate bedrock sources used by prehistoric hunters to make stone tools. Permafrost preserved many bone, wood, and antler artifacts as well as 2500-year-old meal remains. Antler harpoons and amulets and bone sewing needles were discovered with 33 new sites. Clinker (volcanic glass) traces were found; Clinker provided the early people with relatively unique tools.

Social Sciences

Wanda Wuttunee
Research Associate
Arctic Institute of North America
2500 University Drive NW
Calgary, Alberta
T2L 1Y2

Agency: S Region: IN
Licence Number: 9165

Inuvik

This was the first year of a four year project focusing on development of sustainable small businesses in the North. Twenty case studies formed the foundation of the case study handbook which was to be published when the research was completed. Sectors studied included agriculture, business and entrepreneurship, forestry, fisheries, wildlife, tourism, and general and miscellaneous services.

Social Sciences

Helen Tomalik
389 Church Street
701 B
Toronto, ON
M5B 2E5

Agency: S Region: IN
Licence Number: 9120

Ft. Franklin, Ft. McPherson, Paulatuk and Inuvik

Ms. Tomalik, a student at Ryerson Polytechnical Institute, conducted surveys in four communities under the supervision of the Inuvik Regional Nutritionist. Information on food prices and food intake was collected. The information will be used by the Department of Social Services for calculating the Food Allowance Scale.

Social Sciences

Dr. Jill Oakes
Department of Clothing & Textiles
University of Manitoba
Winnipeg, Manitoba
R3T 2N2

Agency: S Region: IN
Licence Number: 9164

Spence Bay, Pelly Bay, Aklavik and Paulatuk

Inuvialuit and Netsilik Inuit were interviewed in their homes, sewing igloos and sewing clubs. The research assistants participated in all skin preparation and clothing production phases of boot production. Photographs, sketches, and notes were used to record techniques and variations in socio-cultural-physical environments.

Social Sciences

Stephen Winn
Graduate Student
Department of Geography
Carleton University
Ottawa, Ontario
K1S 2B6

Agency: S Region: IN
Licence Number: 9055

Inuvik

As part of a Masters thesis in Geography, Mr. Winn conducted interviews with Inuvialuit, federal, and territorial government representatives on several co-management bodies established under the Inuvialuit Final Agreement. The purpose of the research was to determine whether the Agreement has led to more direct and meaningful Inuvialuit participation in renewable resource management and decision-making.

Social Sciences

Hamar Foster
Faculty of Law
University of Victoria
Box 2400
Victoria, B.C.
V8W 3H7

Agency: S Region: IN
Licence Number: 9104

Fort Norman

Mr. Foster interviewed Mrs. Yakeleya and Mrs. Menacho of the Fort Norman Dene Band about a historical event involving the killings of eleven men, women and children of the Hare Indian Band near Great Bear Lake in December, 1835. He is researching the topic of law enforcement during the fur trading period of 1763-1859.

Social Sciences

Jaganath Pathy
c/o Robert Ellis
Boreal Institute for N. Studies
CW 401 Biological Sciences Building
Edmonton, AB
T6G 2E9

Agency: S Region: IN
Licence Number: 9163

Inuvik and Tuktoyaktuk

Dr. Pathy interviewed local Inuit about their conceptions of land, time, space, nature, culture and methods of decision making. The community councils of Inuvik and Tuktoyaktuk assisted him.

Social Sciences

Nicole Beaudry
Department of Music
University of Quebec
#7 - 6285 St. Valier
Montreal, Quebec
H2S 2P6

Agency: S Region: IN
Licence Number: 9006

Fort Norman; Fort Franklin

Ms. Beaudry continued the work she began in 1988 by documenting the singing, dancing and game activities of the people who live in Fort Franklin and Fort Norman. She also conducted interviews with elders and made recordings where appropriate.

KEEWATIN REGION

Applied & Biological Sciences

Donald Lush
Beak Consultants Ltd.
14 Abacus Road
Brampton,
Ontario
L6T 5B7

Agency: R Region: KE
Licence Number: 1530

Baker Lake area

Mr. Lush tried to determine whether unusual levels of trace elements or radionuclides were present in various wildlife. He did so by collecting samples of flesh and bone from the animals.

Applied & Biological Sciences

Steve Matthews
Renewable Resources
GNWT
Box 1320
Yellowknife, NT
X1A 2R1

Agency: R Region: KE
Licence Number: N/A

Kiggavik Mine area, Baker Lake

Mr. Matthews produced digital wildlife habitat classification maps to evaluate remote sensing.

Applied & Biological Sciences

Dr. Glenn Parker
Dept. of Biology
Laurentian University
Sudbury,
Ontario
P3E 2C6

Agency: R Region: KE
Licence Number: 1500

Kaminuriak Caribou Range

Dr. Parker investigated the transference of heavy metals through the food chain. He did this by examining the internal organs of harvested caribou.

Biological Sciences

Lisa Akler
Dept. of Biology
York University
4700 Keele St.
North York, Ont.
N3J 1P3

Agency: R Region: KE
Licence Number: 1201

Rankin Inlet and Eskimo Point

Ms. Akler examined variations in parental care between 2 subspecies of microtine rodents.

Biological Sciences

Andrew Didiuk
Canadian Wildlife Serv.
501 University Cres.
Winnipeg, Man
R3T 2N6

Agency: R Region: KE
Licence Number: 1206

Eskimo Point;Great Plains of Koukdjuak

Mr. Didiuk banded and measured geese. Both adults and goslings were banded. Some legbands and some neckbands were used.

Biological Sciences

Rankin Inlet

Thomas Duncan
Department of Anatomy
University of Saskatchewan
Saskatoon,
Saskatchewan
S7N 0W0

Mr. Duncan trapped adult peregrine falcons using pigeons and noose carpets. He then collected prey remains and pellets from the peregrine nests while observing nest activities.

Agency: R Region: KE
Licence Number: 1516/0183

Biological Sciences

NW Hudson Bay and Southampton Island

Paul Dye
10114, 54Th PL.N.E.
Everett,
Washington
U.S.A.
98205

Mr. Dye determined the diet and nestling needs of various waterfowl. He then investigated their socialization mechanisms and response to stimuli in captivity at the Northwest Waterfowl facilities.

Agency: R Region: KE
Licence Number: 0614

Biological Sciences

NE corner of Coats Island

Anthony Gaston
Nat. Wildl.Res.Centre
Canadian Wildlife Service
100 Gamelin Boulev.
Hull, Que
K1A 0H3

Mr. Gaston studied the life cycle of thick-billed murres. He banded adults and chicks and attached depth gauges to recorde their diving habits.

Agency: R Region: KE
Licence Number: 1205

Biological Sciences

Southampton Island

Doug Heard
Ren. Res.
GNWT
Box 1320
Yellowknife,NT
X1A 2L9

Mr. Heard sampled 25 caribou cow carcasses. He also observed live caribou behaviour and used aerial observation to investigate caribou ecology.

Agency: R Region: KE
Licence Number: N/A

Biological Sciences

Clark and Thelon Rivers

Thomas Laurion
Zoological Museum
University of Wisconsin
10 Field Station Road
Lander, Wisconsin, U.S.A.
82520

Mr. Laurion collected skeletal remains of large mammals and birds.

Agency: R Region: KE
Licence Number: 1207

Biological Sciences

Eskimo Point

Frank Mallory
Department of Biology
Laurentian University
Ramsey Lake Road
Sudbury, Ontario
P3E 2C6

Dr. Mallory trapped and performed a necropsy (post-mortem examination) on various rodents. His goal was to describe and analyse changes in the animals' body structures.

Agency: R Region: KE
Licence Number: 1542/0613

Biological Sciences

WMZ: HI-3, HI-4, J1 Keewatin District

Robert Mulders
Renewable Resources
GNWT
Keewatin Region
Eskimo Point, NT
X0C 0E0

Mr. Mulders studied 42 harvested muskox to gain knowledge of their age structure and to record additional data.

Agency: R
Licence Number: N/A

Region: KE

Biological Sciences

Kaminuriak Caribou Range

Robert Mulders
Renewable Resources
GNWT
Keewatin Region
Eskimo Point, NWT
X0C 0E0

Mr. Mulders conducted ground classification studies to gather data for caribou herd management.

Agency: R
Licence Number: N/A

Region: KE

Biological Sciences

Eskimo Point, Keewatin Region

Robert Mulders
Renewable Resources
GNWT
Keewatin Region
Eskimo Point, NWT
XOC OEO

Mr. Mulders obtained baseline data on the populations of tundra wolves through food and genetic analysis.

Agency: R
Licence Number: N/A

Region: KE

Biological Sciences

Wardens Grove on Thelon River

Chris Norment
Dyche Hall
University of Kansas
Lawrence, Kansas
U.S.A.
66045

Mr. Norment explored the reproductive ecology and breeding conditions of female Harris Sparrows. In his study, he also determined time budgets, levels of predation and genetic variability.

Agency: R
Licence Number: 1483

Region: KE

Biological Sciences

Eskimo Pt. Native Bay, Chesterfield In.

Eldon Pace
Box 286
Shubenacadie,
Nova Scotia
BON 2HO

Mr. Pace studied the possibilities of increasing the breeding success rate of captive waterfowl by collecting eggs and some young.

Agency: R
Licence Number: 0617

Region: KE

Biological Sciences

Pangnirtung and Rankin Inlet

Gilles Seutin
Dept. of Biology
Queen's University
Kingston,
Ontario
K7L 3N6

Mr. Seutin explored the genetic distinctiveness of the Common and Hoary redpoll finches.

Agency: R
Licence Number: 1539/0610

Region: KE

Biological Sciences

Rankin Inlet and Eskimo Point

Mark Simpson
Dept. of Biology
York University
4700 Keele Street
North York, Ontario
M3J 1P3

Mr. Simpson determined the mating systems, resource distribution and social behaviour of arctic ground squirrels. He marked his subjects using Miss Clairol hair dye.

Agency: R Region: KE
Licence Number: 1528/0605

Biological Sciences

Artillary Lake to Thelon Sanctuary

Gord Stenhouse
Ducks Unlimited
Box 2641
Yellowknife,
Northwest Territories
XIA 2P9

Mr. Stenhouse identified important spring staging habitat areas for waterfowl in the East Arm of Great Slave Lake. To accomplish this, he conducted an aerial survey of the region.

