

# Annual Report

Fiscal Year 2016/17



The BC Oil and Gas Research and Innovation Society (BC OGRIS), is a not-for-profit society overseen by the Canadian Association of Petroleum Producers (CAPP), the Explorers and Producers Association of Canada (EPAC) and the BC Oil and Gas Commission (Commission).

### **Vision**

To continuously improve understanding and management of the impacts of oil and gas activities in B.C.

### **Mission**

The BC OGRIS supports practical studies that develop credible and relevant information to address knowledge gaps in the understanding and management of high priority environmental and social matters related to oil and gas exploration and development in B.C. Research findings from funded projects are shared with organizations in the oil and gas industry as well as regulators and government agencies, other stakeholders and First Nations.

### **BC OGRIS Report**

This report documents the operational and financial achievements for the 2016/17 fiscal year (April 1, 2016 to March 31, 2017) along with an overview of plans for the 2017/18 fiscal year.

### **Contact Us**

For further information, please contact the BC OGRIS,  
Suite 300, 398 Harbour Road, Victoria, B.C. V9A 0B7.

[www.bcogris.ca](http://www.bcogris.ca)





## Message from the BC OGRIS Board of Directors

Fiscal year 2016/17 was a challenge for the oil and gas sector—with prices far from stabilizing and creating uncertainty in funding for BC OGRIS. Our research activity remained high as projects started in previous years continued and stakeholder requests to fund new research were satisfied. We continued the shift in our projects to fewer, larger projects and/or in conjunction with research consortiums comprising several organizations that support and coordinate projects covering multiple years.

BC OGRIS activities are broadly divided into two funds—a Caribou Research Fund and an Operating Research Fund. The Caribou Fund continued its programs to collect data and analyze findings to support the development of management options for the B.C. Government's boreal caribou initiative. Over 60 kilometers of boreal caribou habitat were restored in 2016/17 through an innovative landscape level approach while monitoring activities to assess the vegetative and predator-prey response to the restoration will occur in FY 2017/18. The Operating Fund continued several multi-year projects already under way that are closely tied to research aligned with identified B.C. Government policy priorities.

In FY 2017/18, we will continue supporting our research projects under the Caribou and Operating funds. Key themes in our research include continuing to analyze our findings regarding boreal caribou populations and habitat; assessing the impact of restoration on boreal caribou and their predators; researching options to functionally restore boreal caribou habitat in a timely and cost-effective manner; seismicity; and air quality. We will also expand our research into two new areas—monitoring and measuring methane gas emissions and using drone enabled technologies to monitor oil and gas activities. Strategic partnerships with other research organizations will continue to ensure we have the capacity to respond to the information needs and expectations of our stakeholders—including attracting good research, leveraging our investments and avoiding duplication of research activity.

Year-end contributions from the Commission and B.C. Government provided funding for the BC OGRIS to continue its research programs into FY 2017/18. While gratefully received, this type of funding results in unreliable revenue forecasting and makes it difficult to commit to funding projects other than short term projects from proposals received after the contribution amounts are known.

In FY 2016/17, the BC OGRIS Board of Directors formally met four times along with several interim decision making sessions. We prepared for our transition to operating under the new Societies Act—targeting our Annual General Meeting in June 2017. The transition includes updating our Constitution and Bylaws to meet the requirements and expectations of the Act and our members. Next fiscal year will see the Board explore options to establish consistent and stable levels of funding to enable longer term support of research projects. We will continually monitor our investments and administrative activities to reflect our revenue stream and align activities accordingly and prudently take proactive action to realize cost savings and synergies wherever possible—while focusing on high priority research to inform public policy; aid decision making and enhance operating practices for oil and gas activities that are important to the sector and the people of British Columbia.

Geoff Morrison  
Chair, BC OGRIS Board of Directors  
October 2017

## Report on the BC OGRIS (FY 2016/17)

### Introduction

The BC OGRIS is a professional research fund that focuses on researching the environmental and social impacts of upstream oil and gas activities in B.C. Key principles of flexibility, responsiveness and transparent operations help distinguish the BC OGRIS and attract quality research projects that address significant and timely issues and knowledge gaps.

