

Science & Community Environmental Knowledge Fund

Ecosystem & Cumulative Impact Management Funding Envelope

Background:

The purpose of the Ecosystem and Cumulative Impact Management envelope of the SCEK Fund is to promote studies that advance understanding and management of the cumulative effects of oil and gas activities on natural systems. It supports projects that focus on:

- Establishing practical, science-based frameworks, approaches and tools for the management of cumulative impacts of oil and gas exploration and development on ecosystems, valued resources and species of Northeast British Columbia
- Integrating these approaches with: social, economic and cultural values; traditional knowledge of local communities and First Nations; and, resource management plans and sustainability strategies established by government agencies.

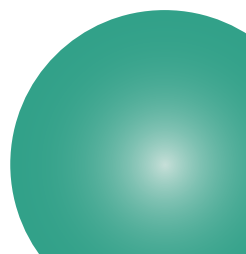
Areas of Interest:

- Cumulative effects indicators and thresholds applicable to valued ecosystem components of Northeast BC
- Ready-to-use tools and methods for identification, mitigation and restoration of cumulative impacts
- Baseline monitoring and studies of long-term change to air, water, soils, vegetation and wildlife
- Integration of science-based approaches to land management with community and/or First Nations' based values and traditional knowledge
- Ecosystem, habitat and wildlife management for the avoidance, mitigation and reduction of the aggregate footprint of the impact of oil and gas activities

The Ecosystem and Cumulative Impact Management envelope of the Fund is one of five funding envelopes within the program. The other four envelopes are Health and Safety, Education and Extension, Engineering and Technology, and Community Environmental Knowledge.

**For more information
on the SCEK Fund,
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Current portfolio of projects

Title	Proponent	SCEK Investment	Status
Data Review, Collection and Analysis for Planning in the Moberly Tract	Firth Hollin Resource Science Corporation	\$12,700.00	Ongoing to September 2005
Boreal Caribou Cumulative Impact Analysis	Salmo Consulting Inc.	\$60,000.00	Anticipated completion January 2005
Low Flow Analysis—Phase 1	Diversified Technical Services	\$18,800.00	Completed January 2004
Water Use Plan and Low Flow Analysis—Phase II	Diversified Technical Services	\$24,000.00	Completed February 2004
Foothills Model Forest Grizzly Bear Research Project	Province of Alberta	\$50,000.00	Anticipated completion March 2005
Snake-Sahtaneh Boreal Caribou Habitat Use and Ecology Study	Slocan Forest Products Ltd	\$50,000.00	Anticipated completion June 2004
Snake-Sahtaneh Boreal Caribou Habitat Use & Ecology Study (continuation)	Slocan Forest Products Ltd	\$100,000.00	Anticipated completion June 2005
Development of a Practical Framework for a Cumulative Effects Assessment and Management for Northeast British Columbia (1)	Ministry of Sustainable Resource Management, Axy's Environmental Consulting Ltd. and Salmo Consulting Inc.	\$196,114.00	Completed March 2003
Development of a Practical Framework for Cumulative Effects Assessment and Management for Northeast British Columbia (2)	Ministry of Sustainable Resource Management and Salmo Consulting Inc.	\$104,474.00	Completed March 2003
Working Towards an Understanding of Cumulative Effects Associated with Oil and Gas Development in the Chinchaga Area of British Columbia and Alberta	Ernst Environmental Services & Pioneer Natural Resources Canada Inc.	\$57,000.00	Anticipated completion fall 2004
Overview Fish and Fish Habitat Inventory	BC Ministry of Water, Land and Air Protection	\$106,875.00	Completed March 2004
Cumulative Impact Management Screener	Axy's Environmental Consulting Ltd. and Salmo Consulting Inc.	\$95,937.00	Anticipated completion December 2004
CBM Baseline Water Monitoring.	Diversified Technical Services	\$3200.00	Anticipated completion May 2004
Boreal Caribou Interim Management Guidelines	Diversified Environmental Services	\$20,000.00	Anticipated completion April 2004
Mountain Goat Habitat Use and Behaviour Study During 3D Seismic Heli-portable Aerial Operations in the OJAY Oil and Gas Development Area.	Veritas Enrgy Services Inc.	\$140,000.00	Completed May 2004
Development and Assessment of Biophysical Thresholds for the Blueberry Area	Axy's Environmental Consulting Ltd.	\$12,000.00	Anticipated completion June 2004



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Data Review, Collection and Analysis for Planning in the Moberly Tract with OGC, MSRM, West Moberly First Nations and Saulneau First Nations

PROPONENT:

Firth Hollin Resource Science Corporation

PROJECT PURPOSE:

To establish a GIS managed database for use in a spatially explicit planning of land use in the Moberly Tract area.

PROJECT SUMMARY:

Good planning requires accurate and comprehensive data. This project generates a GIS-managed database that will help guide “bottom up” planning around resources in the Moberly Tract. It involves a planning partnership between the Oil and Gas Commission, the Ministry of Sustainable Resource Management, and, West Moberly and Sauleau First Nations. The database generated by the project is expected to be a powerful tool for planning at any level and at any time.