Agency: R Region: KE
Licence Number: 1531

Biological Sciences

Victoria & Southampton Islands. NW Hudson Bay

Walter Sturgeon
RFD #1, James Farm - Lee
Durham,
New Hampshire
U.S.A.
03824

Mr. Sturgeon determined the origin of blue Ross' geese. He also examined their growth rate and subclinical (i.e., hard to detect) health problems.

Agency: R Region: KE
Licence Number: 1545/0615

Biological Sciences

Thelon Game Sanctuary

Christopher Norment
Dyche Hall
University of Kansas
Lawrence, Kansas
U.S.A.
66045

Mr. Norment collected the skeletal remains of 3 muskoxen, 1 caribou, and 1 wolf during his summer research program. These skeletal remains were salvaged for the Museum of Natural History at the University of Kansas.

Agency: R Region: KE
Licence Number: 1512

Biological Sciences

Arviat and Maguse River

Stuart Davies
North/South Consultants Inc
2-1475 Chevrier Blvd
Winnipeg, Manitoba
R3T 1Y7

The researcher and his team tagged fish at Arviat to see if they are found in the commercial fishery at Maguse River. By doing this it can be seen if the char in Maguse are of the same population as in Arviat.

Agency: S Region: KE
Licence Number: 9129

Biological Sciences

Chesterfield Inlet

Kirkland A. Baldwin
282 Dubuc Street
Winnipeg, Manitoba
F2H 1EA

The researchers performed field transects to map vegetation and slope. They attempted to measure the population density of lemmings and voles (small rodents). This project was part of an exchange program with Victor Sammurtok School.

Agency: S Region: KE
Licence Number: 9160

Earth Sciences

Thomas W.D. Edwards;
Department of Earth Sciences
Faculty of Science
University of Waterloo
Waterloo, Ontario N2L 3G1

Agency: S Region: KE
Licence Number: 9153

northeast of Yathkyed Lake; south of Ferguson Lake; Kaminak Lake area

Dr. Edwards collected sediment samples from the bottom of a lake to determine what types of contaminants have settled from the air into the water. He also collected water samples from lakes, rivers, and in the ground to learn more about how rain water and melt water move through earth above permafrost.

Health Sciences

Christine Egan
1834 Attawandaron Rd
London, Ontario
N6G 3N1

Agency: S Region: KE
Licence Number: 9098

Coral Harbour

Ms. Egan and her assistant interviewed individuals regarding the frequency and severity of health problems and the frequency with which health care was sought during the period June 1988 and June 1989. She is examining records at the Coral Harbour Health Centre to increase her base of information. She hopes to draw a correlation between health problems and income status as a follow up to her work in 1988.

Social & Biological Sciences

David Alagalak
General Delivery
Eskimo Point,
Northwest Territories
XOC OEO

Agency: R Region: KE
Licence Number: N/A

Rankin Inlet and Eskimo Point

Mr. Alagalak captured 40 live Arctic foxes. He will see if export of these is viable.

Social Sciences

Anne Keenleyside
Department of Anthropology
McMaster University
Hamilton,
Ontario
L8S 4L9

Agency: A Region: KE
Licence Number: 89-665

Arviat

In this study disease in earlier Inuit populations was examined and some clean up and reconstruction of burial sites was done. Three sites were mapped and three individuals were examined for disease. The study is incomplete.

Social Sciences

Margaret Bertulli
Arctic Archaeologist
Prince of Wales
Northern Heritage Centre
Yellowknife, N.W.T.
X1A 2L9

Agency: A Region: KE
Licence Number: 89-663

Arviat and Arviaq

The Prince of Wales Northern Heritage Society in conjunction with the Inuit Cultural Institute surveyed archaeological sites around Arviat and on Sentry Island or Arviaq. Seventeen Thule and Caribou Inuit camping places were identified by tent rings, caches, kayak rests and graves. Remains of a shipwreck and the first HBC post were also explored. Three young people were trained in this project.

Social Sciences

T. Max Friesen
#310, 1540 Summerhill Avenue
Montreal,
Quebec
H3H 1C1

Agency: A Region: KE
Licence Number: 89-664

Baker Lake

Areas around Aberdeen and Skinny Lakes were surveyed for archaeological sites before development in the area takes place. Lucy Scottie, Robert Tookoome and Debbie Webster of Baker Lake participated. Twenty historic Inuit sites were examined. The information was shared in community presentations. Some of the sites near Skinny Lake were of Taltheilei origin, thought to be ancestors of the Athabascan peoples.

Social Sciences

Rankin Inlet

Margaret Bertulli
Arctic Archaeologist
Prince of Wales
Northern Heritage Center
Yellowknife, N.W.T.
X1A 2L9

A brief archaeological survey of rock and gravel borrow areas in the Meliadine Esker was made. This was in preparation for the lengthening of an airstrip which is part of the U. S.-Canadian North Warning System air defence program. Fortunately, only two small, avoidable tent ring sites were located.

Agency: A Region: KE
Licence Number: 89-662

Social Sciences

Marble Island, Quartzite Island in northwest Hudson Bay

Owen Beattie
Department of Anthropology
University of Alberta
Edmonton,
Alberta
T6G 2H4

An archaeologic survey of sites known to be the locations of the ill-fated James Knight expedition of 1719-1721 was done. The original expedition was in search of gold ,copper and the Northwest passage. Two new sites were discovered on Quartzite Island, probably look-out sites from which the forty men hoped to spot rescue ships. Remains of a whaling site and pre- and post-contact Inuit sites were also found.

Agency: A Region: KE
Licence Number: 89-655

Social Sciences

Eskimo Point; Whale Cove

Yvon Csonka
c/o Inuit Cultural Institute
Eskimo Point, NWT
X0C 0E0

Yvon Csonka continued with work begun in 1988 by documenting the history of the Ahiarmiut people of the southern Keewatin through interviews with residents of Eskimo Point and Whale Cove. Additional research was done using library and archival material at the Inuit Cultural Institute.

Agency: S Region: KE
Licence Number: 9003

Social Sciences

Sanikiluaq

Gerry Haskel
Dept. of Sociology & Anthropology
University of Windsor
Windsor, Ontario
N9B 3P4

Ms. Haskell examined the nature of the cultural programmes which are designed to increase the traditional Inuit culture in the curriculum at the Sanikiluaq School. She wishes to examine the nature of the curriculum guidelines and identify the type of skills and information communicated in the classroom. Then she will determine the extent to which these are related to the situation of the local community.

Agency: S Region: KE
Licence Number: 9040

Social Sciences

Keewatin Region

Dr. Robert A. Rundstrom
Geography Program
Department of Public Affairs
George Mason University
Fairfax, Virginia, USA
22030

Dr. Rundstrom and his team interviewed people in some Keewatin communities to record the oral history of the original names given to their communities. They are also training northern assistants to continue this work throughout the Keewatin.

Agency: S Region: KE
Licence Number: 9045

KITIKMEOT REGION

Biological Sciences

Central Kitikmeot Region

Robert Bromley
Renewable Resources
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Mr. Bromley tried to identify the breed and moulting habitats of geese, swans, and ducks. Through an aerial survey, he determined the number of geese and swans in the area.

Agency: R
Licence Number: 1534

Region: KI

Biological Sciences

Victoria Island and Kent Peninsula

Robert Bromley
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Mr. Bromley located nest sites, followed breeding success rates and observed bird behavior.

Agency: R
Licence Number: N/A

Region: KI

Biological Sciences

Coppermine

Ray Case
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
X1A 2L9

Mr. Case estimated the population size of barren-ground grizzly bears in relation to harvesting and reproduction parameters.

Agency: R
Licence Number: N/A

Region: KI

Biological Sciences

Hope Bay

Richard Cotter
Department of Zoology
University of Alberta
Edmonton,
Alberta
T5R 5X5

Mr. Cotter studied the behaviour and reproductive biology of ptarmigan using radio transmitters.

Agency: R
Licence Number: 1520

Region: KI

Biological Sciences

Victoria Island

Anne Gunn
Ren. Res.
GNWT
Kitikmeot Region
Coppermine Region
X0E 0E0

Ms. Gunn monitored the condition and health of caribou by studying 45 harvested cows & calves. She also monitored seasonal movements of the caribou and the condition and health of satellite-collared cows.

Agency: R
Licence Number: N/A

Region: KI

Biological Sciences

Anne Gunn
Ren. Res.
GNWT
Coppermine, NT
X0E 0E0

Agency: R
Licence Number: N/A

Region: KI

Northwest Victoria Island

Ms. Gunn established population sizes and monitored cohort survival and the adult sex ratio of muskox.

Biological Sciences

Anne Gunn
Ren. Res.
GNWT
Kitikmeot Region
Coppermine, NT
X0E 0E0

Agency: R
Licence Number: N/A

Region: KI

Coppermine area

Ms. Gunn monitored the seasonal movement of radio-collared muskox and the survival of their calves.

Biological Sciences

Anne Gunn
Ren. Res.
GNWT
Kitikmeot Region
Coppermine, NWT
X0E 0E0

Agency: R
Licence Number: N/A

Region: KI

Queen Maud Gulf area

Ms. Gunn described feeding habits & behaviour of 3 species of muskox in relation to each other.

Biological Sciences

Anne Gunn
Ren. Res.
GNWT
Kitikmeot Region
Coppermine, NT
X0E 0E0

Agency: R
Licence Number: N/A

Region: KI

Southeast Victoria Island

Ms. Gunn described the feeding habits & behaviour of muskox in relation to other Arctic species.

Biological Sciences

Anne Gunn
Ren. Res.
GNWT
Kitikmeot Region
Coppermine, NT
X0E 0E0

Agency: R
Licence Number: N/A

Region: KI

Pelly Bay area

Ms. Gunn monitored the distribution of calving caribou.

Biological Sciences

Anne Gunn
Ren. Res.
GNWT
Kitikmeot Region
Coppermine, NT
X0E 0E0

Agency: R
Licence Number: N/A

Region: KI

Southeast Victoria Island

Ms. Gunn monitored the condition and health of muskox by studying 120 harvested animals.