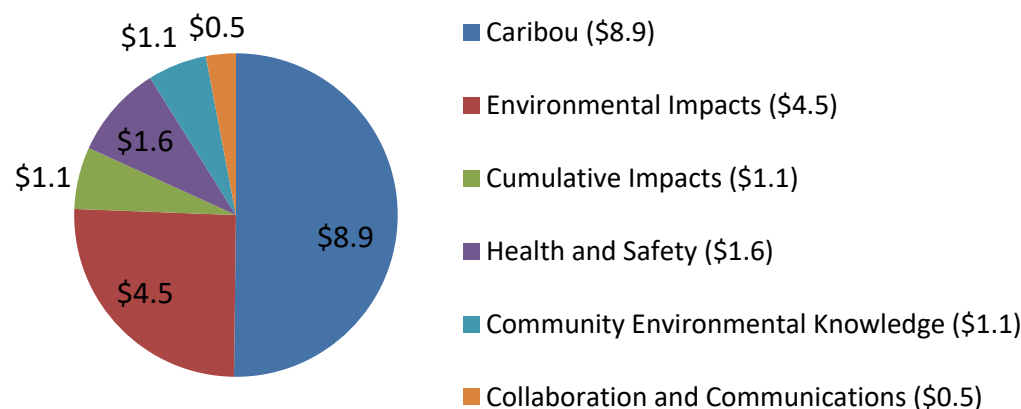
In 2016/17, the BC OGRIS received funding in the form of contributions from its stakeholders. Historically, it has received contributions from upstream oil and gas companies, large and small, through fees and levies administered by the Commission—as part of industry's commitment to responsible development and the Commission's mission to regulate oil and gas activities for the benefit of British Columbians.

The BC OGRIS operates two main funds:

- **Caribou Fund**—focused on boreal caribou research. The Fund is overseen and directed by the MoU Strategic Leadership Team (MSLT) comprising senior representatives of the B.C. Government and industry who recommend projects to the BC OGRIS for funding. The MSLT is supported by a Research and Effectiveness Monitoring Board (REMB) comprising representatives of the scientific committee who assess and monitor boreal caribou projects and their findings.
- **Operating Fund**—comprising five funding envelopes—Health and Safety; Environmental Impacts; Community Environmental Knowledge; Cumulative Impacts Management; and Collaboration and Communication. This fund is overseen and directed by the BC OGRIS Board of Directors who fund projects based on recommendations from our stakeholders. External subject matter experts assist in the assessment and quality assurance of projects and their findings.

The charts below and in the following section summarizes investment since inception in 2000 under the SCEK Fund and BC OGRIS. More information on the BC OGRIS, including the terms of reference and business plan, can be found on the website at: [www.bcogris.ca](http://www.bcogris.ca).

### Investment To-date (Millions)\*



\* Since project expenditures commenced in 2000.

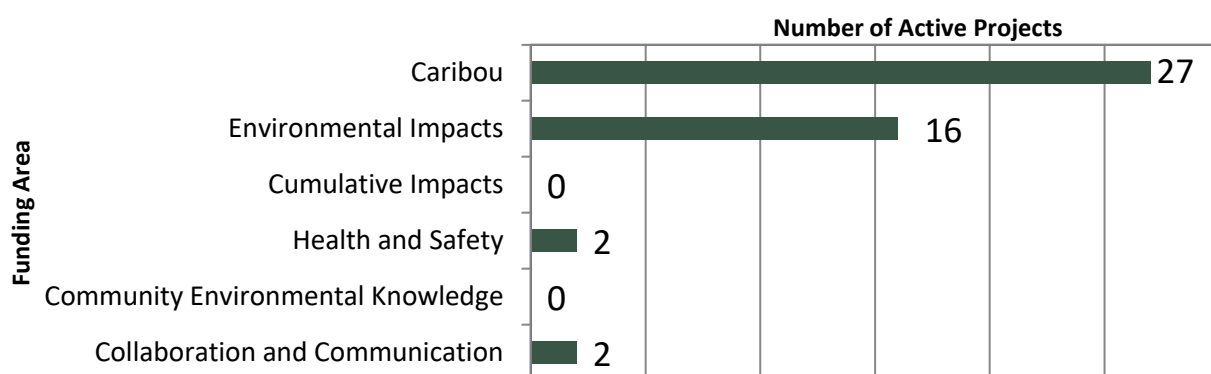
## Accomplishments (FY 2016/17)