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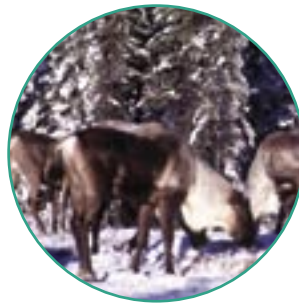
Boreal Caribou Cumulative Impact Analysis

PROPONENT:

Salmo Consulting Inc.

PROJECT PURPOSE:

To develop practical and defensible Boreal caribou management guidelines for Northeast BC and supplement work on disturbance features by fast-tracking analyses of caribou response to linear features for incorporation into management guidelines.



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PROJECT SUMMARY:

A continuation of a study that began in 1999, this wildlife project gathers detailed information on Boreal caribou use and ecology. The information will provide land and resource managers with a sound scientific basis for species management and planning. Specific study objectives include describing caribou movement and habitat use, monitoring caribou populations, and monitoring the movements of wolves and black bear.

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Low Flow Analysis—Phase 1

PROPONENT:

Diversified Technical Services

PROJECT PURPOSE:

To conduct a hydrology analysis and identify areas of concern and watersheds that meet the required instream flow standards. Stream flow measurements will confirm the actual low flow levels in priority watersheds.

PROJECT SUMMARY:

Water is required in the oil and gas industry for exploration, industrial camps, ice roads and hydrostatic testing. But water is not always available from watersheds in sufficient quantity on a year round basis to support this activity. Much of the work is completed during the winter months when flow levels are low in Northeast BC. Conflicting uses for the water include fisheries, instream flows, recreation, First Nations and water licences. This project draws some conclusions around stream flow rates and provides recommendations concerning the development of water resources in Northeast BC.

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Water Use Plan and Low Flow Analysis—Phase II

PROPONENT:

Diversified Technical Services

PROJECT PURPOSE:

To continue the regional hydrology assessment and to initiate a pilot water use plan on the Beaton headwaters. This area was identified as having water shortage problems through *Phase I Low Flow Analysis* and will be used to develop a planning framework for water use to avoid impacts and conflicts.

PROJECT SUMMARY:

The project provides a water use plan for the Upper Beaton River, located approximately 140 kilometres northwest of Fort St. John. The drainage was identified in Phase I of the project as having water shortage problems. It describes the method of obtaining rights to use water for oil and gas activity through the *Water Act* and identifies sites and potential water sources that can be constructed with minimal effort and low environmental impact. The results from this project will be used as a template for future planning efforts in similar basins.

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Foothills Model Forest Grizzly Bear Research Project

PROPONENT:

Province of Alberta, Fish and Wildlife Division, Foothills Model Forest

PROJECT PURPOSE:

To provide resource managers with the necessary knowledge and planning tools to ensure the long-term conservation of grizzly bears.

PROJECT SUMMARY:

This five-year study, partially funded by the SCEK Fund, provides resource managers with the knowledge and planning tools to ensure the long-term conservation of grizzly bears. It provides information related to the cumulative impact management of oil and gas activities in relation to bear habitat, movement and population dynamics. Such information is used by the oil and gas industry for road and pipeline alignment as well as access control.

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Photograph courtesy: Tom Kitchin

Snake-Sahtaneh Boreal Caribou Habitat Use and Ecology Study

PROPONENT:

Slocan Forest Products Ltd

PROJECT PURPOSE:

To address critical caribou knowledge gaps by establishing baseline ecological information on BC Boreal caribou which will then support better assessment of caribou population status and viability, and habitat value.

PROJECT SUMMARY:

Partially funded by the SCEK Fund, this five-year study addresses issues related to the survival of Boreal caribou, which is “blue-listed” in BC and is classified as ‘threatened’ under federal criteria. A broad goal of the project is to study the impact that development activities and landscape change has had on the species in the study area, comprising 465,960 ha of Boreal forest in Northeast BC.

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Development of a Practical Framework for a Cumulative Effects Assessment and Management for Northeast British Columbia (1)

PROPONENT:

Ministry of Sustainable Resource Management, Axys Environmental Consulting Ltd. and Salmo Consulting Inc.

PROJECT PURPOSE:

To develop a practical framework for cumulative effects assessment and management for Northeast BC.

PROJECT SUMMARY:

The project outlines a framework for Northeast BC that would provide an umbrella under which cumulative impacts could be assessed and managed. While the framework focuses on cumulative impacts associated with oil and gas activities and what the Oil and Gas Commission can do to assess and manage these impacts, it also recognizes that cumulative impacts cannot be managed on a sector by sector basis. For this reason, the framework relies heavily on the involvement of all natural resource stakeholders. The framework consists of five major elements: 1) regional assessment, 2) identification of indicators, 3) development of a screening approach for oil and gas applications, 4) impact management, and 5) research and monitoring.