Biological Sciences

Bathurst Caribou Range

Doug Heard
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
X1A 2L9

Mr. Heard did aerial counts and collected wolf & caribou samples for assessment.

Agency: R
Licence Number: N/A

Region: KI

Biological Sciences

Queen Maud Gulf: Jenny Lind Island

Richard Kerbes
Canadian Wildlife Service
115 Parameter Road
Saskatoon, Sask

S7M 0X4

Mr. Kerbes studied population size and distribution and harvest & survival rates of snow geese.

Agency: R
Licence Number: N/A

Region: KI

Biological Sciences

Coppermine Area

Chris Shank
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Mr. Shank determined the number of bird territories occupied by Gyrfalcons. He used snowmobiles and helicopters to complete his studies. He tracked the birds he had banded and took blood samples from nestlings while determining the number of young being produced.

Agency: R
Licence Number: 1518

Region: KI

Biological Sciences

Hope Bay

Chris Shank
Ren. Res.
GNWT
Box 1320
Yellowknife, NT
XIA 2L9

Mr. Shank measured the population size of the major prey species (i.e., ptarmigan and rodents) of the Gyrfalcon. Travelling by snowmobile and helicopter he determined the age and sex structures of these species.

Agency: R
Licence Number: 1519

Region: KI

Biological Sciences

NW of Cambridge Bay: Augustus Hills and Wellington Bay

Albert Karvonen
Karvonen Films Limited
373 Wyecliff
22560 Wye Road
Sherwood Park, Alberta
T8A 4T6

Mr. Karvonen shot a film and recorded wildlife sounds in their natural habitat. He focused upon the muskoxen but also included arctic foxes, wolves, caribou, ravens and polar bears in his studies.

Agency: R
Licence Number: 1490

Region: KI

Biological Sciences

Cambridge Bay area

Anne Gunn
Renewable Resources
Government of the NWT
Coppermine,
NWT
X0E 0E0

Interviews were conducted to collect local knowledge regarding ptarmigan and the harvest of ptarmigan. An experimental harvest was conducted and the carcasses were examined for disease and feeding habits.

Agency: S
Licence Number: 9146

Region: KI

Biological & Social Sciences

Anne Gunn
Regional Biologist
Renewable Resources
GNWT
Coppermine, NT
X0E 0E0

Agency: R Region: KI
Licence Number: 1461

Gjoa Haven Area

Ms. Gunn conducted humane trapping tests on the arctic fox. She compared the injuries & effectiveness of different trap types.

Biological & Social Sciences

Tom Faess
East Wind Arctic Tours & Outfitters
Box 2728
Yellowknife, NWT
X1A 2R1

Agency: S Region: KI
Licence Number: 9115

Thelon River Basin, NWT

Mr. Faess guided his group into the Thelon Game Sanctuary to study, observe and examine the wildlife, flora and archaeology of the area. This project will hopefully renew interest in the Thelon Game Sanctuary for scientific research, and be mutually beneficial to the scientific community and the private sector guide and outfitting business.

Earth Sciences

Robert H. Rainbird
Department of Geology
University of Western Ontario
London, Ontario
N6A 5B7

Agency: S Region: KI
Licence Number: 9112

Kuujjua River - Minto Inlet, western Victoria Island, NWT

Mr. Rainbird returned to areas examined during his 1986/87 investigations and completed the data collection phase of his Ph.D thesis. He collected sediment samples to gain a better understanding of the geological processes and their relative timing.

Earth Sciences

Daniel E. Kerr
Department of Geology
University of Alberta
1-26 Earth Sciences Building
Edmonton, AB
T6G 2E3

Agency: S Region: KI
Licence Number: 9137

Bathurst Inlet and Kent Peninsula

Mr. Kerr continued to investigate the nature of the late Quaternary geologic period's stratigraphic record of marine and glaciomarine deposits (exposed by rivers along the mainland coast of the N.W.T.).

Earth Sciences

Dr. Don Francis
Dept. of Geological Sciences
McGill University
3450 University Street
Montreal, Quebec
H3A 2A7

Agency: S Region: KI
Licence Number: 9143

Marceau Lake, Speer's Lake, NWT

Dr. Francis mapped the distribution of rock types and took rock samples for geochemical analysis. He examined the chemical variations he observed across the margin of the intrusion into the host country rock. This information helped him understand the processes responsible for the development and localization of the mineralization of Platinum Group Elements (PGE's).

Earth Sciences

Quentin Gall
Department of Earth Sciences
Carleton University
Ottawa,
Ontario
K1S 5B6

Agency: S Region: KI
Licence Number: 9141

West and north of Dubawnt Lake; east of Great Bear Lake.

Mr. Gall studied ancient weathering horizons (soil deposits) and the mineralization associated with them.

Health Sciences

Arviat, Gjoa Haven, Pangnirtung, Coppermine

Pat Grygier
549 Queen Street East
Box 686
St. Mary's, Ontario
NOM 2V0

Ms. Grygier is writing a book on the tuberculosis (TB) epidemic that hit the Inuit population from the 1940's to 1960's. She gathered material from ex-TB patients through an Inuktitut-language questionnaire and a school writing project.

Agency: S Region: KI
Licence Number: 9161

Social Sciences

Pelly Bay

Margaret Bertulli
Arctic Archaeologist
Pr. of Wa. Northern Heritage Centre
Government of the N.W.T.
Yellowknife, N.W.T.
X1A 2L9

Ms. Bertulli examined an archaeological site at the edge of the Hamlet of Pelly Bay where a new housing sub-division is planned. The work revealed several tent rings, caches and a box grave, likely all that is left of a Thule culture camp of a few hundred years ago. The site was marked so that the construction crews can easily avoid it.

Agency: A Region: KI
Licence Number: 89-661

Social Sciences

Pelly Bay area

Henry Stewart
6-2-5 Asahi-ga-oka
Hino City,
Tokyo 191
Japan

Henry Stewart and a team from Mejiro Ga-kuen Women's College worked with residents of Pelly Bay to map and gather information about features associated with long used char fishing and caribou hunting spots 35km northwest of Pelly Bay. The researchers did not remove any artifacts but collected a wealth of information about hunting and fishing practices from the elders.

Agency: A Region: KI
Licence Number: 89-654

Social Sciences

Cambridge Bay area

Anne Gunn
Ren. Res.
GNWT
Coppermine, NT
X0E 0E0

Ms. Gunn compiled local knowlegde on living off local wildlife harvests & evaluated harvesting procedures used in the area.

Agency: R Region: KI
Licence Number: N/A

Social Sciences

Holman Island

Linda K. Park
Department of Anthropology
University of Western Ontario
London, Ontario
N6A 5C2

Ms. Park interviewed a number of artists and other people in the community of Holman Island to find out how the Inuit feel about their art, what it says about their society, and how they feel it is being received in the South.

Agency: S Region: KI
Licence Number: 9043

Social Sciences

Holman Island

Dr. Richard Condon
Department of Anthropology
University of Arkansas
417 Holtz Hall
Fayetteville, Arkansas U.S.A. 72701

Dr. Condon continued his photohistorical and oral history documentation in the Holman Island region by collecting photographs of the area and encouraging the elders to talk about social change.

Agency: S Region: KI
Licence Number: 9085

Social Sciences

Douglas Harvey
Park Planner, Northern Parks
Canadian Parks Service
Environment Canada
Ottawa, Ontario
K1A 0H3

Agency: S Region: KI
Licence Number: 9100

Melville Hills-Bluenose Lake, Coppermine area

Mr. Harvey and his assistant investigated the Melville Hills- Bluenose Lake area near Coppermine to see if it might be suitable for use as a park.

INDEX OF RESEARCHERS

A SAMPLE OF NORTHERN RESEARCH TITLES HOUSED AT S.I.N.T.

Northwest Territories Researchers: A listing of N.W.T. residents who conduct original research. Science Institute of the N.W.T., 1988

Health Research North of 60 degrees Workshop Final Report, Government of the N.W.T. Department of Health and the Science Institute of the Northwest Territories, 1989

Summer 1990 Planned Field Work, Geological Survey of Canada, Program Coordination & Planning Division Summer 1990

The Arctic Science and Technology Information System listings and abstracts, Arctic Institute of North America, The University of Calgary

Energy, Mines and Resources: Research Agreements Program in Natural, Physical & Social Sciences & Engineering Progress Summary, Arctic Research Needs in Civil Engineering University of Alaska, Fairbanks 1985

A Report from the Native Groups of the N.W.T. on Their Situation with Research, Science Institute of the N.W.T. and Association of Canadian Universities in Northern Studies, 1987

Education, Research, Information Systems and the North, Editor: W. Peter Adams Association of Canadian Universities for Northern Studies, 1987

Annotated Bibliographies of Publications based on Research Supported by the Northern Scientific Training Program, 1987 Scientific Affairs Division Circumpolar & Scientific Affairs Directorate

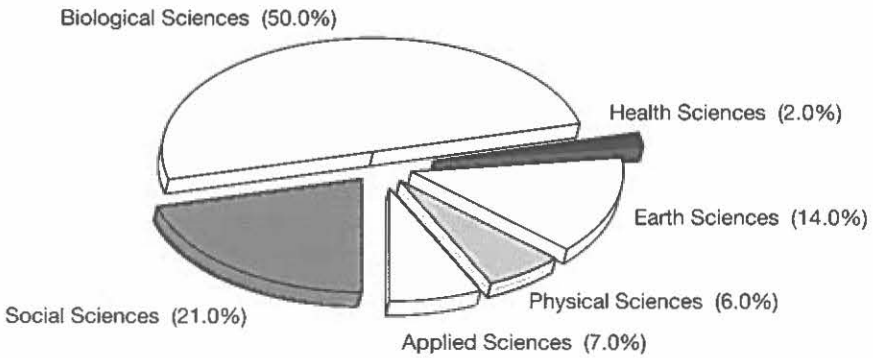
SOME STATISTICS

NUMBERS OF STUDIES :

Total number of projects in Summary of Research 1989 285
Total number of projects in Summary of Research 1988 173
Percentage increase 65%

CATEGORIES :

Social Sciences 21%
Biological Sciences 50%
Health Sciences 2%
Earth Sciences 14%
Physical Sciences 6%
Applied Sciences 7%



Percentages by AGENCIES Licensing in the N.W.T. :

Science Institute 54%
Prince of Wales Northern Heritage Centre 7%
Department of Renewable Resources, GNWT .. 39%

RESEARCHERS :

Number of Researchers 226
Researchers resident in the north 12%
Studies associated with universities 45%

N.W.T. ADMINISTRATIVE REGIONS

SCIENCE INSTITUTE OF THE NORTHWEST TERRITORIES
4th Floor, Scotia Centre
P.O. Box 1617
Yellowknife, Northwest Territories, Canada X1A 2P2
Phone: (403) 873-7592, iNet: SCINT.NWT
Fax: (403) 873-0227

Printed on Recycled Paper

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ᖃᐅᔨᓴᖃᖅ 1989

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ᖃᐅᔨᓴᖃᖅ 1989

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ᖃᓄ ᐱᕈᒃᑎᑕᐅᖃᑦᑕᖅᐸᑦ ᑕᒪᒃᑯᐊ ᐸᐅᓐᖓᐃᑦ ᐊᒻᒪᓗ ᐱᕈᒃᓯᒪᔪᑦ ᓂᕆᔭᐅᓲ ᑕᒫᓂ
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ᐃᒪᕐᒥᐅᑕᐃᑦ ᑎᖕᒥᐊᑦ ᐃᑎᔪᒧᑦ ᐊᖅᑲᕈᓐᓇᖅᐹᑦ?