### Project and Proposal Activity

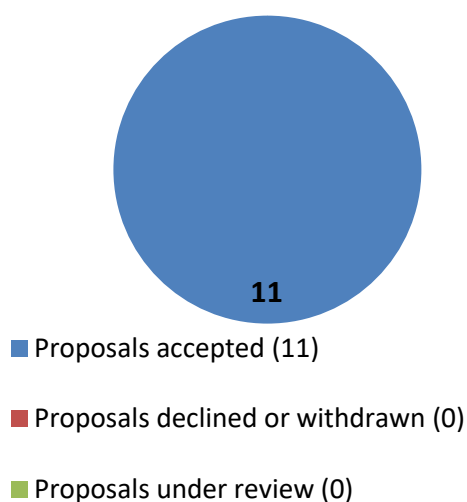
Proposal and project activity for the 2016/17 fiscal year is summarized in the charts below.

Projects accepted for support in the 2016/17 fiscal year were within the funding areas of Caribou, Environmental Impacts, Health and Safety and Collaboration and Communication. In total, 11 new projects were approved for funding while 19 projects were completed.

### Active Projects in 2016/17



### Proposal Activity

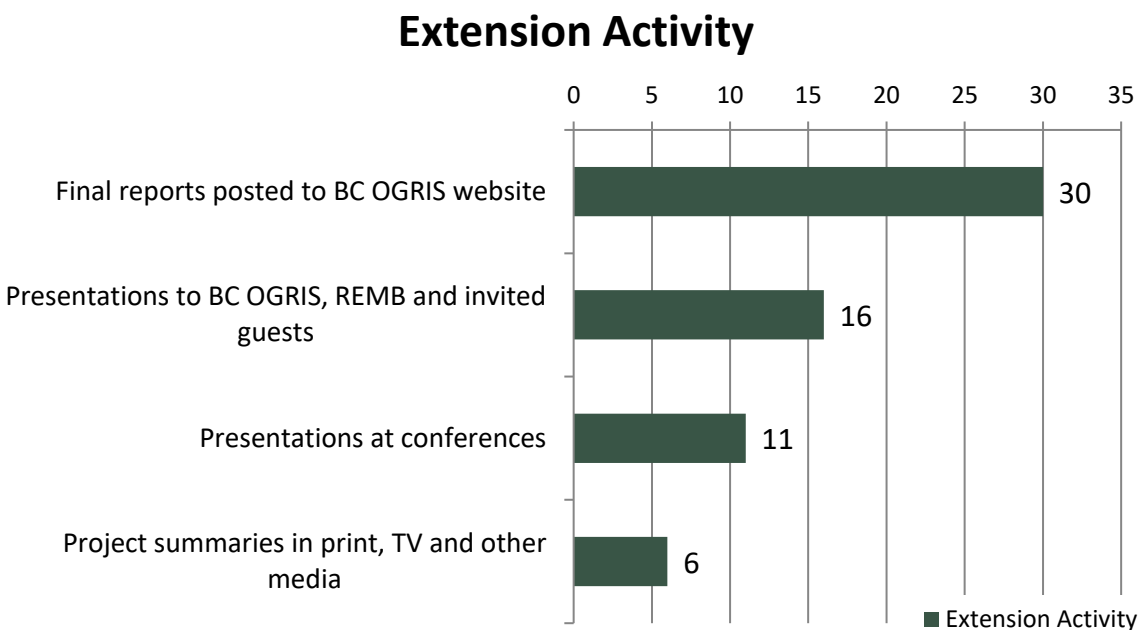


The review and recommendation of projects for funding is divided into Caribou Fund projects and Operating Fund projects. Recommendations to fund caribou related projects were made by the MSLT and REMB as described on page 4. Non-caribou projects were strategic requests from our major stakeholders to support the collection of science-based information to inform emerging public policy discussions and support decision making.

More information on projects and findings within the Caribou Fund can be found in the REMB Annual Report available on the BC OGRIS website at: <http://www.bcogris.ca/boreal-caribou/extension>.

## Extension Activity

Extension activities undertaken this year to disseminate findings and raise awareness about BC OGRIS funded research projects are summarized below.



