

Environmental Studies Research Fund

Annual Report 2024 - 2025



Table of Contents

MESSAGE FROM THE CHAIR.....	1
MANDATE.....	2
ESRF MANAGEMENT BOARD	3
ESRF RESEARCH PRIORITY AREAS 2026-2030	4
CURRENT RESEARCH PROJECTS 2024-2025	7
FINANCIAL STATEMENTS	11
ANNEX 1: ESRF PRESCRIBED REGIONS.....	13
ANNEX 2: OPEN CALL FOR RESEARCH & STUDY SELECTION PROCESS.....	14
ANNEX 3: BIBLIOGRAPHY OF PAST ESRF PUBLICATIONS, 1985 - 2023	15

Message from the Chair

On behalf of the ESRF Management Board, I am pleased to submit the Environmental Studies Research Fund (ESRF) 2024-2025 Annual Report.

2024-2025 was a productive year for ESRF as several researchers wrapped up field work and shifted focus to communicating results. This year, ESRF continued funding multi-year projects as significant amounts of data collected now need to be analysed and communicated. ESRF commends the partnerships that have been established throughout these projects.

This year, ESRF continued funding a multi-year project which began in 2023 that explores Indigenous Knowledge Systems (IKS) on the East Coast of Canada. This project aims to strengthen IKS capacity within Indigenous communities so that they are better positioned to provide meaningful recommendations and advice to the offshore oil and gas sector, regulatory processes, and broader public policy initiatives.

ESRF also continued funding the publication of past ESRF-sponsored study data. This initiative ensures that research conducted under the Fund is widely available to support regulatory decision-making and to increase the visibility of the Fund. Ensuring that ESRF research can be published in the scientific literature is a priority for the Management Board. New funding in 2025-2026 has been set aside to support research on corals and sponges, as well as to support a retrospective analysis of the Fund.

The 2025-2026 levy rates for the southern regions were approved by the Honourable Jonathan Wilkinson, the Minister of Energy and Natural Resources at the time, with levy rates for southern regions in an area governed by an Accord Act subsequently approved by the respective offshore regulator. As well, the Honourable Gary Anandasangaree, the Minister of Crown-Indigenous Relations and Northern Affairs at the time, approved a \$0.00 levy rate for 2025-2026 for northern regions. These approvals acknowledge the important work of the ESRF Management Board and has allowed us to further refine research priority areas for the coming years (2026-2030) and potentially the next research call in the fall of 2025.

The Fund's ongoing support of research in Canada's frontier lands would not be possible without the dedication of the ESRF Management Board members. As the appointment terms of some members are coming to an end, a process is underway to appoint new members, including a new Chair. I would also like to take this opportunity to thank representatives who have served as proxies for members of the Board over the past year, including Anne-Marie Hesse of the Canada Energy Regulator, Keith Lennon from Fisheries and Oceans Canada, and Mireille Lajoie from Crown-Indigenous Relations and Northern Affairs, for stepping up to the role and for their dedication to the work of the Fund.

In closing, best of luck to all researchers this field season and we look forward to discussing your progress and research findings in the coming year.

Jennifer Matthews
Chairperson, ESRF Management Board
May 30, 2025



Mandate

The Environmental Studies Research Fund (ESRF) is a research program that sponsors studies on environmental and social implications related to oil and gas exploration and development in Canada's frontier lands.

The information arising from these studies is designed to assist all involved stakeholders, including citizens, industry, and government, in their decision making related to oil and gas exploration and development.

Initiated in 1983 under the *Canada Oil and Gas Act (COGA)*, the ESRF now receives its legislated mandate through the superseding legislation, the *Canada Petroleum Resources Act (CPR)*, proclaimed in February 1987. As well, the *Canada–Newfoundland and Labrador Atlantic Accord Implementation and Offshore Renewable Energy Management Act* and the *Canada–Nova Scotia Offshore Petroleum Resources Accord Implementation and Offshore Renewable Energy Management Act* provide legislative direction in the Fund's southern regions.



ESRF research is funded by levies on oil and gas companies that hold licenses for exploration and development in Canada's frontier lands.

The Minister of Energy and Natural Resources is responsible for the administration of the ESRF southern account for regions mainly south of 60° latitude, including Hudson Bay, and the Minister of Northern Affairs is responsible for the administration of the northern account for regions north of 60° (See Annex 1 for a map of ESRF Prescribed Regions).

ESRF Management Board

The ESRF is directed by a twelve-member joint government/industry/public Management Board and is administered by a Secretariat that resides within the Offshore Management Division of Natural Resources Canada.

The ESRF Management Board members are selected for their expertise and specialized technical knowledge relative to the mandate of the Fund. Management Board members are appointed jointly by the Minister of Northern Affairs, and the Minister of Energy and Natural Resources. The ESRF Management Board directs the business of the Fund, sets priorities for study topics, determines the program budget and facilitates the development of study proposals.

Members

Private Sector

Jennifer Matthews, Chairperson
Canadian Association of Petroleum Producers

Sherry Becker
Imperial

Steve Bettles
Cenovus Energy

Thomas McKeever
Equinor Canada Ltd.