ᖃᓄᐃᓕᐅᕐᓗᑎᑦ ᐊᐃᕖᑦ ᓂᓪᓕᖃᑦᑕᐅᑎᓲᖑᕙᑦ?

ᖃᓄ ᐱᐅᓯᕚᓪᓕᖅᑎᑦᑐᓐᓇᕐᓴᕐᑦᑎᒍᑦ ᐃᓕᓐᓂᐊᕈᑎᑦᓴᕆᔭᕗᑦ ᑕᒫᓂ ᓄᓇᑦᓯᐊᕐᒥ?

ᐃᒪᐃᑦᑑᕕᑦ ᐱᕚᓪᓕᐊᔪᓂᑦ ᑎᑎᖅᑎ ᐃᓱᒪᓕᐅᖅᑕᐅᔪᓂᑦ ᕿᓂᖅᓯᒪᓪᓗᑎᑦ
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ᐊᑐᖅᑕᐅᓯᒪᓂᐊᖅᑐᓂᑦ ᐊᑐᐊᒐᕐᓂᑦ ᓴᓇᕙᓪᓕᐊᓪᓗᑎᑦ?

ᒐᑭᒪᓕᕆᔩ ᑐᓴᐅᒪᓯᒪᔭᐃᓐᓇᕆᓇᓯᐊᖅᑕᑎᑦ ᐃᑉ ᕕᑦ ᐊᕕᒃᑐᖅᓯᒪᓂᖓᓂᑦ
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Photo: Culture & Communications, GNWT

Photo: Culture & Communications, GNWT

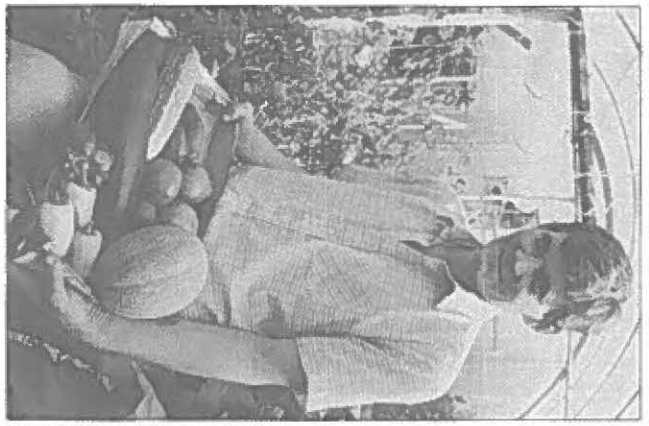

Photo: Tessa MacIntosh, GNWT

Photo: Tessa MacIntosh, GNWT

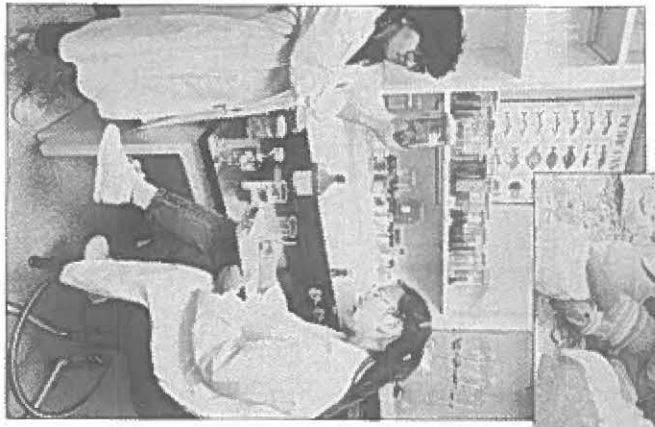

Photo: Bob Wilson, GNWT

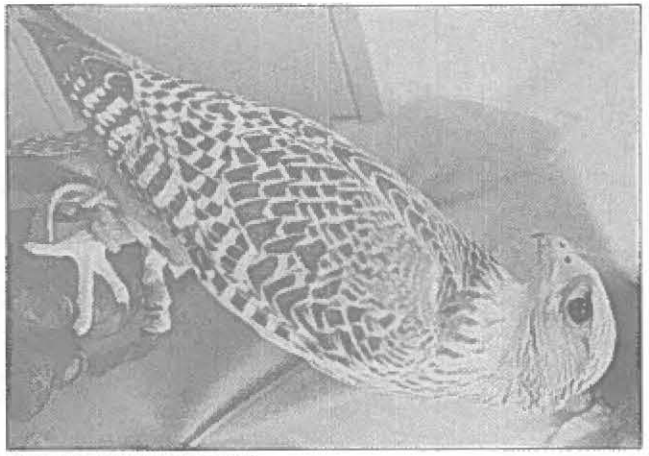

Photo: Tessa MacIntosh, GNWT

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1. ᓯᕗᓪᓕᖅᐸᕐᒥ ᐅᕐᖃᐅᓯᖏᓐᓂᑦ

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5. ᐊᑎᖏᓂᖅᓂᑦ ᐊᑐᕐᓱᑎᑦ ᓄᓕᓄᐃᕐᓇᑕᐅᔨᑦᑐ ᕿᐅᐳᓴᕐᓇᕐᔪᑦ

6. ᐃᓕᖏᑦ ᑕᐃᔪᖏᑦ ᕿᐅᐳᓴᕐᓇᑕᐅᓕᐅᕐᓇᒪᔨᑦᑐ ᓄᓂᔭᐅᔨᖅᓄᓘᓂᑦ
ᓄᓇᕐᔨᐊᕐᓕ ᔨᓄᑐᐃᖅᓄᓘᓂᑦᑐ ᕿᐅᐳᓴᕐᓇᕐᑎᓕᓴᐅᔪᖅᓂᑦ.

ᓯᕗᓪᓕᖅᐹᕐᒥ ᐅᖃᐅᓯᒃᓴᑦ

ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᕐᓂᕐᒥᒃ ᐃᓕᓐᓂᐊᖅᓯᒪᓕᕐᓂᐊᕈᑦᑕ ᐊᒻᒪᓗ ᐊᑑᑎᒋᔭᓐᓇᖅᑕᖓᓂᒃ ᐃᓕᓴᖅᓯᓂᐊᕈᑦᑕ ᑐᑭᓯᖃᓇᐊᖃᕙᔭᖅᐳᒍᑦ ᖃᓄ ᑐᑭᖃᕐᒪᐱᖏᑦ ᑕᒪᓐᓇ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᕐᓂᖅ. ᓄᓇᑦᓯᐊᕐᒥ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓂᑦ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᕐᓂᖅ ᐃᒻᒪᓐᓇ ᑐᑭᖃᖅᑎᑕᐅᓯᒪᖕᒪᑦ: ᖃᐅᔨᒪᔭᖃᕐᓂᖅ ᐊᒻᒪᓗ ᑐᑭᓯᐅᒪᓂᖅ ᓯᓚᕐᔪᐊᓕᒫᕐᒥᑦᑐᓂᑦ ᓱᓇᑐᐃᓐᓇᐃᑦ ᕿᒥᕈᐊᖃᑦᑕᕐᓗᑎᒍᑦ, ᖃᐅᔨᓴᖃᑦᑕᕐᓗᑎᒍᑦ ᐊᒻᒪᓗ ᐊᐱᖅᓱᖃᑦᑕᕐᓗᑕᓗ.

