

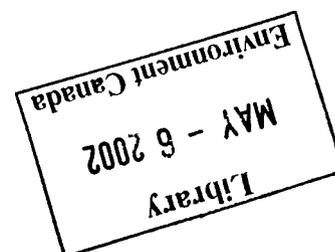


Government  
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Gouvernement  
du Canada

Environmental  
Studies  
Research  
Funds

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## HIGHLIGHTS OF ITEMS IN THIS ISSUE:

- ⇒ 2003 priorities
- ⇒ Current Studies Update
- ⇒ The 2002 study program

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## Mandate of the Environmental Studies Research Funds

Section 76(2) of the Canada Petroleum Resources Act sets out the purpose of the ESRF: *"The purpose of the Funds is to finance environmental and social studies pertaining to the manner in which, and the terms and conditions under which, exploration, development and production activities on frontier lands authorized under this Act or any other Act of Parliament should be conducted."*

### 2003 Priorities - Your Input is Requested

The Funds are available to support environmental and socio-economic research that has a direct application to activities authorized by the National Energy Board, the C-NSOPB, the C-NOPB or DIAND. Annually, the Management Board will publish a list of ESRF priorities to provide more specific guidance on research areas the Management Board believes will address current issues. Basic research of general applicability is not eligible for ESRF funding; similarly, projects whose primary purpose is commercialization of existing equipment or methodologies are excluded. ESRF projects should provide value to a number of operators in a region and should not be used to fund research or monitoring that is a direct requirement for a single company's E&P activity.

The Management Board is requesting input from the public to assist it in establishing priority study areas for 2003. You are invited to suggest research or study areas consistent with the ESRF mandate as described above. To provide greatest benefit, your submission should include a description of the need for the work, the management questions that should be answered by the research, and if possible, your assessment of the impact of not undertaking work in the study area. The Board is **not** looking for specific research proposals at this time. The Management Board plans to establish priorities for 2003 by early summer of 2002. When budgets and levies for 2003 are approved, the Secretariat will develop Requests for Proposals (RFPs) which will be tendered on a competitive bid basis in early 2003. Studies may be single year or multi-year as deemed appropriate by the Management Board. **The deadline for submissions on suggested priority areas for 2003 is May 31, 2002.** The ESRF Management Board will be reviewing the priority areas received at the June 2002 meeting.

The ESRF Management Board is not able to request a levy be issued for regions that are currently under a moratorium or prohibition. As a result of this policy, the ESRF Management Board is not soliciting priority areas for 2003 for ESRF Regions 1) Queen Charlottes North, 2) Hecate Strait, 3) Queen Charlottes South, 4) Vancouver Island, 5) Labrador North, 6) Labrador Central, 7) Labrador South, 13a) Georges Bank, 16) Hudson Bay, 21) Eastern Archipelago-Offshore, 22) Baffin Bay, or 31) Eastern Archipelago-Onshore.

### Current Studies Update

The Environmental Studies Research Funds (ESRF) Management Board met 6 times in 2001. The ESRF Management Board undertook an ambitious program of activity for 2001 with 8 new studies

with a total value of \$875,885 being approved. As well, work continued in 2001 on 3 studies initiated in 2000.

### **Effects of Seismic Energy on Snow Crab**

This is a one-year study valued at \$267,500.00

As a result of ESRF report #139, *Proceedings of a Workshop to Develop Methodologies for Conducting Research on the Effects of Seismic Exploration on the Canadian East Coast Fishery, Halifax, Nova Scotia, 7-8 September 2000*, the ESRF Management Board issued a request for proposal and subsequently awarded a contract to determine whether commercial-sized snow crab can detect seismic sounds and whether or not there are any discernible changes in their behaviour or physiology. All work required under this contract is to be completed on, or before, December 31, 2002.

### **Update the CSA Offshore Structure Standards**

This is the third year of a three-year study with a total value of \$200,000.00.

The global nature of the offshore structures industry requires the CSA Offshore Structures Standards to harmonize with those of ISO for the benefit of Canadian industry, and to ensure the ISO Standards account for the challenging environment conditions offshore Canada. These standards were originally written by several CSA Technical Committees and verified by several ESRF sponsored projects. This study has two main components:

*Phase 1:* Review and update the CSA Offshore Structures Standards, including the associated commentaries and supplements.

*Phase 2:* Harmonize all the CSA Offshore Structures Standards with those of ISO

The new editions of the CSA Offshore Structures Standards will be published in 2002.

### **Identification of Ecologically and Commercially Important Areas in the Southern Gulf of St. Lawrence**

This was a one-year study valued at \$50,000.00.