Public Sector

Julie vanTol
Southern Regions

Vicki Sahanatien
Northern Regions

Government of Canada

Appointment in progress (Mireille Lajoie, proxy)
Crown-Indigenous Relations and Northern Affairs Canada

Laura Maclean
Environment and Climate Change Canada

Liisa Peramaki (Keith Lennon, proxy)
Fisheries and Oceans Canada

Genevieve Carr (Anne-Marie Hesse, proxy)
Canada Energy Regulator

Offshore Regulators

Dena Murphy
Canada-Nova Scotia Offshore Energy Regulator

Elizabeth Young
Canada–Newfoundland and Labrador Offshore Energy Regulator



ESRF Management Board members & Secretariat (October 2024)

ESRF Contact Information:

ESRF Secretariat

E-mail: NRCan.ESRF-FEE.RNCan@Canada.ca

Website: www.esrfunds.org

ESRF Research Priority Areas 2026-2030

The ESRF Management Board (Board) sets its research priority areas by considering the issues and data gaps in the context of its mandate. The composition of the Board and the collective experience of its members provides a means to this end, as does the advice from the Board's East Coast Advisory Committee, which is comprised of a diverse group of stakeholders with interests in, and concerns for, offshore oil and gas development.

The following research priority areas are mostly oriented towards priorities affecting southern ESRF regions, given that no new funding for research is being levied in the northern regions due to the moratorium on offshore oil and gas activities in the north (although ESRF continues to fund one northern project using funds levied prior to the 2016 moratorium).

Coral and Sponge Communities

The Fund identified the potential effects of drill cuttings on coral and cold-water sponge communities near offshore drilling operations as worthy of study. This is a concern given that oil and gas exploration and potential production operations are moving into deeper shelf slope and off-shelf waters.

In the early 2000s, the Fund supported an effort to map sponges and corals across the East Coast Offshore in collaboration with Fisheries and Oceans Canada. Since then, in the context of the marine protected areas initiative, the federal government has undertaken considerable research and policy development in relation to coral and sponge communities, such as the regulatory guidance for industry on how to mitigate impacts to these sensitive species and their habitats. In fall 2025, ESRF plans to launch a call for proposals related to ground truthing the oil and gas drill cuttings dispersion model and refinement of the Predicted No Effects Threshold (PNET) as it pertains to corals and sponges.

Decommissioning and Abandonment

Decommissioning offshore petroleum production programs requires extensive knowledge as it is highly technical, occurs in harsh and vulnerable offshore environments and involves a complex regulatory regime. There have only been three offshore petroleum production projects to decommission in Canada, all of which have been in the Canada-Nova Scotia offshore. Gathering lessons learned from this experience would be useful for industry, regulators and governments preparing for future decommissioning and abandonment requirements in the Canada-Newfoundland and Labrador (C-NL) offshore.

ESRF can help fill knowledge gaps related to decommissioning and abandonment, especially as they apply to operators in the C-NL who could be approaching this stage of the production life cycle in the coming years. The Fund is interested in supporting projects that examine lessons learned and best practices in other jurisdictions, and how they might apply in the C-NL offshore context; research related to marine environmental vulnerabilities and sensitivities, including the potential effects of decommissioning and legacy equipment on the benthic environment; and best practices for stakeholder engagement. Initial studies on decommissioning and abandonment will provide the basis for making potential funding decisions on broader research programs that may include experimental field work and studies on habitats, species and concerns specific to the C-NL offshore.

Indigenous Knowledge

In 2021, ESRF began funding a three-phase initiative with the Atlantic Policy Congress of First Nations Chiefs Secretariat, aimed at integrating Indigenous Knowledge Systems (IKS) into decision making processes relating to offshore oil and gas development in Atlantic Canada. Phase I (ESRF Project 2020-01S) was completed in 2022, and Phase II began in 2023 and continues to be supported by the Fund. Indigenous Knowledge continues to be a key research priority for the Fund, serving as the focus of the three-phased IKS initiative and a cross-cutting theme in other ESRF projects. For example, ESRF project 2019-01S seeks to address Indigenous communities' concerns about the implications of offshore oil and gas development for Atlantic Salmon survival at sea.

Research funded under this priority seeks to build capacity within Indigenous communities to actively participate and provide recommendations and advice to the offshore oil and gas sector in regulatory processes and identify Indigenous knowledge-based research gaps related to environmental, social and cultural impacts of offshore oil and gas activities.

Biodiversity

Since oil and gas production operations began on the East Coast in the 1990s, there has been concern over the effect of oil spills on seabirds and the possible issue of seabird attraction to offshore oil and gas installations. At least fifteen years ago, the fishing industry began raising concerns about potential impacts of seismic activity on commercial fish species. Now, through a greater scientific understanding of deep-water species and their role in the ecosystem, the Fund is exploring the potential effects of drill cuttings on coral and sponge communities near offshore drilling operations as worthy of study. Seabirds, commercially and culturally important fish species, marine mammals, and vulnerable deep-water benthos are just some of the topics addressed under the Fund's biodiversity priority.

Seabirds

The Fund has supported several studies on seabirds over the years, including updating baseline data on seabird population distributions; considering the effects of hydrocarbons on seabird feathers; estimating seabird mortality due to oil spills; and, examining seabird attraction to offshore platforms. While the current projects on seabirds are wrapping up, the Fund will maintain this as a research priority given the value of building onto the significant amount of data and work that has been completed to date.

Marine Fish and Mammals

With respect to marine fish and mammals, the Fund has supported research that examines impacts of industrial activities such as seismic noise on species and measuring species distribution and behaviour using various tools such as acoustic, telemetry and satellite tagging. The Fund's current research priorities related to marine mammals and fish continue to build on past ESRF sponsored studies with a focus on the need to improve understanding of species distributions in the deeper waters of the C-NL offshore. This is of high importance as the oil and gas industry moves to explore and develop operations in the deep waters off the continental shelf. Equally important, especially in the context of climate change, is building an understanding of fish spawning and rearing areas in the

offshore and how they may change in the coming decades in response to changing oceanographic parameters such as temperature, salinity and acidity.

