The Honourable Christian Paradis, P.C., M.P.  
(Mégantic–L’Érable)  
Natural Resources Canada  
House of Commons  
Ottawa, Ontario  
K1A 0A6

The Honourable Chuck Strahl, P.C., M.P.  
Indian Affairs and Northern Development Canada  
House of Commons  
Ottawa, Ontario  
K1A 0A6

Dear Ministers:

On behalf of the Environmental Studies Research Funds Management Board, it is my pleasure to submit the 2009 Annual Report for the Environmental Studies Research Funds in accordance with paragraph 79(1)(d) of the Canada Petroleum Resources Act.

Sincerely yours,

[Signature]

Paul Barnes  
A/ Chairman  
Environmental Studies Research Funds Management Board
ANNUAL REPORT FOR THE

ENVIRONMENTAL STUDIES RESEARCH FUNDS

APRIL 2010

Environmental Studies Research Funds
Profile

The Environmental Studies Research Funds (ESRF) is a research program that sponsors environmental and social studies. It is designed to assist government decision-making related to oil and gas exploration and development on Canada's frontier lands. The ESRF program, initiated in 1983 under the Canada Oil and Gas Act (COGA), now receives its legislated mandate through the superseding legislation, the Canada Petroleum Resources Act (CPRA), proclaimed in February 1987. Funding for the ESRF is provided through levies on frontier lands by interest holders such as oil and gas companies. The ESRF is directed by a joint government/industry/public Management Board and is administered by a Secretariat that resides within the Office of Energy Research and Development of Natural Resources Canada in Ottawa, Ontario.

Published under the auspices of the
Environmental Studies Research Funds
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Background on the Structure and Operation of the Funds</td>
<td>1</td>
</tr>
<tr>
<td>Activities in 2009</td>
<td>2</td>
</tr>
<tr>
<td>Financial Statement</td>
<td>2</td>
</tr>
<tr>
<td>2009 Study Program</td>
<td>4</td>
</tr>
<tr>
<td>Plans for 2010</td>
<td>6</td>
</tr>
<tr>
<td>Publication of Reports</td>
<td>6</td>
</tr>
<tr>
<td>Appendix 1 - ESRF Reports, 1985 - 2009</td>
<td>8</td>
</tr>
<tr>
<td>Appendix 2 - 2009 ESRF Management Board Members</td>
<td>20</td>
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</table>
Background on the Structure and Operation of the Funds

The Environmental Studies Research Funds (ESRF) finance environmental and social studies pertaining to the manner in which, and to the terms and conditions under which, petroleum exploration, development and production activities on frontier lands should be conducted. Subsection 101(1) of the Canada Petroleum Resources Act (CPRA) defines an environmental study as “work pertaining to the measurement or statistical evaluation of the physical, chemical, and biological elements of the lands, oceans, or coastal zones, including winds, waves, tides, currents, precipitation, ice cover and movement, icebergs, pollution effects, flora and fauna, both onshore and offshore, human activity and habitation, and any related matter.”

The Environmental Studies Research Funds are directed by a twelve-member Management Board that has representation from the federal government, the Canada–Nova Scotia Offshore Petroleum Board (CNSOPB), the Canada–Newfoundland and Labrador Offshore Petroleum Board (CNLOPB), the oil and gas industry, and the general public. Mr. Paul Barnes, Atlantic Canada Manager, Canadian Association of Petroleum Producers, is the current acting chairman of the ESRF Management Board.

The ESRF Management Board directs the business of the ESRF, sets priorities for study topics, determines the program budget and facilitates the development of study proposals on behalf of the Minister of Natural Resources Canada and the Minister of Indian and Northern Affairs Canada.

The program operates on a calendar year basis. The Board generally meets three times a year; however, the frequency of meetings may be adjusted as circumstances dictate. The Board assesses the information requirements of government and industry to determine priorities for the study program for the coming year. The budget to support the study program and its administration forms the basis for the calculation of the levy rate schedule. The budget and levy rates are submitted to the Ministers for approval by November 1 of each year. The projects under the study program are initiated following the collection of levies that generally occurs in the first quarter of the calendar year.
Activities in 2009

The total value of the 2009 ESRF program was $1,552,235. The budget included $1,232,735 for the proposed studies and $319,500 for the administration of the ESRF research activities program (refer to Levy #21 – Table 1).