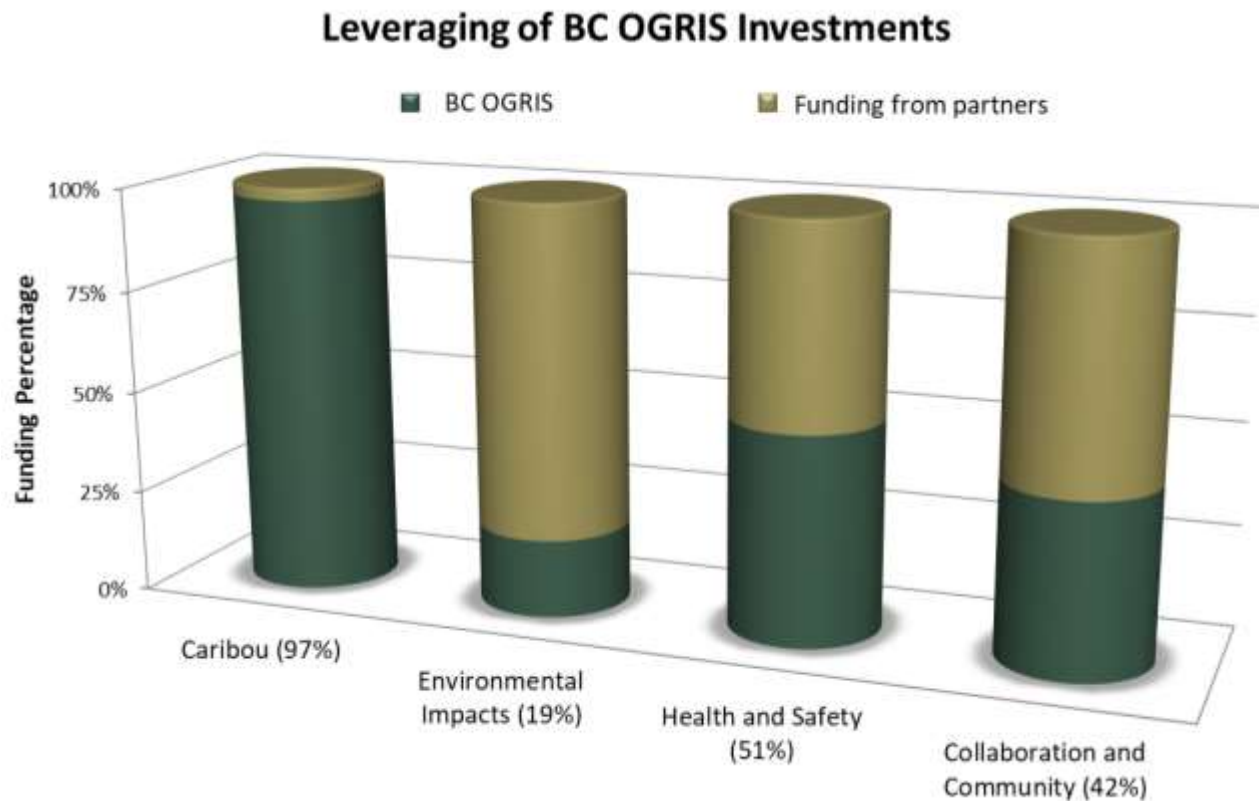
**Final reports**—all projects delivered a report explaining the project and its findings. These reports—prepared by the project team—were posted on the BC OGRIS website for distribution.

**Presentations**—in FY 2016/17, 16 project presentations were made to the BC OGRIS Board of Directors, the REMB under the Caribou Fund and/or invited guests such as representatives from government, regulators and industry. Eleven other presentations were made at environmental themed conferences. The REMB ran two series of webinars, with a combined total of 11 webinars, designed to disseminate the findings from boreal caribou research. The highly attended webinar series explained the project's findings and potential applications and will be continued in FY 2017/18.

**Project summaries in print, TV and other media**—in FY 2016/17, the BC OGRIS and its extension partners published six releases such as newspaper articles and press releases and engaged in social media activities to raise awareness about projects funded by the BC OGRIS in communities where we operate.

## Leveraging our Investments

An increasing number of the BC OGRIS' research projects involve collaboration with external subject matter experts, research and extension partners. This enables the BC OGRIS to leverage its investment in projects as well as share the management and extension activities with other organizations. The resulting extension activities are significantly enhanced through the combined resources of the participating organizations—leading to wider exposure and use of the research findings.



**Leveraging of BC OGRIS funds in research projects undertaken in FY 2016/17**  
(Percentage of project costs provided by BC OGRIS—by Funding Envelope)

The illustration above summarizes the leveraging of BC OGRIS funding in 2016/17. The illustration shows the percentage of funding provided by the BC OGRIS and the percentage by our research partners. Funding envelopes with no activity are not shown. The Operating Fund (i.e., non-Caribou funding envelopes) supported an average of between 19 per cent and 51 per cent of the total value of research projects in which it participated while the Caribou Fund supported 97 per cent.