Jacques Whitford Environment Limited has completed the identification and mapping of the location and critical timing of ecologically important areas such as spawning grounds, feeding areas, migration routes, larval retention areas, nursery areas and other concentrations of fish, invertebrates, marine mammals and seabirds; identifying the location of coastal parks and conservation areas (i.e. migratory bird sanctuaries), sites of cultural or aboriginal significance and important areas for tourism/ecotourism; identifying the location, timing and gear types for southern Gulf fisheries (both current and for 1985 as a pre-moratorium period for species which may recover in future to commercial levels); identifying the location of important coastal areas such as aquaculture sites, beaches, marine plant harvesting areas and important shoreline characteristics; and compiling the results into a series of digital maps on appropriate hydrographic

charts (or topographic maps) with accompanying brief written descriptions of each area in ESRF Report # 140, *Atlas of Ecologically and Commercially Important Areas in the Southern Gulf of St. Lawrence*. This report is available on the ESRF website and in cd-rom format.

### **Abstracting of Existing Studies and Reports Related to the Oil & Gas Development in the North.**

This is a one-year study valued at \$100,000.00

The ESRF Management Board has approved funding to the Arctic Institute of North America to further their ongoing project of abstracting existing studies and reports related to the Oil and Gas Development in the North. The completion of these abstracts will provide a starting point for the ESRF Management Board's approved 2001 project - Gap Analysis in the North. As of February 2002, a total of 698 reports have been completed and added to the ASTIS data base.

### **Airshed Monitoring on Sable Island**

This was a one-year study valued at \$100,000.00.

The ESRF Management Board assisted Environment Canada Atlantic Region with equipment acquisition and the set up & calibration of this equipment on Sable Island. The information obtained will be used to better inform scientists who could present and interpret this information objectively in various forms. As part of emissions to air the "Contaminants of Concern" will include oxides of nitrogen, volatile organic compounds, methane and oxides of Sulphur. Industry is also interested in sampling fine particulate matter. Airshed monitoring on Sable Island will sample the above pollutants.

### **Field Verification of Benthic Boundary Layer Modelling Effects**

This is the second year of a two-year study with a total value of \$120,000.00.

The ESRF Management Board has provided funding to the Department of Fisheries and Oceans to support this study. The fate and environmental impacts of discharged drilling muds are ongoing issues to operators, regulators, government agencies and environmentalists, particularly with multiple development sites in proximity to each other. Sound scientific assessments of the fate and impacts for different mud/discharge scenarios can provide a basis for cost-effective strategies that minimize both real and perceived adverse impacts. A report is expected for this study in December 2002.

### **Deep Water Benthic Community Study**

This is the second year of a two-year study with a total value of \$285,000.00.

The ESRF Management Board has provided funding to the Department of Fisheries and Oceans to support this study. The study will: 1) Analyse and interpret **existing** data collected by DFO during groundfish trawl surveys and using video and photographic equipment on research cruises, as well as similar data that are available from other sources; and 2) Collect **new** data using video and

photographic equipment at deepwater sites along the continental slope and in canyons of prime interest to the oil and gas industry. Maps of coral distribution and an ESRF report are expected for this study in December 2002.

### **Documentation of Iceberg Scouring and Degradation Processes Based on Recent Grounding Events**

This is the second year of a two-year study with a total value of \$200,000.00.

The ESRF Management Board has provided funding to Geological Survey of Canada, Atlantic Region for this study. The objectives for this study are:

- To conduct seabed survey programs to document seabed impact features produced by icebergs reported to have grounded on northeastern Grand Banks in 2000 including but not limited to scour type, morphology, depth, effects of sediment and seabed relief variations, and sediment texture and strength.
- To develop case studies of the grounding events to refine our understanding of ice scouring processes and to constrain existing (C-CORE) and proposed (NRC) scour force models.
- To collect base line data to allow subsequent monitoring of the processes and rates of biological re-colonization and scour degradation (biological, mechanical).

Knowing how icebergs scour and damage the seabed is of critical importance for design engineers who must develop safe and cost-effective sub-sea facilities. Understanding scouring processes and calculating loads imposed on the seabed would be significantly improved by identifying grounded icebergs and conducting follow-up seabed mapping surveys.

### **Mesocosm and Laboratory Study of Effects of Drill Cuttings**

This is the second year of a two-year study with a total value of \$155,000.00.