ᓄᓇᑦᓯᐊᕐᒥ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓂᑦ ᐊᑐᖅᑕᐅᑦᑎᐊᖅᓯᒪᓂᐊᕐᑯᔭᐅᔪᑦ ᑕᐃᒃᑯᐊ ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᐊᑐᖅᑕᐅᓯᒪᔪᓐᓇᖅᑐᑦ ᐊᑑᑎᖃᓚᖑᖃᑦᑕᖅᑐᑦ - ᐃᓄᐃᑦ. ᐱᑦ ᐹᓐᓕᖅᑎᒃᑯᑎᒍᑦ ᑐᓴᐅᒪᖃᑦᑕᐅᑎᓂᖅ, ᐃᑲᔪᖃᑦᑕᐅᑎᓂᖅ ᐊᒻᒪᓗ ᐊᕿᒃᓱᖅᓯᒪᖃᑎᒌᖕᓂᖅ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓂᑦ ᑕᒪᓂ ᓄᓇᑦᓯᐊᕐᒥ ᐊᑑᑎᖃᕐᓂᖅᓴᐅᓂᐊᕐᒪᑕ ᐊᑐᕋᓱᐊᕐᓗᑎᒍᑦ ᖃᐅᔨᓯᒪᔭᖕᒥᑦ, ᐅᑭᐅᖅᑕᖅᑐᑉ ᐊᕙᑖᓂᑦᑐᑦ ᒥᒃᓵᓂᑦ ᐃᓕᓐᓂᐊᖅᑎᑦᑎᒐᓱᐊᓕᖅᑎᓪᓗᑕ. ᑭᒃᑯᑐᐃᓐᓇᐃᑦ ᐊᔾᔨᒌᖕᒋᑦᑐᓂᑦ ᐊᑐᖃᑦᑕᕐᒪᑕ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᑕᒪᕐᒥᒃ ᐊᑑᑎᖃᖅᑐᐃᓐᓇᐅᓪᓗᑎᑦ. ᖃᐅᔨᒪᓕᖃᑦᑕᕐᑕ ᑕᐅᑐᖃᑦᑕᓚᐅᕐᓗᑕ, ᖃᐅᔨᓴᖃᑦᑕᓚᐅᕐᓗᑕ ᐊᒻᒪᓗ ᐊᐱᖅᓱᖃᑦᑕᓚᐅᕐᓗᑕ. ᓇᓗᓇᐃᖅᓯᒪᔭᓐᓇᕐᒥᔪᕗᑦ ᖃᐅᔨᒪᔭᐅᓯᒪᔭᑦ ᑕᒪᓂ ᓄᓇᑦᓯᐊᕐᒥ ᐊᑑᑎᖃᑦᑎᐊᕈᓐᓇᖅᑐᖅ, ᐃᓕᖅᑯᓯᑐᖃᕆᓂᕐᒥᒃ ᖃᐅᔨᒪᔭᐅᓯᒪᔪᑦ. ᑕᐃᒃᑯᐊ ᐅᑭᐅᖅᑕᖅᑐᒥᐅᑕᐅᓯᒪᓕᖅᑐᑦ ᐊᕐᕌᒍᓄᑦ ᐊᒥᓱᓄᑦ ᐊᓈᓇᑯᖕᒥᓪᓗ, ᐃᑦᑐᑯᑎᖕᒥᓪᓗ. ᒫᓇ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓂᑦ ᐊᑐᖅᑕᐅᓯᒪᖃᑦᑕᓕᖅᑐᓂᑦ ᐊᑐᓚᐅᖅᓯᒪᖕᒥᒃᑯᐊᖅᑎᓪᓗᒋᑦ, ᖃᐅᔨᓯᒪᔪᖕᒥᑦ ᐊᒃᓯᐊᓗ ᐊᑑᑎᖃᕈᓐᓇᕐᒥᖕᒪᑕ ᑕᒪᓂ ᐅᑭᐅᖅᑕᖅᑐᒥ ᖃᐅᔨᓴᕐᓂᕐᒧᑦ. ᑭᓇᑐᐃᓐᓇᑦᑎᐊᕐᒧᑦ ᖃᐅᔨᔭᐅᓯᒪᔪᑦ ᐊᑑᑎᖃᖅᑐᐃᓐᓇᐅᔪᓐᓇᕐᒪᑕ.

ᐱᖃᑕᐅᓯᒪᑐᐃᓐᓇᕆᐊᖃᓚᐅᖅᑐᓯ 1989-ᖑᑎᓪᓗᒍᒃ ᖃᐅᔨᓴᖅᑎᐅᓪᓗᓯ ᐅᑉ ᕙᓗᓐᓂᑦ ᖃᐅᔨᓴᖅᑎᒃᑯᓐᓂᑦ ᐃᑲᔪᖅᑎᐅᓪᓗᓯ. ᐃᓚᖏᑦ ᐆᒥᖓ ᐅᖃᓕᒪᖅᑐᑦ ᐃᑲᔪᑐᐃᓐᓇᕆᐊᖃᓚᐅᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑎᒃᑯ ᓇᓗᓕᖅᑎᓪᓗᒋᑦ ᐃᓕᔅᓯᓐᓄᑦ ᐅᖃᐅᔾᔭᐅᑎᓪᓗᒋᑦ ᐃᒻᒪᑲᓪᓚᒃ ᖃᐅᔨᔭᐅᓚᐅᖅᓯᒪᔪᓂᑦ ᐅᑉ ᕙᓗᓐᓂᑦ ᐊᖑᓇᓱᐊᖅᑎᐅᑎᓪᓗᑎᑦ ᖃᐅᔨᓯᒪᓕᖅᑕᓐᓂᑦ. ᐃᓚᖏᑦ ᐱᖃᑕᐅᑐᐃᓐᓇᕆᐊᖃᓚᐅᖅᓯᒪᔪᑦ ᐃᓄᖕᓂᑦ ᐊᐱᖅᓱᖅᑎᓪᓗᒋᑦ. ᐃᓘᓐᓇᓯ ᑐᓴᕈᒪᔪᖅᓴᐅᕗᓯ ᖃᓄᐃᑦᑑᒪᖕᒪᑦ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᔪᑦ ᓄᓇᓯᓐᓂᑦ.

ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᐃᑲᔪᖃᑦᑕᐅᑎᓯᒪᓂᖅ ᐱᑦ ᐹᓐᓕᖅᓯᒪᔭᓐᓇᕐᒥᖕᒪᑦ. ᐅᑭᐅᖅᑕᖅᑐᒥ ᖃᐅᔨᓴᖅᑐᑦ ᖃᐅᔨᓯᒪᔭᖏᑦ ᑭᒃᑯᐃᓐᓇᓄᑦ ᑕᑯᔭᐅᓯᒪᒋᐊᖃᕋᓱᒋᔭᐅᔪᑦ, ᐱᓗᐊᖅᑐᒥ ᐅᑭᐅᖅᑕᖅᑐᒥ. ᑕᐃᒪᐃᓕᐅᖃᑦᑕᖅᑎᓪᓗᒋᑦ ᐅᑭᐅᖅᑕᖅᑐᒥᐅᑕᐃᑦ ᖃᐅᔨᒪᓂᖅᓴᐅᓕᖃᑦᑕᖅᑐᑦ, ᐱᖃᑕᐅᓯᒪᓂᖅᓴᐅᓕᖃᑦᑕᖅᑐᑦ ᐊᒻᒪᓗ ᐱᕈᖅᐸᓪᓕᐊᖃᑕᐅᓕᖃᑦᑕᖅᑐᑦ ᑕᐃᒃᑯᐊ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯ ᐱᕈᖅᐸᓪᓕᐊᖏᓐᓇᖅᑎᓪᓗᒋᑦ. ᐃᓱᒪᒋᔭᖃᕋᓗᐊᖅᐳᑎᖃᐃ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᒋᐊᖃᕋᓱᒋᔭᓐᓂᑦ ᑭᓯᐊᓂᓕ ᐃᓄᑑᓪᓗᑎᑦ ᑲᒪᒋᓯᒪᔪᐊᓇᔾᔭᕋᓱᒋᖕᒋᓐᓇᕕᐅᒃ. ᐱᖃᑕᐅᓯᒪᔪᐊᓇᖅᓯᕗᑎᑦ.

ᐅᕙᓂᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᔪᓂᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᑦ ᓄᓇᑦᓯᐊᕐᒥ 1989-ᖑᑎᓪᓗᒍᒃ. ᑕᒪᐃᓐᓂᑦ ᐅᖃᖅᓯᒪᔪᖃᖅᑐᑦ ᑭᓯᒥ ᖃᐅᔨᓴᓚᐅᕐᒪᖔᑦ, ᓇᒥ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᕐᒪᖔᑦ, ᑭᓇᐅᓚᐅᕐᒪᖔᑦ ᖃᐅᔨᓴᖃᑕᐅᓚᐅᖅᑐᓂᑦ ᓯᕗᓕᐅᖅᑎᒋᔭᐅᓚᐅᖅᑐᖅ ᐊᒻᒪᓗ ᓇᓐᓕᐊᖕᓄᑦ ᑎᒥᖁᑎᒋᔭᐅᔪᑦ ᓄᓇᑦᓯᐊᕐᒥᑦᑐᒍᑦ ᐱᔪᓐᓇᐅᑎᖃᖅᑎᑕᐅᓚᐅᕐᒪᖔᑦ ᑕᒪᓐᓇ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓂᐊᕐᓂᖓᓄᑦ. ᖃᐅᔨᓴᖅᑏᑦ ᐅᑯᐊᖑᔪᓐᓇᖅᑐᑦ; ᒫᕙᒪᒃᑯᓐᓂᑦ ᐃᖃᓇᐃᔭᖅᑐᑦ, ᓇᖕᒥᓂᖃᖅᑐᑦ ᐅᖃᐅᔾᔨᐃᔩᑦ, ᐃᓕᓐᓂᐊᖅᑏᑦ, ᐃᓕᓴᐃᔩᑦ ᐊᒻᒪᓗ ᑭᒃᑯᑐᐃᓐᓇᐃᓪᓗ. ᑕᐃᒃᑯᐊ ᖃᐅᔨᓴᖅᑏᑦ ᐅᕙᓂ ᐅᓂᑲᓕᐅᖅᑕᐅᓯᒪᔪᒥᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᑦ ᑲᓇᑕᓕᒫᕐᒥᖔᖅᓯᒪᔪᑦ. ᐃᓚᖏ ᐊᒥᐊᓕᑲᒥᖔᖅᓯᒪᔪᑦ ᐊᒻᒪᓗ ᐃᓚᖏᓪᓗ ᑕᓇᐅᑉ ᐊᑭᐊᓂᖔᖅᓯᒪᖕᒥᔪᑦ. ᐃᓚᖏᓪᓗ ᖃᐅᔨᓴᖅᑎᐅᓚᐅᖅᑐᑦ ᐅᑭᐅᖅᑕᖅᑐᒥᐅᑕᐅᕗᑦ.