The collection of unpaid levies is pursued on an ongoing basis by the ESRF Secretariat. Maps of the ESRF levy regions can be viewed on the ESRF website at: http://www.esrfunds.org/legloi_e.php

Financial Statement

January 1, 2009 to December 31, 2009
In Dollars

<table>
<thead>
<tr>
<th>Regions</th>
<th>Opening Cash Balance</th>
<th>Levies and Back Levies Collected</th>
<th>Administrative Costs</th>
<th>Study Program Expenditures</th>
<th>Closing Cash Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOUTH: Regions 1 to 16</td>
<td>2,738,559</td>
<td>1,007,612</td>
<td>(167,958)</td>
<td>(484,779)</td>
<td>354,875</td>
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<td>NORTH: Regions 17 to 31</td>
<td>380,578</td>
<td>1,386,972</td>
<td>(87,624)</td>
<td>(525,356)</td>
<td>1,154,570</td>
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<td>TOTAL</td>
<td>$3,119,137</td>
<td>$2,394,584</td>
<td>($255,582)</td>
<td>($1,010,134)</td>
<td>$4,248,004</td>
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</tbody>
</table>
### Table I

**ESRF Revenues**

*January 01, 2009 to December 31, 2009*

*In Dollars*

<table>
<thead>
<tr>
<th>REGIONS</th>
<th>Levy #21 ($/ha)</th>
<th>Levies Invoiced 2009</th>
<th>Levies Collected 2009</th>
<th>Back Levies Collected 2009</th>
<th>Total Levy Revenue Collected</th>
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<td>0.0000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2 Hecate Strait</td>
<td>0.0000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3 Queen Charlottes South</td>
<td>0.0000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>4 Vancouver Island</td>
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<td>5 Labrador North</td>
<td>0.1490</td>
<td>1,082</td>
<td>1,082</td>
<td>1,082</td>
<td>1,082</td>
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<td>6 Labrador Central</td>
<td>0.1490</td>
<td>92,589</td>
<td>122,555</td>
<td>122,555</td>
<td>122,555</td>
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<td>7 Labrador South</td>
<td>0.1490</td>
<td>50,525</td>
<td>20,261</td>
<td>20,261</td>
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<td>8 Northeast Newfoundland</td>
<td>0.0699</td>
<td>194</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>9 Newfoundland Slope</td>
<td>0.0708</td>
<td>156,101</td>
<td>133,538</td>
<td>133,538</td>
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<tr>
<td>10 Grand Banks North</td>
<td>0.1220</td>
<td>71,987</td>
<td>106,837</td>
<td>3,687</td>
<td>110,524</td>
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<td>11 Grand Banks South</td>
<td>0.1068</td>
<td>98,882</td>
<td>124,054</td>
<td>84,178</td>
<td>208,232</td>
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<td>12 Scotian Shelf East</td>
<td>0.0908</td>
<td>161,415</td>
<td>86,304</td>
<td>86,304</td>
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<tr>
<td>13 Scotian Shelf West</td>
<td>0.1326</td>
<td>21,199</td>
<td>0</td>
<td>0</td>
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<td>14 Scotian Slope</td>
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<td>145,184</td>
<td>130,165</td>
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<td>15 Gulf of St. Lawrence</td>
<td>0.0774</td>
<td>72,680</td>
<td>40,333</td>
<td>24,607</td>
<td>64,940</td>
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<tr>
<td>16 Hudson Bay</td>
<td>0.0000</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>17 Beaufort South</td>
<td>0.5095</td>
<td>277,456</td>
<td>277,334</td>
<td>167,614</td>
<td>444,948</td>
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<td>18 Beaufort North</td>
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<td>253,949</td>
<td>729,898</td>
<td>32,447</td>
<td>762,345</td>
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<td>19 Western Archipelago-Offshore</td>
<td>0.0492</td>
<td>367</td>
<td>1,129</td>
<td>913</td>
<td>2,042</td>
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<tr>
<td>20 Central Archipelago-Offshore</td>
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<td>11,850</td>
<td>12,088</td>
<td>12,088</td>
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<td>21 Eastern Archipelago-Offshore</td>
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<td>411</td>
<td>303</td>
<td>303</td>
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<tr>
<td>22 Baffin Bay</td>
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<td>0</td>
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<td>0</td>
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<tr>
<td>23 Yukon North</td>
<td>0.0000</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>24 Yukon South</td>
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<td>0</td>
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<td>0</td>
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<tr>
<td>25 Mackenzie Delta</td>
<td>0.0448</td>
<td>21,232</td>
<td>18,212</td>
<td>18,212</td>
<td>18,212</td>
</tr>
<tr>
<td>26 Mackenzie North</td>
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<td>37,712</td>
<td>37,712</td>
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<td>27 Mackenzie Central</td>
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<td>105,872</td>
<td>105,872</td>
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<td>1,514</td>
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<td>29 Western Archipelago-Onshore</td>
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<tr>
<td>30 Central Archipelago-Onshore</td>
<td>0.0448</td>
<td>2,138</td>
<td>1,886</td>
<td>1,886</td>
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<td>31 Eastern Archipelago-Onshore</td>
<td>0.0115</td>
<td>141</td>
<td>49</td>
<td>49</td>
<td>49</td>
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</tbody>
</table>