Marine Noise

Another cross-cutting issue is that of marine noise and its impact on commercially and culturally significant and vulnerable species. Stemming from the ongoing concerns of fishers on the effect of seismic surveys on catch rates of commercial fish species, the Fund continues to support research on the potential effects of 2D and 3D seismic on groundfish in offshore Newfoundland and Labrador. The Fund is also supporting the publication of previously funded research related to underwater soundscapes and sound propagation across the East Coast offshore, with the objective of improving sound propagation modelling. Over the years, ESRF projects have established strong partnerships with stakeholders throughout the conduct of research on marine noise, and the Fund continues to prioritize this area to maximize the value of these partnerships and build upon the data already collected to continue to fill knowledge gaps on the impacts of noise from offshore oil and gas activities on marine species and environments. These soundscape projects have gained recognition in the international scientific community, creating opportunities for researchers to showcase their work to a wide audience and reflect the contributions of the Fund.

Current Research Projects 2024-2025

Assessment of Potential Risks of Seismic Surveys to Affect Groundfish Resources

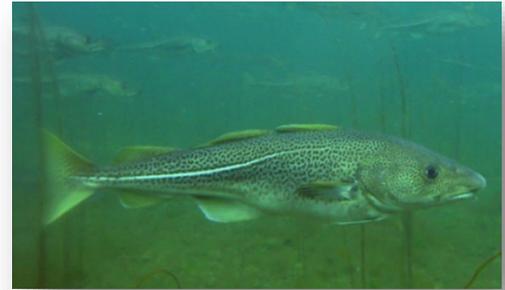
Project Lead: Dr. Corey Morris

Organization: Fisheries and Oceans Canada

ESRF Funding: \$6,171,500 (FY 2018/19 – FY 2025/26)

Project Description

Oil and gas exploration in the Atlantic offshore has been very active at a time when the fishing industry in the same area is becoming increasingly reliant on rebuilding the groundfish fishery. The effects of ocean noise on marine life are a growing concern globally, however the specific impacts including non-lethal effects and how they are manifested remain poorly defined for many species including fish. This project incorporated several different measurement metrics to examine potential risks of seismic air gun surveys to affect commercially important and culturally important groundfish species, including commercial catchability, and fish behaviour. A key value of this research project is how it has incorporated realistic season-long 3D seismic surveying with wide-ranging environmental conditions assessing several groundfish species.



Credit: Corey Morris, DFO

Atlantic salmon in the Eastern Canadian offshore regions: timing, duration and the effects of environmental variability and climate change

Project Lead: Dr. Martha Robertson

Organization: Fisheries and Oceans Canada

ESRF Funding: \$11,789,453 (FY 2020/21 – FY 2026/27)

Project Description

Of the Atlantic Canadian fish species, Atlantic salmon has one of the most complex life histories and migration patterns, including routes from freshwater rivers to as far as the Labrador Sea. The objective of this project is to understand migration behaviours and determine when, where and for how long Atlantic salmon are in the Eastern Canadian offshore regions. A highlight of the project's field work is the capture and tagging of over 4000 salmon from over 30 different rivers, with the support of an extensive network of partnerships with Indigenous communities across Atlantic Canada. The project has been analyzing the acoustic and satellite detections collected during the project, and a report describing which populations use the Regional Assessment Area, including when and for how long, is near completion. Results from this project will support regulatory decision making in Canada's areas of offshore oil and gas activity and are beginning to be communicated, including an article about the oceanographic modelling analysis which has been published in the journal *Progress in Oceanography*.



Credit: Kyle Denny

Using tracking technologies to evaluate overlap of Leach’s storm-petrel with offshore oil and gas platforms

Project Lead: Dr. April Hedd

Organization: Environment and Climate Change Canada

ESRF Funding: \$561,500 (FY 2021/22 – FY 2024/25)



Source: Laura MacFarlane Tranquilla

Project Description

Seabird attraction to offshore oil and gas installations and vessels in the East Coast offshore has been an issue for more than 20 years. A basic understanding of the nature and consequences of seabird attraction and interaction with offshore oil and gas platforms is still unavailable. This is of particular concern for Leach’s Storm-petrels, as this species is thought to be one of the species most at risk. The focus of this project is to use emerging miniaturized tracking technologies to rigorously quantify the spatial overlap of breeding Leach’s Storm-petrel marine habitat with offshore oil and gas operations in the region. The data collected from this project has contributed to a robust tracking dataset that more accurately represents the spatial distribution for key Leach’s Storm-petrel colonies in Newfoundland and throughout Atlantic Canada. This project concluded in March 2025, and its new, rigorously analysed data will enhance our understanding of Leach’s Storm-petrel habitat use in space and time in the Atlantic Canada offshore and contribute significantly to the regulatory decisions that need to be made with respect to the effect of offshore platforms on this species’ populations.

Integrated population modeling to understand the drivers of declining Leach’s Storm-petrels in Eastern Canada

Project Lead: Dr. Greg Robertson

Organization: Environment and Climate Change Canada

ESRF Funding: \$430,000 (FY 2022/23 – FY 2024/25)



Project Description

Newfoundland and Labrador host the largest breeding colonies of Leach's Storm-petrel in the world and this species is considered most at risk of attraction and stranding at offshore installations in Atlantic Canada. Colony surveys have noted large declines in Atlantic Canada and adult survival rates are well below expected levels. This project developed an integrated population model of Leach’s Storm-petrel on the East coast of Canada, which is fully described in a supporting [website](#). Results indicate that regional declines are being influenced by multiple factors, but the overall impact of anthropogenic mortality is still uncertain. This project was completed in March 2025. Project results are informing the Leach's Storm Petrel Conservation Plan for Eastern North America, and [one paper directly stemming from this project](#) and [another closely associated with this project](#) have been published. A third paper describing the integrated population model itself will be published later in 2025.