ᖃᐅᔨᓴᖅᑎᓄᑦ ᐊᑐᖅᑕᐅᓚᐅᖅᑐᑦ ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᐊᔾᔨᒌᖕᒋᑐᑎᐅᓚᐅᕐᒪᑕ ᐊᒻᒪᓗ ᓄᓇᓕᖕᓂᖔᖅᓯᒪᔪᓂᓪᓗ ᐊᑐᐃᓐᓇᖃᑦᑕᓚᐅᕐᒥᐊᑦ ᓯᕐᓗ ᓄᓇᓕᓐᓂᑦ ᐊᐅᓪᓚᓯᑦᑎᑦᑎᔾᔪᑎᓂᑦ ᐊᒻᒪᓗ ᖃᐅᔨᓴᕐᕕᓪᓗ. ᖃᐅᔨᓴᖅᑎᓪᓗᒋᑦ ᑐᓴᒐᒃᓴᓂᑦ ᐊᒻᒪᓗ ᓱᓇᑐᐃᓐᓇᕐᓂᓪᓗ ᖃᐅᔨᓴᖅᑕᐅᒪᓂᐊᕐᓂᖏᑦ ᓄᐊᑦᓯᓚᐅᕐᔭᓗᐊᖅᑎᓪᓗᒋᑦ ᐅᑭᐅᖅᑕᖅᑐᒥ, ᖃᐅᔨᓴᖅᑕᐅᒃᑲᓐᓂᖃᑦᑕᖅᑐᑦ ᖃᐅᔨᓴᕐᕕᖕᓂᑦ ᐊᒻᒪᓗ ᐅᓂᑲᓕᐅᖅᓯᒪᖃᑦᑕᖅᑐᑦ ᖃᐅᔨᓴᖅᓯᒪᔭᖏᑦ ᒥᒃᓵᓂᑦ ᖃᐅᔨᓴᖅᑎᐅᑉ ᐱᓕᕆᑦ ᐱᖕᒪᓂᑦ ᖃᓄᓇᑦ ᓄᓇᖕᒪᓂᑦ. ᑕᒪᒃᑯᐊ ᖃᐅᔨᓯᒪᔪᑦ ᐅᑎᖅᑎᑕᐅᒋᐊᖃᓐᓇᕐᒪᒃ ᑕᒪᐅᖕ ᐅᑭᐅᖅᑕᖅᑐᕐᒧᑦ.

ᑕᒪᕐᒥᒃ ᖃᐅᔨᓴᕐᓂᐊᖅᑐᑦ ᑕᒪᓂ ᓄᓇᑦᓯᐊᕐᒥ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᑦ ᐱᖁᔭᖓᓂᑦ ᐅᖃᖅᓯᒪᖕᒪᑦ ᐱᔪᓐᓇᐅᑎᖃᕐᓂᐊᖃᖅᑐᑦ. ᑕᐃᒪᐃᒋᐊᖃᖅᑎᓪᓗᒋᑦ ᐅᖅᑲᖅᑎᕐᓯᐅᓯᒪᐊᖓᔾᔪᒪᑕ ᓄᓇᓕᖕᒥᐅᑕᐃᑦ ᖃᐅᔨᓴᖅᓯᒪᔭᖏᓐᓂᑦ, ᖃᐅᔨᓴᖅᑎᓂᑦ ᐊᒻᒪᓗ ᓄᓇᑦᓯᐊᕐᒧᑦ ᐊᑐᖅᑕᐅᓯᒪᓂᐊᖅᑐᓂᑦ ᐊᕿᒃᓯᔪᖑᔪᓂᑦ ᐃᒃᐱᒍᓱᓕᕐᓂᐊᖅᑐᓂᑦ. ᐊᓯᖏᓪᓗ ᖃᐅᔨᓴᖅᑏᑦ ᑐᓴᖅᑎᑕᐅᒃᑲᓐᓂᖅᓯᒪᖃᑦᑕᖅᑐᑦ ᐊᒻᒪᓗ ᑭᒃᑯᑐᐃᓐᓇᐃᓐᓄ ᖃᓄᐃᓕᐅᓕᕐᒪᖔᑦ ᐊᒻᒪᓗ ᖃᐅᔫᓐᒪᖔᑦ ᖃᐅᔨᓴᔭᐅᓯᒪᓕᖅᑐᑦ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓂᑦ. ᐃᓚᖏᓪᓗᖃᐃ ᑕᐃᒪᑦᓴᐃᓇᑲᓴᒃ ᖃᐅᔨᓴᕐᓂᑯᒍᓂᒃ ᖃᐅᔨᓯᒪᓚᐅᖅᑕᖕᒥᑦ ᐊᑐᖅᑕᐅᑎᑦᑐᓐᓇᖅᓴᕐᒥᖕᒪᕆᑦ ᐊᔾᔨᑐᐃᓐᓇᖓᓂᑦ ᖃᐅᔨᓴᖅᓯᒪᓕᕐᔭᖅᑯᖏᓗᒋᑦ. ᐃᓚᖏᓪᓗᖃᐃ ᓄᓇᖅᑲᖅᓯᒪᔪᑦ ᐅᑭᐅᖅᑕᖅᑐᒥᐅᑕᐃᑦ ᐊᒃᓯᐊᓗ ᑐᓴᖅᑎᑕᐅᔪᒪᒃᑲᑦᑕᕐᒪᑕ ᖃᓄᐃᓕᐅᕐᒪᖔᑦ ᑕᒪᒃᑯᐊ ᑎᑭᓯᒪᑲᐃᓐᓇᖃᑦᑕᖅᑐᑦ ᖃᐅᔨᓴᖅᑎᒃᑯᑦ ᐊᒻᒪᓗ ᑭᓯᒥ ᖃᐅᔨᓴᖅᓯᒪᖕᒪᖔᑕᓗ.

ᑕᒪᓂ ᐅᑭᐅᖅᑕᖅᑐᒥ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᔪᑦ ᐅᓂᑲᓕᐅᖅᑕᐅᓯᒪᓂᕐᒥᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᔪᒃᑯᑦ ᐅᓂᑲᓕᐅᖅᑕᐅᓯᒪᔪᖃᑦᑕᖅᑐᑦ. ᖃᐅᔨᓴᖅᑏᑦ ᐅᓂᑲᓕᐅᖅᑕᖅᓯᐊᖅᓯᒪᔪᓂᑦ ᑎᑎᕋᐃᓐᓇᕆᔾᔪᒪᓕᑦ ᑕᑯᔭᐅᓯᒪᓂᐊᕐᒍᓂᑦ ᖃᐅᔨᓴᖅᐸᓪᓕᐊᑎᓪᓗᓂ. ᓯᕗᓪᓕᖅᐸᕐᒥᑦ ᐱᓕᕆᓯᒪᓂᐊᕐᑕᐅᑎᓐᓂᐊᕐᒥᑦ ᓇᓗᓇᐃᖅᓯᒪᓕᕐᓴᐊᖅᑕᕐᒥᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᔪᒃᑯᑦ ᐱᔪᓐᓇᐅᑎᖃᕈᓐᓇᕐᒪᑕ. ᐱᔭᕇᕐᓗᒋᑦ ᑐᓴᐅᑎᓯᒪᓂᐊᕐᑐᒥ ᐱᓕᕆᓚᕆᓐᓂᕐᒥᑦ ᒥᒃᓵᓂᑦ. ᐅᖃᓕᒪᒐᕐᔪᐊᖅᑎᑕᐅᓯᒪᓕᕐᑐᑦ ᐅᓂᑲᓕᐅᖅᑕᐅᓯᒪᔪᑦ ᐊᒻᒪᓗ

ᐅᖃᓕᒫᒐᒃᓴᖑᖅᑎᑕᐅᔪᓪᓗ ᐅᕙᑦᑎᓐᓄᑦ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓄᑦ ᐊᐅᓪᓚᖅᑎᑕᐅᖃᑦᑕᕐᒪᑕ. ᑕᐃᒃᑯᐊ ᖃᐅᔨᓴᖅᑎᐅᓚᐅᖅᑐᑦ ᐅᖃᐅᔾᔭᐅᓚᐅᖅᑐᑦ ᐱᐅᓂᖅᓴᐅᒐᔭᕐᒪᑦ ᖃᐅᔨᓯᒪᔪᖕᒥᑦ ᓄᓇᓕᖕᒥ ᖃᐅᔨᓴᕐᕕᐅᓚᐅᖅᑐᒥᑦ ᓴᖅᑭᑎᑕᐅᒃᐸᑕ, ᑐᓴᖅᑎᑕᐅᓯᒪᓕᕐᓂᐊᖁᓗᒋᑦ. ᓄᓇᓕᖕᒥᐅᑕᐃᑦ ᑐᓴᖅᑎᑕᐅᓇᓱᐊᓕᖅᑎᓐᓄᑦ ᖃᐅᔨᓴᖅᑎᒃᑯᓐᓂᑦ ᖃᐅᔨᔭᐅᓯᒪᔪᑦ ᖃᓄᐃᓘᓚᐅᕐᒪᖔᑕ ᐃᑲᔪᖅᑕᐅᓯᒪᔪᓐᓇᖅᑐᑦ ᑕᐃᒃᑯᐊ ᖃᐅᔨᓴᖅᑎᒃᑯᑦ ᐅᕙᑦᑎᓐᓄᑦ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓂᑦ.