## Governance and Management

The BC OGRIS is a provincially incorporated not-for-profit organization under the BC Societies Act whose members are the Canadian Association of Petroleum Producers, Explorers and Producers Association of Canada and the BC Oil and Gas Commission. The BC OGRIS Board of Directors consists of three directors—one director representing each of the members and is responsible for the governance and management of the BC OGRIS.

Administration of the BC OGRIS is carried out under the supervision of the Board of Directors by the Program Manager. Financial services and technical support of the website are provided under a services agreement with the Commission.

## Operating Principles

Operating principles established by the BC OGRIS Board of Directors include the following:

Priority	Description
<b>Ensure good governance of the BC OGRIS</b>	Providing oversight of projects and ensuring all projects use and follow applicable processes, tools and policies while ensuring flexibility to respond to additional opportunities as they arise. Governance of individual projects is undertaken applicable to the investment level, type of research and project specific risks.
<b>Ensure good use of the investment funds</b>	Soliciting research proposals and making decisions on funding research consistent with the following BC OGRIS principles:
<ul style="list-style-type: none"> <li>• <b>Targeting research</b></li> </ul>	<ul style="list-style-type: none"> <li>• at known knowledge gaps that are important to our major stakeholders such as undertaking projects to inform emerging public policy topics, regulatory discussions in government and best management practices in industry.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Leveraging our research funding</b></li> </ul>	<ul style="list-style-type: none"> <li>• by including other stakeholders and research partners in our funding agreements and being flexible in our funding models.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Conducting extension activities</b></li> </ul>	<ul style="list-style-type: none"> <li>• to ensure research findings and the application and implications of the research findings are easy to find and use by our target audiences.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Minimizing administrative expenses</b></li> </ul>	<ul style="list-style-type: none"> <li>• through sharing administrative and overhead costs with research partners and structuring simple, yet maintaining flexible and appropriate funding agreements.</li> </ul>



## Financial Report (FY 2016/17)

### Results of Operations

The BC OGRIS has historically received most of its funding from levies on production volumes and fees from well licence applications. In FY 2015/16 and FY 2016/17, the Commission made financial contributions to the BC OGRIS to support expenditures. In FY 2016/17, several other organizations including the B.C. Government, Federal Government and pipeline companies made financial contributions to the BC OGRIS for specific projects. As a result of these contributions, revenue to BC OGRIS from fees and levies was suspended.

A summary of financial activity in FY 2016/17 is shown below. The activity is broken down by funding envelopes with the Operating Fund column representing all the funding envelopes except the Caribou Fund. The annual financial audit of the BC OGRIS was completed by external auditors. Copies of the audit statement and the audited financial reports are available on the BC OGRIS website at <http://www.bcogris.ca/about>.

### Statement of Financial Position (as at March 31, 2017)

	Operating Fund (000's)	Caribou Fund (000's)	Total
<b>Assets</b>			
<b>Current assets</b>			
Cash & cash equivalents	\$ 4,126	\$ 1,908	\$ 6,034
Accounts receivable	111	91	202
Prepays	31	17	48
<b>Sub-total</b>	<b>\$ 4,268</b>	<b>\$ 2,016</b>	<b>\$ 6,284</b>
<b>Total Assets</b>	<b>\$ 4,268</b>	<b>\$ 2,016</b>	<b>\$ 6,284</b>
<b>Liabilities and net assets</b>			
<b>Current liabilities</b>			
Accounts payable	\$ 199	\$ 488	\$ 687
Holdback payable	6	6	12
Deferred contributions	2,290	—	2,290
<b>Sub-total</b>	<b>\$ 2,495</b>	<b>\$ 494</b>	<b>\$ 2,989</b>
<b>Fund Balances</b>			
Caribou	—	1,522	1,522
Operating	1,773	—	1,773
<b>Sub-total</b>	<b>\$ 1,773</b>	<b>\$ 1,522</b>	<b>\$ 3,295</b>
<b>Total Liabilities and Net Assets</b>	<b>\$ 4,268</b>	<b>\$ 2,016</b>	<b>\$ 6,284</b>