Literature reviews on seabird attraction to artificial light and seabird detection methods for East Coast offshore oil and gas installations

Project Lead: Justin So
Organization: WSP E&I Canada Limited
ESRF Funding: \$265,790 (FY 2021/22 – FY 2023/24)

Project Description

The objective of this project was to carry out comprehensive and complementary literature reviews; one focused on the attraction of seabirds to artificial light and the second focused on methods of seabird detection that can prove potentially useful in an offshore oil and gas installation context. The project builds on previous reviews of the scientific literature brought up to date with current peer reviewed literature, other relevant published and unpublished data and information and engagement with stakeholders and recognized experts. The project expired in March 2024 and pending final review, the technical reports will be published on the ESRF website.



Source: WSP

Using undersea autonomous glider technology to monitor marine mammals and ship noise in the eastern Beaufort Sea

Project Lead: Dr. Stephen Insley
Organization: Wildlife Conservation Society Canada
ESRF Funding: \$153,635 (FY 2021/22 – FY 2025/26)

Project Description

Populations of bowhead whales have been difficult to find during the Beaufort Sea annual surveys. Researchers suspect that individuals may have migrated later and/or further offshore than usual, or even the possibility that some did not migrate at all. The use of an autonomous glider will enable continuous sound recording along acoustic transects and allow data collection much further offshore than is possible with currently deployed acoustic receivers. The results will inform whether the bowhead migration route and timing has shifted further offshore and later in the season. In addition, the results will also supplement the core-use areas posted for both beluga and bowhead whales used in the Canadian Coast Guard Notice to Mariners (NOTMAR), whale avoidance broadcasts and serve as important information for any future assessments of potential oil and gas activities in the area.



Source: Paul Nicklin

Exploring diversity in Indigenous Knowledge Systems: Community engagement by the Atlantic Regional Aboriginal Aquatic Resource and Oceans Management (AAROM) Organizations

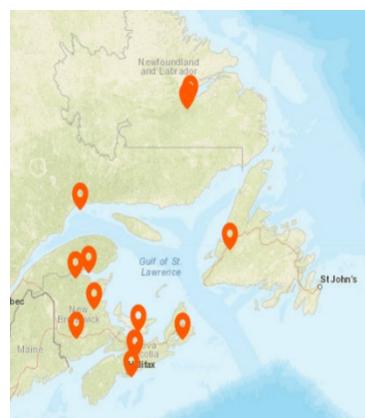
Project Lead: Melissa Nevin

Organization: Atlantic Policy Congress of First Nations Chiefs Secretariat

ESRF Funding: \$973,379 (FY 2023/24 – FY 2026/27)

Project Description

Conceptualized as a knowledge system, Indigenous Knowledge Systems (IKS) captures the understanding that knowledge is acquired in many ways. The knowledge itself is derived from practice, adaptation, and transmission, and is informed by values derived from an underlying belief system (Giles, Fanning, Denny, & Pau, 2016; White, 2012). IKS are dynamic, complex, ongoing, comprehensive, but more importantly, they are based on ways of knowing that are uniquely tribal and place based. As such, there may be as many IKS as there are Indigenous nations (Kovach, 2009). This project will provide support and resources to Atlantic Regional Aboriginal Aquatic Resource and Oceans Management (AAROM) organisations on Canada's East Coast to gather information, best practices, and to develop regional approaches to address the use of IKS in informed decision-making in the offshore.



Source: APC – AAROM locations

ESRF Publication Fund

ESRF Funding: \$125,000 (FY 2023/24 – FY 2025/26)

Project Description

Technical reports from ESRF sponsored projects from 1985 onward are publicly available on the [ESRF publication page](#). However, these reports are sometimes considered grey literature by the regulatory community and not always taken into consideration when it comes to supporting or making regulatory decisions. The purpose of the ESRF Publication Fund is to support the publication of past ESRF-sponsored research into peer-reviewed, open access literature, and ensure that ESRF-funded research is recognized by regulators, stakeholders and the public as a reliable and credible source of research and scientific information to support regulatory decision-making in Canada's offshore areas.



Source: freepik.com



Did you know? Researchers funded by ESRF are ***encouraged*** to publish their research in peer-reviewed journals. While a final ESRF Technical “blue cover” Report is a required output for ESRF-funded projects, it should not create a barrier to publishing results in the scientific literature.

Financial Statements

Statement of Financial Position

The ESRF Management Board is responsible for the presentation of the annual financial statements to the Minister of Energy and Natural Resources and the Minister of Northern Affairs pursuant to the *Canada Petroleum Resources Act*.

Levies are collected from oil and gas companies that hold licenses for exploration and development in Canada's frontier lands. In accordance with the *Canada Petroleum Resources Act*, when a license is issued, levies are collected for the year of issuance and the two years prior.

Table 1 below shows the financial information for the annual expenditures for ESRF in the 2024-2025 fiscal year. All expenses are paid out of the fiscal year in which they are invoiced.

In 2024-2025, the total study expenditures for the ESRF amounted to \$3,125,496, administration costs for this period were \$222,949 and revenues collected through levies were \$2,152,896, with a total of \$743,578 remaining in outstanding levies in the southern account as of March 31, 2024 (refer to Table 2 for details).