The ESRF Management Board has provided funding to the Department of Fisheries and Oceans to support this study. Modelling studies in association with oil development applications provide a level of predictive information on cutting dispersion and thickness, but the key questions requiring a level of predictability in relation to cumulative effects are biological in nature and include the following: What level of cutting thickness produces significant impacts on sediment habitat? How much of the impact is simply physical as opposed to chemical? What are projected recovery rates in relation to cutting thickness? Will major impact zones be mostly physical (smothering and anaerobiosis) and restricted to a maximum of a km or so of rig sites or will some oil fields have potential for overlap and cumulative effects through a combination of physical and chemical factors. Results will be communicated to industry and regulators and a report prepared for ESRF in December 2002. This report will be supplemented with formal publications.

### **Research Gaps: Natural Gas Exploration and Development in the Canadian Mackenzie Delta**

This is a one-year study valued at \$98,700.00.

The ESRF Management Board awarded a contract for this study in early 2001. The three primary objectives for this work:

- document past and ongoing research in relation to the potential environmental impacts of natural gas exploration, development and gathering systems in the Canadian Mackenzie Delta and near-shore Beaufort Sea.
- review the current state of this knowledge in part by organizing, facilitating and reporting on a workshop of key stakeholders which includes the expert researchers, scientists and decision-makers involved in northern natural gas development in the above geographic region.
- analyse the existing database and the results of the workshop, and provide a report which includes a summary of the information gaps and potential priority areas for further research to facilitate the comprehensive assessment of natural gas exploration, development and gathering systems in the Canadian Mackenzie Delta and near-shore Beaufort Sea.

The workshop was held in January 2002. A report for this workshop shall be completed shortly.

#### **Marine Bird and Mammal Monitoring Study**

This is a two-year study valued at \$60,000.00.

The ESRF Management Board awarded a contract to Memorial University of Newfoundland for this study area. Seabirds are the most visible and most easily surveyed animals in marine ecosystems. They are also the most vulnerable marine animals to oil pollution at sea and once oiled are the most detectable animal indicators of marine pollution events. The study will monitor regional aggregations and distributions of marine birds on the northern Grand Bank. A major objective is to identify gaps in knowledge about marine birds and mammals that will be of benefit to oil spill response and sensitivity mapping. The principal objective of the project is to carry out an effective and comprehensive program of year-round surveys for marine birds and mammals on the Grand Banks using offshore supply vessels of opportunity.

#### **Oil Pollution Seabird Mortality Assessment on the Sable Island Bank with Applications on the Grand Banks**

This is a one-year study valued at \$60,000.00.

The ESRF Management Board awarded a contract to Francis Weise for this study in early 2001. The study should determine if regular beached bird surveys conducted on Sable Island can effectively monitor mortality of seabirds due to oil releases from oil rigs, through the use of specially calibrated drift blocks released from rigs at the Sable Island Bank. Regular beach surveys on Sable Island will be conducted. In addition, beached birds and tar balls will be recorded and collected using standardized techniques, and the oil analyzed to determine its source. Finally, using drift trajectories of the released blocks, a seabird carcass drift trajectory model as well as a mortality assessment model will be created, and tested on the Scotian Shelf and Grand Banks. A report is anticipated in April 2002.

#### **The 2002 Study Program**

The Management Board established the priority areas for 2002 at the October 2001 meeting. The program for 2002 has an estimated value of \$1.5 million which includes continuing funding for the CSA Offshore Standards, Deepwater Benthic Communities, Field Verification of Benthic Boundary Layer Modeling Effects, Documentation of Iceberg Scouring and Degradation Processes Based on Recent Grounding Events, Mesocosm and Laboratory Study of Effects of Drill Cuttings, Marine Bird and Marine Mammal Monitoring, and Oil Pollution Seabird Mortality Assessment on the Sable Island Bank with Applications on the Grand Banks. As well, work in the following study areas will be initiated in 2002 pending the collection of Levy #14: Northern Gap Analysis Follow-On Study, Waste Discharges, Spawning Map Follow On Study, Heritage Resources, Cumulative Effects, Catchability (fish) and Hearing Structures - Fish.

On the basis of these priorities, proposed levies were calculated, approved by the Management Board, and forwarded to the Minister of Indian Affairs and Northern Development and the Minister of Natural Resources Canada to raise the money for work in the proposed study areas. Both Ministers have approved the levy schedule, and invoices have been issued. Requests for Proposals (where applicable) to undertake work in these study areas will be issued in the near future. If you would like to receive a copy of the Requests for Proposal, please forward your name and address to the ESRF Secretariat.

#### **ESRF on the Web!**

The ESRF Management Board wishes to establish links to other research programs to maximize benefit from limited research funding. If your research coincides with or complements an area of ESRF work, please take time to get in touch by phone or e-mail and provide us an update. Forward your ideas and comments or requests for information/publications to:

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