**TOTAL**  
$1,549,936.90 $1,951,126.74 $443,456.81 $2,394,583.55
2009 Study Program

The ESRF Management Board approved the following eight new studies for the 2009 study program:

Northern Studies

Priority Area:
Oil and Gas Effects on Northern Use of Land and Water
  o A review of Tuktoyaktuk Harbour as a Base for Offshore Oil and Gas Exploration and Development
  o An Analysis of Historical Water Quality Data for Bosworth Creek
Oil Spill Fate, Effects and Response
  o A Review of Oil Spill State of Knowledge for the Beaufort Sea
Seismic Issues – Offshore
  o Development of Aerial Survey Techniques and Whale Detection Methods for Seismic Operations in the Beaufort Sea
  o Validation of Predicted Sound Effects on Whale Behaviour Based on Acoustic Modelling and Field Observations in the Beaufort Sea

East Coast Studies

Priority Area:
Socio-Economic
  o Evaluation of potential socio-economic effects on the Labrador coast as a result of the resumption of offshore oil and gas exploration and development and possible future production
Air Emissions
  o Modelling Emissions from Offshore Installations
Seabirds
  o Developing Remote Tracking Technology for Drift Blocks
Continuing Studies in 2009 – Northern

Priority Area:
Seismic Issues – Onshore
  o Seismic Lines Recovery Study
Waste Management
  o Waste Disposal Options in the Inuvialuit Settlement Region
Effects on Protected Species/Areas
  o Bosworth Creek Reclamation
Cumulative Effects/Land Use Planning
  o Valued Components Thresholds Project
Socio-Economic Effects
  o Considerations in Developing Oil and Gas Industry Best Practices in the North

Continuing Studies in 2009 – East Coast

Priority Area:
Seismic Issues
  o Invertebrates (snow crab)
  o Monkfish
  o Fish Behaviour
  o Marine Mammal Observation Data Analysis
  o Lobster Feeding
Seabirds
  o Offshore Monitoring
  o Sheens and Feathers
Waste Management
  o Produced Water
  o Synthetic-Based Mud Fate
Miscellaneous
  o Oil Spill Workshop
  o Whale Vocalization
**Plans for 2010**

In September 2009, the ESRF Management Board established the budget for the 2010 program, which will be supported by Levy #22. This program was recommended by the Management Board and has been approved by the Minister of Natural Resources Canada and the Minister of Indian and Northern Affairs Canada. The study program has an estimated value of $2,880,949 and an administration budget of $576,698.00 for new programs. Continuing studies from 2009 will be funded from the balance of existing uncommitted funds.

The ESRF Management Board has established the following priority areas for 2010:

**North**
1. Seismic Exploration Offshore
2. Seismic Exploration Onshore
3. Waste Management
4. Effects on Protected Areas/Species
5. Cumulative Effects/Land Use Planning
6. Socio-economic Effects

**East Coast**
1. Seismic
2. Seabirds
3. Waste Management
4. Socio-Economic Issues
5. Offshore Air Emission

**Publication of Reports**

All ESRF studies are subject to a scientific/technical peer review. Reports that are deemed to be scientifically or technically significant are published in the ESRF Technical Report Series. The series is documented in several international databases including the Canadian Institute for Scientific and Technical Information (CISTI).
Since its inception in 1983, the ESRF has published 163 reports. All reports are available to download for free on the ESRF website.

**Recent Publications**

In 2009, the ESRF published the following reports in the ESRF Technical Report Series:


Bibliographies


136 Coastal Resource Inventory: Great Northern Peninsula. Not published.

Environmental Effects and Monitoring


DILLON CONSULTING, BMT CORDAH LTD. *Standardizing the Reporting of Air Emissions to Ambient Air from Atlantic Canada Offshore Petroleum Activities*. March 2003. 52 p.