Table 1 – ESRF Expenditures April 1, 2024, to March 31, 2025 (in dollars)

REGION	OPENING CASH BALANCE APRIL 1, 2024 (\$)	TOTAL REVENUE, LEVIES & RETURNS (\$)	ADMINISTRATION COSTS (\$)	STUDY PROGRAM COSTS (\$)	CLOSING BALANCE MARCH 31, 2025 (\$)
SOUTH REGION	4,615,174	2,152,896	222,949	3,120,368	3,424,753
NORTH REGION	51,187	0	0	5,128	46,059
TOTAL	4,666,361	2,152,896	222,949	3,125,496	3,470,812

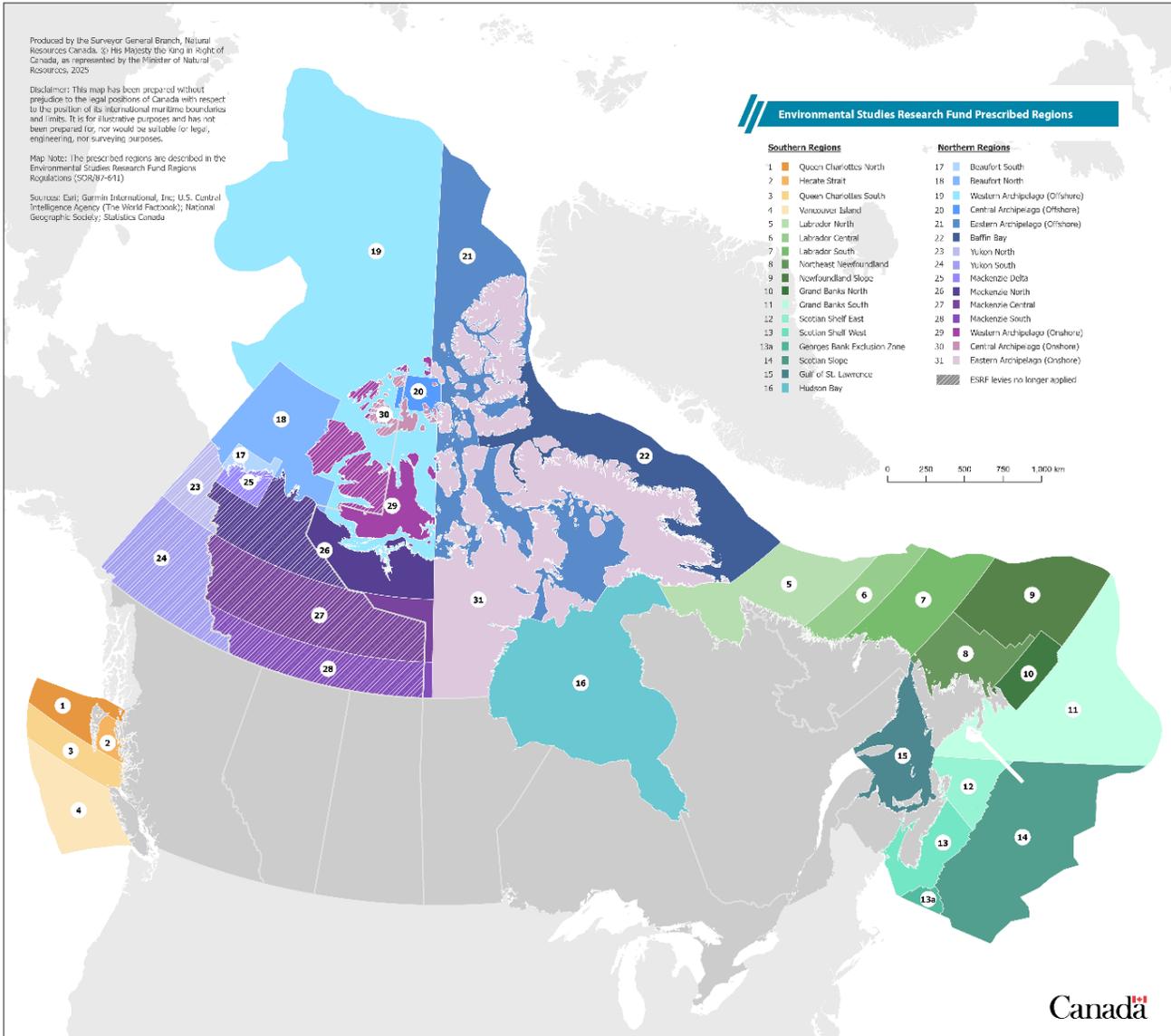
Note: The Public Accounts of Canada closing balances for the southern and northern regions at the end of the 2024-2025 fiscal year may differ. Given accounting processes at year-end, the distribution of Administration Costs between the regional accounts is not possible until the new fiscal year. The Administration Costs in this table account for the redistribution of funds between the accounts.

Table 2 – ESRF Regional sub accounts – Levy income 2024-2025 (in dollars)