## Statement of Operations and Net Assets (for year ending March 31, 2017)

	Operating Fund (000's)	Caribou Fund (000's)	Total
<b>Revenue</b>			
Interest	\$ 34	\$ 41	\$ 75
Contributions	217	122	339
<b>Sub-total</b>	<b>\$ 251</b>	<b>\$ 163</b>	<b>\$ 414</b>
<b>Expenses</b>			
Project costs	457	2,199	2,656
Professional services	30	148	178
Management fees	9	19	28
	496	2,366	2,862
Extension and communication	—	36	36
Other expenses	19	30	49
Amortization expense	—	97	97
Loss on disposal of assets	—	40	40
<b>Sub-total</b>	<b>\$ 515</b>	<b>\$ 2,569</b>	<b>\$ 3,084</b>
<b>Deficiency of revenue over expenses</b>	<b>(264)</b>	<b>(2,406)</b>	<b>(2,670)</b>
<b>Fund balance beginning of year</b>	<b>2,037</b>	<b>3,928</b>	<b>5,965</b>
<b>Fund balance end of year</b>	<b>\$ 1,773</b>	<b>\$ 1,522</b>	<b>\$ 3,295</b>

## Research Activities (FY 2017/18)

The table below illustrates the forecasted research funding, by funding envelope, over the next three years. Expenditures in the Caribou Fund are forecasted to end at the expiry of the funding MoU between industry and the B.C. Government (July 2018). Expenditures in the Operating Fund will be approved and released by the Board of Directors to match the revenue from our stakeholders.

The BC OGRIS will continue to fund a diversity of research projects while ensuring the projects focus on addressing knowledge gaps important to the oil and gas sector and our stakeholders.

The funding priorities for FY 2017/18 include the following items:

- Caribou—support research completing under the final year of the MoU between the B.C. Government and industry to support boreal caribou research in B.C. We will work with the B.C. Government and industry to plan and transition to the next funding model for boreal caribou research in B.C.
- Seismicity—maintain a seismic array network to collect and analyze data on seismic activity in northeast B.C.
- Air—continue to support projects collecting and analyzing data on air quality in northeast B.C. Undertake new research in methane related topics.
- Water—inventory, analyze and provide access to information on surface water quantity and ground water quality.
- Green House Gas (GHG) reductions—collect baseline data for use in emission factors.
- Collaboration and Communication—support projects in building capacity to understand and monitor oil and gas activity in First Nation areas. Undertake new research in oil and gas applications of near earth and remote sensing technologies.

## Forecasted Research Funding (FY 2017/18)

	2016/17*	2017/18*	2018/19*	Total*
<b>Project expenditure (by funding envelope)</b>				
Caribou Fund	\$2,270	--	--	\$2,270
Operating Fund:				
- Environmental Impacts	\$596	\$145	--	\$741
- Community Environmental Knowledge	\$140	--	--	\$140
- Health and Safety	\$125	\$50	--	\$175
- Cumulative Impact Management	--	--	--	\$0
- Collaboration and Communication	\$620	--	--	\$620
- Unallocated	\$85	\$50	\$75	\$210
<b>Total</b>	<b>\$3,836</b>	<b>\$245</b>	<b>\$75</b>	<b>\$4,156</b>

\* Numbers in thousands.

## Active Projects

The following projects, listed by funding area, were undertaken in FY 2016/17. More information on these projects can be found on the BC OGRIS website at [www.bcogris.ca](http://www.bcogris.ca) or by contacting the Program Manager at [info@bcogris.ca](mailto:info@bcogris.ca).

### Caribou

Investment to-date: \$8.9 million

#### Focus

Supporting the B.C. Government's implementation plans for the ongoing management of caribou in B.C. through conducting research on caribou and their habitat. The governance around the implementation plan and underlying activities is supported by a Memorandum of Understanding (MoU) between industry and the B.C. Government signed on August 8, 2011. The MoU expires in July 2018 and discussions are underway for activities after that.

#### Active projects (FY 2016/17)



Images from motion-sensing cameras installed to monitor large mammal use of linear features (courtesy Matrix Solutions).



#### Boreal Caribou Telemetry Program

Collect, monitor and report population and habitat information through a network of over 200 GPS/VHF radio collars deployed on boreal caribou, moose and wolves. The information enables the refinement of population growth estimates and the location of caribou and their predators (*Caslys Consulting; Diversified Environmental Services*).