ᐅᕙᓂ 1989-ᒧᑦ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᓯᒪᔪᑦ ᓇᐃᓪᓕᒋᐊᒃᑲᓐᓂᖅᓯᒪᔪᒧᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᓂᖏᓐᓂᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᑐᐃᓐᓇᖅᑐᑦ ᑕᐃᒃᑯᐊ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓚᐅᖅᑐᑦ ᐱᔪᓐᓇᐅᑎᖃᖅᑎᑕᐅᓯᒪᑎᓪᓗᒋᑦ ᔫᓗᓇᐃᕝ-ᒥ ᐃᑦᑕᕐᓂᓴᓂᑦ ᑕᑯᔭᒐᒃᓴᖃᕐᕕᖓᓄᑦ (A), ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᒃᑯᖏᓐᓄᑦ ᐆᒪᔪᓕᕆᔨᒃᑯᑦ ᐱᓕᕆᕝ ᕕᖓᓄᑦ (R) ᐊᒻᒪᓗ ᓄᓇᑦᓯᐊᕐᒥ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓄᑦ (S). ᐃᓚᖏᑦ ᐆᒪᔪᓂᑦ ᖃᐅᔨᓴᖅᑎᐅᔪᑦ ᐆᒪᔪᓕᕆᔨᒃᑯᓐᓂᖔᖅᓯᒪᔪᑦ ᐊᑕᐅᓯᐅᖏᑦᑐᒥᒃ ᖃᐅᔨᓴᖅᓯᒪᖃᑦᑕᕐᒪᑕ ᐊᑕᐅᓯᕐᒥ ᐱᔪᓐᓇᐅᑎᖃᖅᑎᑕᐅᓯᒪᒐᓗᐊᖅᑎᓪᓗᒋᑦ. ᐊᓯᖏᓪᓗ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᖃᑦᑕᖅᑐᑦ ᐱᓕᕆᐊᕆᔭᐅᓯᒪᖃᑦᑕᖅᑐᑦ ᑲᒪᒋᔭᐅᓯᒪᑎᓪᓗᒋᑦ ᒐᕙᒪᑐᖃᒃᑯᑦ ᐱᓕᕆᕝ ᕕᖏᓐᓄᑦ ᓲᕐᓗ ᐃᒪᕐᒥᐅᑕᓕᕆᔨᒃᑯ ᐱᓕᕆᕝ ᕕᖓᓄᑦ ᐊᒻᒪᓗ ᑲᓇᑕᒥ ᐅᔭᕋᕐᓂᑦ ᖃᐅᔨᓴᖅᑐᓕᕆᔨᒃᑯᓐᓄᑦ. ᐊᓯᖏᓪᓗᑦᑕᐅᖅ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᔪᑦ ᐊᐅᓚᑕᐅᓯᒪᖃᑦᑕᖅᑐᑦ ᑲᑐᔾᔨᖃᑎᒌᒃᓯᒪᔪᓄᑦ ᓲᕐᓗ ᐃᓄᕕᐊᓗᐃᑦ ᓄᓇᓕᕆᔨᒃᑯ ᐊᕿᒃᓱᐃᔨᒃᑯᖏᓐᓄᑦ. ᑐᑭᓯᔪᒃᓴᐅᕗᑎᑦ ᑕᐅᖅᓰᖃᑦᑕᐅᑎᓂᖅ ᖃᐅᔨᔭᐅᓯᒪᔪᓂᑦ ᐊᔪᕐᓇᖅᓯᔪᓐᓇᕐᒪᑦ. ᖃᐅᔨᔭᐅᓯᒪᔪᓂᑦ ᑕᐅᖅᓰᖃᑦᑕᐅᑎᓂᕐᒧᑦ ᐊᑐᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᐊᖅᑐᒥᒃ ᐊᕿᒃᑕᐅᓯᒪᔪᖃᕆᐊᖃᓪᓚᕆᓕᕐᑦᑕ.

ᑕᐃᒪᐃᒃᑲᒥᒃ ᓄᓇᑦᓯᐊᕐᒥ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓂᑦ ᐅᖃᐅᔾᔭᐅᓯᒪᓕᖅᑐᑦ ᑕᒪᕐᒥᒃ ᖃᐅᔨᓴᖅᑎᐅᔪᑦ ᐊᒻᒪᓗ ᖃᐅᔨᓴᖅᑎᐅᑐᐃᓐᓇᕆᐊᖃᖅᑐᑦ, ᒐᕙᒪᒃᑯᓐᓂᖔᖅᓯᒪᔪᑦ, ᐅᖃᐅᔾᔪᐃᔾᔨᒃᑯᑦ ᐱᓕᕆᕝ ᕕᖏᓐᓂᖔᖅᓯᒪᔪᑦ, ᓯᓚᑦᑐᓴᕐᕕᖕᓂᖔᖅᓯᒪᔪᑦ ᐊᒻᒪᓗ ᓇᖕᒥᓂᖃᖅᑐᓂᖔᖅᓯᒪᔪᑦ ᐅᖃᖃᑎᒌᖃᑦᑕᖁᔭᐅᓪᓗᑎᑦ. ᐃᓱᒪᓕᐅᖅᑕᓯ ᐊᑐᖅᑕᐅᔪᓐᓇᕋᔭᕐᒪᑕ ᐊᑑᑎᖃᖅᑐᒧᑦ ᐊᒻᒪᓗ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᑦ ᑕᒫᓂ ᓄᓇᑦᓯᐊᕐᒥ ᐱᕈᖅᐸᓪᓕᐊᓂᐊᕐᒪᑕ. ᒪᒃᑯᒃᑐᓄᑦ ᐅᑭᐅᖅᑕᖅᑐᕐᒥᐅᑕᐅᔪᓄᑦ ᐊᑐᖅᑕᐅᔪᓐᓇᕋᔭᕐᒪᑕ ᖃᐅᔨᓯᒪᔭᓯ ᐊᒻᒪᓗ ᑕᐃᒪᐃᑦᑐᓐᓇᖅᓯᓕᖅᑎᓪᓗᒋᑦ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᕐᓂᖅ ᐊᒻᒪᓗ ᖃᐅᔨᒪᔭᕐᒥᑦ ᐱᕈᓪᓕᐊᓂᖃᓕᕋᔭᕐᒪᑕ.

ᓇᐃᓪᓕᒋᐊᖅᓯᒪᔪᒧᑦ ᐅᓂᑳᓕᐅᖅᑕᐅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓕᖅᑐᑦ 1989-ᒧᑦ ᐊᑐᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᖓᑦ

ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᑦ ᐊᕕᒃᑐᖅᓯᒪᔪᑦ ᓄᓇᐅᑉ ᐊᕕᒃᑐᖅᓯᒪᓂᖏᓐᓂᑦ ᐊᑐᕐᓗᑎᑦ: ᕿᑭᖅᑖᓗᖕᒥ (BA), ᑭᕙᓪᓕᕐᒥ (KE), ᐃᓄᕕᒃ (IN), ᕗᐊᑦ ᓯᒥᔅ (FS).

ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᓪᓗ ᖃᓄᐃᑑᓂᖏᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᖕᒥᔪᑦ ᐊᑐᖅᑕᐅᓯᒪᑎᓪᓗᒋᑦ ᖃᖓᓂᐊᓗᒃ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓂᑦ ᐋᕐᑭᒃᑕᐅᓚᐅᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᔪᑦ ᖃᓄᐃᑑᓂᖏᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᓂᐊᕐᓂᖏᓐᓄᑦ: ᐃᓄᓯᓕᕆᓂᕐᒥᒃ ᖃᐅᔨᓴᕐᓂᖅ, ᐆᒪᔪᐃᑦ ᐃᓕᕐᑯᓯᖏᓐᓂᒃ ᖃᐅᔨᓴᕐᓂᖅ, ᐋᓐᓂᐊᖃᕐᓇᖏᑦᑐᓕᕆᓂᕐᒥᒃ ᖃᐅᔨᓴᕐᓂᖅ, ᓄᓇᓕᕆᓂᕐᒥᒃ ᖃᐅᔨᓴᕐᓂᖅ, ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᕐᓂᖅ, ᐊᒻᒪᓗ ᐊᑐᖅᑕᐅᓯᒪᔪᓐᓇᖅᑐᓂᑦ ᖃᐅᔨᓴᕐᓂᖅ

ᐃᓄᓯᓕᕆᓂᕐᒥᒃ ᖃᐅᔨᓴᕐᓂᖅ: ᖃᐅᔨᓴᖅᑕᐅᑎᓪᓗᒋᑦ ᐃᓄᐃᑦ ᐃᓄᓯᒋᕙᓚᐅᖅᑕᖏᑦ ᐃᒻᒪᑲᓪᓚᐅᑎᓪᓗᒍᒃ, ᑭᖑᓂᑦᑎᓐᓂᑦ ᐊᒻᒪᓗ ᒫᓐᓇᐅᓕᖅᑐᓪᓗ; ᓱᕐᓗ ᐃᑦᑕᕐᓂᓴᓕᕆᓂᖅ, ᒪᑭᒪᔾᔪᑎᑦᓴᓕᕆᓂᖅ, ᐃᓄᐃᑦ ᐃᒻᒪᒃᑲᓪᓚᒃ ᐃᓄᓚᐅᖅᓯᒪᔪᑦ ᐊᒻᒪᓗ ᑭᖑᓂᕗᑦ ᖃᐅᔨᓴᖅᑕᐅᑎᓪᓗᒋᑦ.

ᐆᒪᔪᐃᑦ ᐃᓕᕐᑯᓯᖏᓐᓂᒃ ᖃᐅᔨᓴᕐᓂᖅ: ᖃᐅᔨᓴᖅᑕᐅᑎᓪᓗᒋᑦ ᓂᕐᔪᑏᑦ ᐊᒻᒪᓗ ᐱᕈᖅᓯᒪᔪᓪᓗ ᐊᒻᒪᓗ ᐃᓚᓐᓂᒃᑯ ᐃᓄᐃᓪᓗ ᐆᒪᔪᐃᑦ ᐃᓕᕐᑯᓯᖏᓐᓂᑦ ᖃᐅᔨᓴᕐᓂᕋᖅᑕᐅᕙᒃᑐᑦ.

ᐋᓐᓂᐊᖃᕐᓇᖏᑦᑐᓕᕆᓂᕐᒥᒃ ᖃᐅᔨᓴᕐᓂᖅ: ᐃᓄᓯᓕᕆᓂᕐᒥᒃ ᐅᕝᕙᓗᓐᓂᑦ ᐆᒪᔪᐃᑦ ᐃᓕᕐᑯᓯᖏᓐᓂᑦ ᖃᐅᔨᓴᖅᑎᓪᓗᒋᑦ ᖃᐅᔨᓴᖅᑕᐅᖃᓯᐅᑎᓯᒪᓕᖅᑎᓪᓗᒋᑦ ᑎᒥᖕᓄᑦ ᐃᓱᒪᒃᑯᓪᓗᓐᓂᑦ ᐋᓐᓂᐊᖃᕐᓇᖏᑦᑐᓕᕆᓂᖅ, ᐋᓐᓂᐊᖃᕐᓇᖏᑦᑐᓕᕆᓂᕐᒥᒃ ᖃᐅᔨᓴᕐᓂᖅ ᐊᑐᖅᑕᐅᓯᒪᒐᔭᕐᒪᑦ.