REGION	LEVY RATE Levy 36 2024-2025 (\$/Hectare)	REVENUES Levy 36 2024-2025 (\$)	REVENUES Back Levies (\$)	TOTAL LEVY INCOME (\$)
1	Queen Charlottes North	0	-	-
2	Hecate Strait	0	-	-
3	Queen Charlottes South	0	-	-
4	Vancouver Island	0	-	-
5	Labrador North	0.8477	6,158	6,158
6	Labrador Central	0.8477	12,866	12,866
7	Labrador South	0.8477	4784	4,784
8	Northeast Newfoundland	0.8477	-	-
9	Newfoundland Slope	0.8259	1,176,182	1,176,182
10	Grand Banks North	0.8378	643,674	643,674
11	Grand Banks South	0.8477	203,381	203,381
12	Scotian Shelf East	0.6982	80,980	80,980
13	Scotian Shelf West	0.6982	-	-
14	Scotian Slope	0.6982	-	-
15	Gulf of St. Lawrence	0.7599	24,871 ⁱ	24,871
16	Hudson Bay	0	-	-
	Total South		\$2,152,896	\$0
17	Beaufort South	0	-	-
18	Beaufort North	0	-	-
19	Western Archipelago- Offshore	0	-	-
20	Central Archipelago- Offshore	0	-	-
21	Eastern Archipelago- Offshore	0	-	-
22	Baffin Bay	0	-	-
23	Yukon North	0	-	-
24	Yukon South	0	-	-
25	Mackenzie Delta	0	-	-
26	Mackenzie North	0	-	-
27	Mackenzie Central	0	-	-
28	Mackenzie South	0	-	-
29	Western Archipelago- Onshore	0	-	-
30	Central Archipelago- Onshore	0	-	-
31	Eastern Archipelago- Onshore	0	-	-
	Total North		\$0	\$0
	TOTAL			

ⁱ The amount showing for this region reflects a retroactive payment relating to an outstanding invoice from 2020-21. Total levies in the amount \$743,578 remain outstanding in this region as of March 31, 2025.

Annex 1: ESRF Prescribed Regions



Note: The ESRF Regional map was updated in 2025 by Natural Resources Canada's Surveyor General Branch and is consistent with the ESRF Regions Regulations (SOR/87-641).

Annex 2: Open Call for Research & Study Selection Process

ESRF uses an open call for research proposals to select new projects. These calls are based on research priority areas previously identified by the ESRF Management Board. Open calls are posted on the [Fund's website](#) and distributed via the ESRF mailing list. Anyone interested in being added to the mailing list can contact the [ESRF Secretariat](#).

Eligible funding recipients must be:

- Legal entities validly incorporated or registered in Canada, including:
 - For profit and not for profit organizations such as companies, industry associations, research associations, etc.
 - Indigenous organizations and groups
 - Community groups
 - Canadian post-secondary institutions
- Federal, provincial, territorial, regional and municipal governments and their departments, agencies and research centres.

The study selection process follows four distinct phases



Annex 3: Bibliography of Past ESRF Publications, 1985 - 2023

Since its inception in 1983, the ESRF has published over 220 reports and related studies.

*All published reports and studies are available for
download through the ESRF website:
<https://www.esrfunds.org/publications>*

Bibliographies

- 010 Goodwin, C.R., J.C. Finley and L.M. Howard. *Ice Scour Bibliography*. July 1985. 99 p.
- 026 Young, S.C. *Bibliography on the Fate and Effects of Arctic Marine Oil Pollution*. March 1986. 212 p.
- 030 Howard, L.H. *Icebergs: A Bibliography Relevant to Eastern Canadian Waters*. May 1986. 277 p.
- 050 Finley, J.C. and C.R. Goodwin. *The Training and Employment of Northern Canadians: An Annotated Bibliography*. November 1986. 206 p.
- 130 Hunter, S.P. and J.H. Vandermeulen. *Bibliography of Aquatic Oil Pollution Fate and Effects*. December 1994. CD-Rom.
- 136 *Coastal Resource Inventory: Great Northern Peninsula*. Not published.

Environmental Effects and Monitoring

- 001 McLaren, P.L. and R.A. Davis. *Distribution of Bowhead Whales in the Beaufort Sea*. Summer 1983. February 1985. 62 p.
- 005 Thomas, D.J., W.S. Duval, C.S. Johnston, G.S. Lewbel, A. Birdsall, M.S. Hutcheson, G.D. Greene, R.A. Buchanan and J.W. MacDonald. *Effects Monitoring Strategies and Program for Canada's East Coast*. May 1985. 88 p.
- 009 Harwood, L.A. and A. Borstad. *Bowhead Whale Monitoring Study in the Southeast Beaufort Sea*. July-September 1984. August 1985. 99 p.
- 021 Tidmarsh, W.G., R. Ernst, R. Ackman and T. Farquharson. *Tainting of Fishery Resources*. January 1986. 174 p.
- 025 Kingsley, M.C.S. *Distribution and Abundance of Seals in the Beaufort Sea, Amundsen Gulf & Prince Albert Sound*. 1984. February 1986. 16 p.
- 028 Thomson, D.H., D.B. Fissel, J.R. Marko, R.A. Davis and G.A. Borstad. *Distribution of Bowhead Whales in Relation to Hydrometeorological Events in the Beaufort Sea*. March 1986. 119 p.
- 036 Norton, P. and L.A. Harwood. *Distribution, Abundance and Behavior of White Whales in the Mackenzie Estuary*. June 1986. 73 p.
- 057 Duval, W.S. (ed.). *Distribution, Abundance and Age Segregation of Bowhead Whales Relative to Industry Activities and Oceanographic Features in the Beaufort Sea, August-September 1985*. March 1987. 117 p.