#### Restoration Activities and Monitoring

Sixty-one kilometers of linear features in the Parker Range were restored in FY 2016/17. Follow-on projects are monitoring the vegetation response and the use of the restored corridors by predators. Additional research will be undertaken next fiscal year to assess alternative ways to functionally restore seismic lines sooner with fewer resources.

#### REMB Annual Report

More information on projects in the Caribou Fund can be found in the REMB Annual Report available on the BC OGRIS website: <http://www.bcogris.ca/boreal-caribou/extension>.



## Collaboration and Communication

Investment to-date: \$0.5 million

### Focus

Improving communication between industry, regulators and government agencies, other stakeholders and First Nations.

### Active projects (FY 2016/17)



Environmental Monitor (Liaison) Program  
(courtesy BC Oil and Gas Commission).

#### BC Natural Gas Atlas

Create a comprehensive, public facing atlas of natural gas molecular and isotope compositional data for northeast B.C. (*Geoscience BC / University of Victoria*).

#### Environmental Monitor (Liaison) Program

Supporting the development of capacity within First Nations to monitor oil and gas activities in northeast B.C. In its first year, the program quickly grew to involve seven Aboriginal groups. Plans and funding are in place to expand into a B.C. Government program for the natural resource sector (*BC Oil and Gas Commission*).

## Cumulative Impacts Management

Investment to-date: \$1.1 million

### Focus

Advancing the understanding and management of the cumulative impacts of oil and gas projects in the context of landscape level management.

### Active projects (FY 2016/17)

No active projects in FY 2016/17. Projects are planned for FY 2017/18.

## Environmental Impacts

Investment to-date: \$4.5 million

### Focus

Collecting information and identifying methods to avoid, minimize, or mitigate the impacts of oil and gas activities on terrestrial and aquatic ecosystems.

### Active projects (FY 2016/17)



Aerial equipment mapping groundwater aquifers in the Peace Region (courtesy Geoscience BC).



Seismic Array Network project equipment—an installed seismograph station (courtesy Geoscience BC).

### Water Related Projects

Three projects to research water quality and quantity in northeast B.C. Projects include mapping groundwater aquifers in the Peace Region; deriving salt standards for produced water in wetlands; and understanding the distribution and flow pathways of springs in northeast B.C.

### Hydraulic Fracturing Fluid Greenness Assessment Method

Develop a single greenness assessment method for hydraulic fracturing fluids that will establish baseline performance levels (*University of British Columbia—Okanagan*).

### Seismic Array Network Project

Year five of a five-year project to establish and maintain a network to collect and analyze data on seismic activity in northeast B.C. The analysis provides an understanding of the seismic events related to hydraulic fracturing and enables the energy sector and the regulator to continue the safe and responsible development of B.C.'s natural gas resources (e.g., providing protocols for hydraulic fracturing, fluid disposal and completion practices) (*Geoscience BC*).

## Health and Safety

Investment to-date: \$1.6 million

### Focus

Advancing oil and gas practices related to human health and safety.

### Active projects (FY 2016/17)



#### Northeast Air Monitoring Project

Year three of a three-year project to establish a monitoring network in northeast B.C. to capture air quality data for use in making informed public health decisions (*B.C. Ministry of Environment*).

Northeast Air Monitoring project equipment—an air monitoring environmental laboratory (courtesy B.C. Ministry of Environment).

## Community Environmental Knowledge

Investment to-date: \$1.1 million

### Focus

Documenting, demonstrating and improving the application of community environmental knowledge to oil and gas planning, development and restoration.

### Active projects (FY 2016/17)

No active projects in FY 2016/17. Some community environmental knowledge activities were undertaken under the Caribou Fund and as part of projects in the Collaboration and Communication funding envelope.

## In Closing

From our beginning in 1999, we have supported close to 125 projects ranging in size from short studies and reports to multi-year projects involving multiple researchers and organizations. In the last five years, our level of activity in funding research has steadily increased to reach record numbers of projects supported. Our projects are getting larger and focused on strategic alignment with priorities of the B.C. Government.

We thank all our stakeholders, researchers, technical reviewers and administration team for their assistance in delivering these research projects. Your support and assistance enable us to meet our goals and deliver findings that address important knowledge gaps in environmental and social aspects of oil and gas development in B.C.

Comments and questions on this report and/or the BC OGRIS can be sent to [info@bcogris.ca](mailto:info@bcogris.ca).