**Environmental Loading and Design**


Frontier Social and Economic Issues

GARDNER, M. Interaction Between the Fisheries & the Oil and Gas Industry off the East Coast of Canada. March 1985. 70 p.


IDP CONSULTANTS LTD. Public Information on Oil and Gas Activities. September 1986. 170 p.


Ice – Icebergs – Ice Detection


Oil Spill Research and Countermeasures


Sea Bottom Ice Scour

055 GILBERT, G. and K. PEDERSEN. Ice Scour Data Base for the Beaufort. December 1986. 93 p. + appendices
105 GEONAUTICS LIMITED. Regional Ice Scour Data Base Update Studies. October 1989. 177 p. + appendices
SONNICHSEN, G.V., HUNDERT, T., POCKLTON, P. AND MYERS, R.  
Documentation of Recent Iceberg Grounding Events and a Comparison with Older Events of Know Age - Northern Grand Banks, Canada, April 2006. 206 p.

Sediment Transport


Waves


076  EID, B.M. and V.J. CARDONE. *Operational Test of Wave-Forecasting Models During the Canadian Atlantic Storms Program (CASP)*. August 1987. 256 p.


### Appendix 2 – 2009 SRF Management Board Members

<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Robert Steedman</strong></td>
<td>Professional Leader, Environment</td>
</tr>
<tr>
<td>Chair</td>
<td>National Energy Board</td>
</tr>
<tr>
<td></td>
<td>777 - 4th Avenue S.W.</td>
</tr>
<tr>
<td></td>
<td>Calgary, AB T2P 0X8</td>
</tr>
<tr>
<td><strong>Paul Barnes</strong></td>
<td>Atlantic Canada Manager</td>
</tr>
<tr>
<td>Vice-chair</td>
<td>Canadian Association of Petroleum Producers</td>
</tr>
<tr>
<td></td>
<td>403, 235 Water Street</td>
</tr>
<tr>
<td></td>
<td>St. John’s, NL A1C 1B6</td>
</tr>
<tr>
<td><strong>Gerard Chidley</strong></td>
<td>PO Box 22</td>
</tr>
<tr>
<td>Executive Member</td>
<td>Renews, NL A0A 3N0</td>
</tr>
<tr>
<td><strong>Norman Snow</strong></td>
<td>Executive Director</td>
</tr>
<tr>
<td></td>
<td>Joint Secretariat</td>
</tr>
<tr>
<td></td>
<td>Inuvialuit Renewable Resources Committees</td>
</tr>
<tr>
<td></td>
<td>107 Mackenzie Road</td>
</tr>
<tr>
<td></td>
<td>Inuvik, NT X0E 0T0</td>
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<tr>
<td><strong>David Burley</strong></td>
<td>Manager, Environmental Affairs</td>
</tr>
<tr>
<td></td>
<td>Canada–Newfoundland and Labrador Offshore Petroleum Board</td>
</tr>
<tr>
<td></td>
<td>5th Floor, TD Place</td>
</tr>
<tr>
<td></td>
<td>140 Water Street</td>
</tr>
<tr>
<td></td>
<td>St. John’s, NL A1C 6H6</td>
</tr>
<tr>
<td><strong>Greg Janes</strong></td>
<td>Petro-Canada, East Coast Operations</td>
</tr>
<tr>
<td></td>
<td>Scotia Centre, Suite 201</td>
</tr>
<tr>
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</tr>
<tr>
<td><strong>Eric Theriault</strong></td>
<td>Advisor, Environmental Affairs</td>
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<tr>
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<td>Canada–Nova Scotia Offshore Petroleum Board</td>
</tr>
<tr>
<td></td>
<td>1791 Barrington Street</td>
</tr>
<tr>
<td></td>
<td>Halifax, NS B3J 3K9</td>
</tr>
</tbody>
</table>
Hugh Bain
Senior Advisor, Ecosystem Science Directorate
Fisheries and Oceans Canada
200 Kent Street
Ottawa, ON K1A 0E6

Al Kennedy
Manager, Environmental, Social Economic Assessment
Imperial Oil Resources
Mackenzie Gas Project
237 Fourth Avenue SW
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Ruth McKechnie
Senior Advisor
Northern Oil and Gas Branch
Indian and Northern Affairs Canada
15 Eddy Street, Room 10E1
Gatineau, QC K1A 0H4

Vacant
Environment Canada
(Awaiting Ministerial Appointment)

Vacant
Industry
(Awaiting Ministerial Appointment)