- 060 Yunker, M.B. and R.W. Drinnan. *Dispersion and Fate of Oil from Oil-based Drilling Muds near Sable Island, N.S.* January 1987. 169 p.
- 063 Drinnan, R.W., M. Yunker, A. Gillam, N. Charchuk and S.R.H. Davis. *Options for Treatment and Disposal of Oil-based Mud Cuttings in the Canadian Arctic.* February 1987. 167 p.
- 066 Nenninger, R.D. *Monitoring a Sump Containing Drilling Mud with High Salt Content.* March 1987. 47 p.
- 075 Cross, W.E. and B. Humphrey. *Monitoring the Long-Term Fate and Effects of Spilled Oil in an Arctic Marine Subtidal Environment.* August 1987. 120 p.
- 080 Ernst, R.J., W.M.N. Ratnayake, T.E. Farquharson, R.G. Ackman and W.G. Tidmarsh. *Tainting of Finfish by Petroleum Hydrocarbons.* September 1987. 150 p.
- 089 Ford, J.K.B., J.C. Cabbage and P. Norton. *Distribution, Abundance, and Age Segregation of Bowhead Whales in the Southeast Beaufort Sea, August-September, 1986.* November 1987. 53 p.
- 090 Wainwright, P.F. and B. Humphrey. *Analysis of Sediment Data from the Beaufort Shorebase Monitoring Program, 1982-1984.* March 1988. 78 p.
- 093 Hardy BBT Limited and Stanley Associates Engineering Ltd. *Handling and Disposal of Waste Drilling Fluids from On-Land Sumps in the Northwest Territories and Yukon.* February 1988. 58 p.
- 101 Erickson, P., B. Fowler, and D. Thomas. *Oil-based Drilling Muds: Off Structure Monitoring-Beaufort Sea.* June 1988. 188 p.
- 102 Nakashima, D.J. and D.J. Murray. *The Common Eider of Eastern Hudson Bay: A Survey of Nest Colonies and Inuit Ecological Knowledge.* November 1988. 174 p.
- 109 Lawrence, M.J. and S.L. Davies (eds.). *Wildlife and Wildlife Habitat Restoration and Compensation in the Event of an Oil Spill in the Beaufort Sea.* March 1993. 88 p.
- 110 Hurlbut, S.E., D.P. French and B.J. Taylor. *Evaluation of the Potential Effects of Major Oil Spills on Grand Banks Commercial Fish Species as a Result of Impacts on Eggs and Larvae.* January 1991. 53 p.
- 117 Sekerak, A.D., N. Stallard and W.B. Griffiths. *Distribution of Fish and Fish Harvests in the Nearshore Beaufort Sea and Mackenzie Delta During Ice-Covered Periods, October-June.* November 1992. 157 p.
- 118 Thomas, D.J. *Considerations in the Design of Effects Monitoring Strategies: Beaufort Sea Case Study.* January 1992. 54 p.
- 121 S.L. Ross Environmental Research Limited and Ledrew, Fudge and Associates. *The Risk of Tainting Flatfish Stocks During Offshore Oil Spills.* January 1993. 67 p.
- 122 Mackinnon, D.S. and P.A. Lane. *Saltmarsh Revisited – The Long-Term Effects of Oil and Dispersant on Saltmarsh Vegetation.* September 1993. 24 p.
- 123 Duval, W.S. *Proceedings of a Workshop on the Beaufort Sea Beluga February 3–6, 1992, Vancouver, B.C.* March 1993. 26 p.
- 134 Richard, P.R., A.R. Martin and J.R. Orr. *Study of Summer and Fall Movements and Dive Behaviour of Beaufort Sea Belugas, Using Satellite Telemetry. 1992–1995.* March 1987. 34 p.
- 137 Hatch Associates Limited and Griffiths Muecke Associates. *Workshop on Cumulative Environmental Effects Assessment and Monitoring on the Grand Banks and Scotia Shelf.* 2000. 61 p.
- 138 Montevecchi, W.A., F.K. Wiese, G. Davoren, A.W. Diamond, F. Huettmann and J. Linke. *Seabird Attraction to Offshore Platforms and Seabird Monitoring from Offshore Support Vessels and other Ships Literature Review and Monitoring Design.* 1999. 56 p.

- 139 Thomson, D. H., J. W. Lawson and A. Muecke. *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, September 7–8 2000*. April 2001. 92 p.
- 142 ERIN Consulting Ltd. and OCL Services Ltd. *Sheens Associated with Produced Water Effluents – Review of Causes and Mitigation Options*. March 2003. 46 p.
- 143 Mortensen, Pål B., Lene Buhl-Mortensen, Susan E. Gass, Donald C. Gordon Jr., Ellen L.R. Kenchington, Cynthia Bourbonnais and Kevin G. MacIsaac. *Deep-Water Corals in Atlantic Canada: A Summary Of ESRF-Funded Research (2001–2003)*. December 2004. 43 p.
- 144 Christian, J. R., A. M. Mathieu, D. H. Thomson, D. White and R. A. Buchanan. *Effect of Seismic Energy on Snow Crab (Chionoecetes opilio)*. November 2003. 106 p.
- 145 Racca, R. G., D. E. Hannay, R. B. Murray, W. B. Griffiths, and M. Muller. *Testing Fish Deterrents for Use Under-Ice in the Mackenzie Delta Area*. March 2004. 118 p.
- 146 Buchanan, R. A., J. A. Cook and A. M. Mathieu. *Environmental Effects Monitoring for Exploration Drilling*. December 2003. 86 p.
- 147 Dillon Consulting Limited with DMT Cordah. *Pollution Prevention Opportunities in the Offshore Oil and Gas Sector – Final Report*. October 2003. 73 p.
- 148 Dillon Consulting, BMT Cordah Ltd. *Standardizing the Reporting of Air Emissions to Ambient Air from Atlantic Canada Offshore Petroleum Activities*. March 2003. 52 p.
- 149 Trudel, K. *Workshop on Dispersant Use in Eastern Canada*. 2004. 109 p.
- 150 Martec Limited, CEF Consultants Ltd, DRDC Atlantic, St. Francis Xavier University. *Effects of Pipelines/Gathering Lines on Snow Crab and Lobster*. December 2004. 61 p.
- 151 Lee, K., H. Bain, and G.V. Hurley, (eds.). *Acoustic Monitoring and Marine Mammal Surveys in the Gully and Outer Scotian Shelf Before and During Active Seismic Programs*. December 2005. 154 p + appendices.
- 152 Ellis & Associates. *Drilling Waste Management – Recommended Best Practices*. January 2005. CD-Rom.
- 154 AMEC Earth & Environmental. *Inuvialuit Settlement Region Drilling Waste Disposal Sumps Study*. February 2005. CD-Rom.
- 155 Dillon Consulting Limited and Salmo Consulting. *Beaufort-Delta Cumulative Effects Project*. February 2005. CD-Rom.
- 156 Moulton, V.D., and B.D. Mactavish. *Recommended Seabird and Marine Mammal Observational Protocols for Atlantic Canada*. March 2004. 80 p.
- 158 Christian, J. R., A. Mathieu, and R. A. Buchanan. *Chronic Effects of Seismic Energy on Snow Crab (Chionoecetes opilio)*. March 2004. 45 p.
- 159 Kemper, J. Todd. *Vegetation Changes on Seismic Lines from Recent (2000–2001) and Historic (1970–1986) Seismic Programs in the Mackenzie Delta Area*. May 2006. 29 p.
- 160 Armsworthy, S.L., A. Muecke and P.J. Cranford. *Workshop on Offshore Oil and Gas Environmental Effects Monitoring*, Bedford Institute of Oceanography, Dartmouth, Nova Scotia, May 26-30. November 2003. 125 p.
- 161 Kavik-AXYS Inc. *Review of the Ikhil Gas Development and Pipeline Regulatory and Environmental Process: Lessons Learned*. January 2007. 49 p.