ᓄᓇᓕᕆᓂᕐᒥᒃ ᖃᐅᔨᓴᕐᓂᖅ: ᐊᕙᑎᕗᑦ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓕᖅᑎᓪᓗᒍᒃ; ᓱᕐᓗ ᐅᔭᕋᓕᕆᓂᕐᒥᒃ, ᓄᓇᐅᑉ ᖃᓄᐃᑑᓂᖓᓂᒃ, ᓄᓇᕐᔪᐊᑉ ᐃᓗᐊ, ᓯᓚᐅᑉ ᖃᓄᐃᑑᓂᖓᓂᒃ, ᐅᕝᕙᓗᓐᓂᑦ ᐃᒪᓕᕆᓂᕐᒥᒃ ᖃᐅᔨᓴᖅᑎᓪᓗᒋᑦ.

ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᕐᓂᖅ: ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᐊᑐᖅᑕᐅᓯᒪᑎᓪᓗᒋᑦ ᓱᓇᑐᐃᓐᓇᑦ ᓱᓇᒥ ᓴᓇᓯᒪᓂᖏᓐᓂᑦ ᖃᐅᔨᓴᕐᓂᖅ, ᓱᓇᑐᐃᓐᓇᑦ ᐊᕐᑭᒃᓱᖅᓯᒪᓂᖏᓐᓂᑦ ᖃᐅᔨᓴᕐᓂᖅ ᐅᕝᕙᓗᓐᓂᑦ ᐅᓪᓗᕆᐊᓂᑦ ᖃᐅᔨᓴᕐᓂᖅ ᑭᓱᒥᒃᑭᐊ ᖃᐅᔨᓴᕋᓱᐊᖅᑎᓪᓗᒋᑦ ᖃᓄᐃᒻᒪᑦ ᑕᐃᒪᓕᖓᖕᒪᖓᑦ.

ᐊᑐᖅᑕᐅᓯᒪᔪᓐᓇᖅᑐᓂᑦ ᖃᐅᔨᓴᕐᓂᖅ: ᓴᓇᔪᓕᕆᓂᕐᒧᑦ ᖃᐅᔨᓴᖅᑕᐅᔪᑦ ᐊᒻᒪᓗ ᑐᑭᓯᒃᑲᓐᓂᕋᓱᐊᕐᓂᕐᒧᑦ ᖃᐅᔨᓴᖅᑕᐅᔪᑦ ᐱᔭᕆᖅᑕᐅᓯᒪᓕᖅᑎᓪᓗᒋᑦ ᖃᐅᔨᓯᒪᓂᐊᖅᑐᖏᑦ ᑭᒃᑯᓕᒫᓄᑦ ᐊᑐᖅᑕᐅᓯᒪᒃᑲᐅᑎᔪᓐᓇᕐᓂᐊᖅᑐᑦ ᐊᑐᖅᑕᐅᓯᒪᔪᓐᓇᖅᑐᓂᑦ ᖃᐅᔨᓴᕐᓂᕋᖅᑕᐅᔪᑦ.

ᐃᖅᑲᐅᒪᓂᐊᖅᐸᓯ, ᐱᓗᐊᖅᑐᒥᒃ ᐅᖓᓯᒃᑐᒨᖓᔪᓂᑦ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᔪᓂᑦ, ᐊᔾᔨᒌᖏᑦᑐᓂᑦ ᖃᐅᔨᓴᖅᓯᒪᔪᓐᓇᕐᒪᑕ ᑕᐃᒪᐃᒃᑲᒥᒃ ᓇᓗᓇᐃᖅᑕᐅᓇᓱᐊᓕᖅᑎᓪᓗᒍᒃ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓂᖓ ᓇᓂᑎᑕᐅᓯᒪᓂᐊᕐᒪᖓ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᕐᓂᐅᑉ ᐊᕕᒃᑐᖅᓯᒪᓂᖓᓂᑦ ᐊᑕᐅᓯᕐᒥᑐᐊᖅ ᓇᓗᓇᐃᖅᓯᓇᓱᐊᕐᓂᕐᒧᑦ.

ᑐᓴᕆᐊᖅᑲᓐᓂᕈᒪᒍᓯ:

ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓂᑦ ᐊᕐᑭᒋᐊᖅᑕᐅᖏᓐᓇᖅᑐᑦ ᐊᒻᒪᓗ ᓄᑖᖑᖅᑎᑕᐅᖏᓐᓇᖅᑐᑦ ᑐᓴᒐᒃᓴᖏᑦ ᐊᑐᖅᑕᐅᓯᒪᔪᓐᓇᖅᑐᑦ. ᑐᓴᖅᑎᑕᐅᔪᒪᒍᕕᑦ ᐊᕐᕋᒎᔪᒥᑦ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓂᐊᖅᑐᒥᒃ, ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓄᑦ ᐃᑲᔪᖅᑕᐅᓯᒪᔪᓐᓇᖅᑐᒃᓴᐅᕗᑎᑦ. ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓂᓗ ᑎᑎᕋᖅᑕᐅᕙᓪᓕᐊᓕᕐᒪᑦ; ᖃᐅᔨᓴᖅᑕᐅᔪᑦ ᓄᓇᑦᓯᐊᕐᒥ: ᓄᓇᑦᓯᐊᕐᒥ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓂᑦ ᐱᔪᓐᓇᐅᑎᑖᕋᓱᐊᕐᓂᕐᒧᑦ ᐊᑐᖅᑕᐅᓯᒪᒋᐊᖃᖅᑐᑦ. ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯ ᐱᓕᕆᖃᑎᒋᓯᒪᓂᐊᖅᑕᖏᑦ ᑕᐃᒃᑯᐊ ᑲᑎᓕᓵᓚᐅᖅᑐᑦ ᑲᓇᑕᒥ ᐅᑭᐅᖅᑕᖅᑐᓕᕆᓂᕐᒥᒃ ᖃᐅᔨᓴᖅᑐᑦ ᑲᑐᔾᔨ ᖃᑎᒌᒃᑯᖕᒥᑦ.

ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓕᖅᑐᒥ ᑐᓴᖅᑎᑕᐅᔪᒪᒍᕕᑦ, ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓂᑦ ᐅᖃᐅᔾᔭᐅᒐᔭᖅᐳᑎᑦ ᑖᓐᓇ ᖃᐅᔨᓴᖅᑎᐅᓚᐅᖅᑐᖅ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᔪᒥᑦ ᐅᖃᕐᕕᒋᓇᓱᐊᕈᕕᐅᒃ ᐱᐅᓂᖅᓴᐅᒐᔭᖅᐳᖅ. ᐅᖃᖃᑎᒋᒍᕕᐅᒃ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᕐᓂᕐᒥᒃ ᑕᑯᒐᔭᕿᕕᑦ. ᓄᓇᑦᓯᐊᕐᒥ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓂᑦ ᐅᓂᑳᓕᐅᖅᑕᐅᓯᒪᔪᓂᑦ ᓇᐃᓪᓕᒋᐊᒃᑲᓐᓂᖅᑎᑕᐅᓯᒪᔪᓂᑦ ᐱᑎᑕᐅᔪᓐᓇᖅᐳᑎᑦ ᑭᓯᐊᓂᓕ ᑕᐃᒃᑯᐊ ᐅᖃᓕᒫᒐᒃᓴᖑᖅᑎᑕᐅᓚᐅᖅᓯᒪᖏᑦᑐᑦ ᐅᓂᑳᓕᐅᖅᑕᐅᓯᒪᔪᑦ ᐱᔪᓐᓇᕋᔭᖏᑦᑐᓯ ᑎᑎᕋᖅᑎᐅᓚᐅᖅᑐᒧᑦ ᐊᖏᖅᑕᐅᖄᓚᐅᖏᑎᓪᓗᑎᑦ.

ᖃᐅᔨᓴᖅᑕᐅᓯᒪᔪᒧᑦ ᖃᐅᔨᓴᐅᓚᐅᖅᑐᓕᒫᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᐃᓐᓇᐅᖃᑦᑕᖏᒻᒪᑕ ᐅᓂᑳᓕᐅᖅᑕᐅᓯᒪᔪᓂᑦ. ᐊᓯᖏᑦ ᑎᑎᕋᖅᑕᐅᓚᐅᖅᓯᒪᔪᑦ ᑐᓴᒐᒃᓴᖃᖅᑐᑦ ᓱᓇᑐᐃᓐᓇᕐᓂᑦᑐᓂᑦ ᐱᖃᓯᐅᑎᓯᒪᔭᖏᑦ ᐅᑭᐅᖅᑕᖅᑐᕐᒥ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᔪᑦ ᐊᒻᒪᓗ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᒋᐊᖃᖅᑐᓪᓗ ᓇᓗᓇᐃᖅᑐᖅᑕᐅᓯᒪᓂᖏᑦ. ᑕᑯᓗᓯᐅᒃ ᑕᐃᒍᓯᖏᑦ ᐅᕙᓂᑦᑐᑦ ᐅᓂᑳᓕᐅᖅᑕᐅᓯᒪᔪᒥᑦ.

ᐅᕙᓂ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᓂᑦ ᐱᖃᓯᐅᑎᔭᐅᖏᒃᑯᕕᑦ ᖃᐅᔨᓴᓚᐅᖃᓗᐊᖅᑎᓪᓗᓯᑦ ᐅᖃᐅᑎᓯᒪᖃᑦᑕᕐᓂᐊᖅᐸᓯᐅᒃ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᑦ ᖃᐅᔨᓴᒃᑲᓐᓂᕐᓂᐊᕈᓯ ᐱᖃᓯᐅᑎᔭᐅᓯᒪᓕᕐᓂᐊᕐᑯᓪᓗᓯ. ᖁᔭᓐᓇᒦᒃ.

ᖃᓄᐃᓐᓇᖅ ᑐᓴᖅᑎᑕᐅᒃᑲᓐᓂᕈᒪᒍᓯ ᑕᒫᓂ ᓄᓇᑦᓯᐊᕐᒥ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓚᐅᖅᑐᑦ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓕᖅᑐᓪᓗ ᒥᒃᓵᓂᑦ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᓕᕆᔨᒃᑯᓐᓄᑦ ᑎᑎᕋᕈᓐᓇᖅᐳᓯ, ᐅᕗᖓ:

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ᖃᐅᔨᓴᖃᖅᑎᑕᐅᔪᒃᑯᑦ

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