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Development of a Practical Framework for a Cumulative Effects Assessment and Management for Northeast British Columbia (2)

PROPONENT:

Ministry of Sustainable Resource Management and Salmo Consulting Inc.

PROJECT PURPOSE:

To provide a detailed assessment of cumulative effects in two representative areas in Northeast BC.

PROJECT SUMMARY

This continuation of a cumulative effects assessment and management study looks at two case study areas in Northeast BC: the Blueberry area northwest of Fort St. John and the Sukunka area southwest of Fort St. John. Trends defined in the case study areas can be used to develop forecasts of future conditions in Northeast BC and help refine thresholds (science-based standards used to define limits of acceptable change). The case studies showed that cumulative impact indicators were as useful as more complex and costly habitat quality indicators.

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Working Towards an Understanding of Cumulative Effects Associated with Oil and Gas Development in the Chinchaga Area of British Columbia and Alberta

PROPONENT:

Ernst Environmental Services & Pioneer Natural Resources Canada Inc.

PROJECT PURPOSE:

To address knowledge gaps pertaining to cumulative effects on the environment as revealed by wildlife indicators with a focus on forest carnivores and to a lesser extent, woodland caribou.



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PROJECT SUMMARY:

Addressing knowledge gaps related to oil and gas development and cumulative effects in the Chinchaga sweet-gas field is the focus of this wildlife monitoring project. It incorporates both observation and analysis to evaluate the response and level of habituation of an array of species to oil and gas activities and other types of disturbances, such as linear corridors and expansion into formerly remote areas.

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Overview Fish and Fish Habitat Inventory

PROPONENT:

Fish & Wildlife Science and Allocation, BC Ministry of Water, Land and Air Protection

PROJECT PURPOSE:

To deliver a low intensity, systematic description of fish and fish habitat distribution in watersheds for which minimal or no field data currently exists.

PROJECT SUMMARY:

This *Overview Fish and Fish Habitat Inventory* collected baseline information from several watersheds in Northeast BC for which very little data previously existed. Information on fish distribution and critical habitats for spawning, rearing and overwintering was collected as part of the project. This information will be useful for strategic and operational level resource management planning as well as fisheries management.

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Cumulative Impact Management Screener

PROPONENT:

Axys Environmental Consulting Ltd. and Salmo Consulting Inc.

PROJECT PURPOSE:

To develop a screening tool in two parts for the OGC that will enable OGC staff to assess cumulative effects of both individual and general development permit applications.

PROJECT SUMMARY:

The project aims to move through a series of steps culminating in a tested and application-ready cumulative impact management (CIM) screener for both individual project applications and for general development permits. The screener will be a useful tool for the Oil and Gas Commission in reviewing the biophysical cumulative impacts of projects in both categories.

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CBM Baseline Water Monitoring.

PROPONENT:

Diversified Technical Service

PROJECT PURPOSE:

To gather data on the groundwater monitoring sites in the Hudson Hope area during the low flow season, prior to industrial activity.

PROJECT SUMMARY:

This project involves office and field inspections to complete the quarterly monitoring of sites sampled in a related project: *Regional Background Assessment of Groundwater in the Greater Hudson Hope Area*. The sites are sampled throughout the year to monitor the seasonal variation in water quality and quantity.

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Boreal Caribou Interim Management Guidelines

PROPONENT:

Diversified Environmental Services

PROJECT PURPOSE:

To develop interim management guidelines for Boreal caribou based on the data collected to date from the *Snake-Sahtaneh Boreal Caribou Habitat Use & Ecology Study*.

PROJECT SUMMARY:

The project involves the development of interim Boreal caribou habitat management guidelines to help mitigate potential negative effects of oil and gas development on Boreal caribou in Northeast BC. The guidelines will be produced based on the information collected to date from the *Snake-Sahtaneh Boreal Caribou Habitat Use & Ecology Study*, another SCEK-supported project.

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Mountain Goat Habitat Use and Behaviour Study During 3D Seismic Heli-portable Aerial Operations in the OJAY Oil and Gas Development Area.

PROPONENT:

Veritas Energy Services Inc.

PROJECT PURPOSE:

To determine the distribution of mountain goats and mountain goat habitat located near the confluences of the Wapiti River and the Belcourt and Mistanusk Creeks. To evaluate the response of this mountain goat population to aerial activities and to provide management information for oil and gas development.

PROJECT SUMMARY:

The results of this wildlife study will contribute important information to the development of management strategies that will eliminate or reduce unnecessary harm to the ecosystems and wildlife in Northeast BC where oil and gas activities are conducted or proposed. Specific project outcomes include a report that describes the distribution, habitat use and behavioural response to helicopters of canyon-dwelling mountain goats, and a management plan for heliportable geophysical activity in critical mountain goat habitat in Northeast BC.

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Development and Assessment of Biophysical Thresholds for the Blueberry Area

PROPONENT:

Axys Environmental Consulting Ltd.

PROJECT PURPOSE:

To obtain input from the Blueberry River First Nation to develop biophysical indicators and thresholds based on traditional ecological knowledge for use in cumulative impact management.

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