- 162 Harwood, L., T. G. Smith, H. Melling. *Assessing the Potential Effects of Near Shore Hydrocarbon Exploration on Ringed Seals in the Beaufort Sea Region 2003-2006*. November 2007. 103 p.
- 163 Kavik-AXYS Inc. *Biophysical Research Requirements for Beaufort Sea Hydrocarbon Development*. August 2008. 125 p.
- 164 Goodard, D.R., L. Peters, R. Evans, K. Wautier, P. A. Cott, B. Hanna and V. Palace. *Development of histopathology tools to assess instantaneous pressure change-induced effects in rainbow trout (*Onchorhynchus mykiss*) early life stages*. 2008. 93 p.
- 167 Ollerhead, L.M.N., M.J. Morgan, D.A. Scruton and B. Marie. *Mapping the Spawning Times and Locations for Ten Commercially Important Fish Species Found on the Grand Banks of Newfoundland*. 2004. 42 p.
- 168 Ollerhead, L.M.N. *Mapping Spatial and Temporal Distribution of Spawning Areas for Eight Finfish Species Found on the Scotian Shelf*. June 2007. 54 p.
- 169 Ollerhead, L.M.N., J. Lawrence. *Mapping the Spatial Distribution of Juveniles for Nine Selected Finfish Species Found in the Gulf of St. Lawrence*. June 2007. 64 p.
- 170 Payne, J.F., J. Coady and D. White. *Potential Effects of Seismic Airgun Discharges on Monkfish Eggs (*Lophius americanus*) and Larvae*. July 2009. 32 p.
- 171 Payne, J.F., C.A. Andrews, L.L. Fancey, A.L. Cook and J.R. Christian. *Pilot Study on the Effects of Seismic Air Gun Noise on Lobster (*Homarus americanus*)*. 2007. 34 p.
- 172 Antoniuk, T., S. Kennett, C. Aumann, M. Weber, S. Davis Schuetz, R. McManus, K. McKinnon and K. Manuel. *Valued Component Thresholds (Management Objectives) Project*. March 2009. 164 p.
- 173 AMEC Earth & Environmental. *Assessment of Drilling Waste Disposal Options in the Innuvialuit Settlement Region*. December 2009. 140 p.
- 174 SENES Consultants Limited and G. Guthrie. *Bosworth Creek (NWT) Literature Review*. October 2009. 28 p.
- 175 AECOM. *Considerations in Developing Oil and Gas Industry Best Practices in the North*. April 2009. 36 p.
- 176 Centre for Offshore Oil, Gas and Energy Research and K. Lee. *Environmental Persistence of Drilling Mud and Fluid Discharges and Potential Impacts*. December 2009. 35 p.
- 178 Courtenay, S.C., M. Boudreau and K. Lee. *Potential Impacts of Seismic Energy on Snow Crab: An Update to the 2004 Peer Review*. April 2009. 181 p.
- 181 Waugh, D., T. Inkpen., M. Hingston., S. Keast., J. McPherson., D. Worthy., G. Forbes. *Sable Island Air Monitoring Program Report: 2003-2006*. June 2010. 56 p.
- 182 Moulton, V.D., M. Holst. *Effects of Seismic Survey Sound on Cetaceans in the Northwest Atlantic*. June 2010. 28 p.
- 183 Fifield, D.A., K. P. Lewis, C. Gjerdrum, G. J. Robertson, R. Wells. *Offshore Seabird Monitoring Program*. December 2009. 68 p.
- 185 Collins, L.A., C.D. Murray and R.T. Stainton. *Bosworth Creek Water Quality Data Study: Final Report*. May 2011. 69 p.
- 186 Fifield, D.A., K.D. Baker, R. Byrne, G.J. Robertson, C. Burke, H.G. Gilchrist, A. Hedd, M.L. Mallory, L. McFarlane Tranquilla, P.M. Regular, P.A. Smith, A.J. Gaston, W.A. Montevecchi, K.H. Elliot, R. Philips. *Modelling Seabird Oil Spill Mortality Using Flight and Swim Behaviour* December 2009. 46 p.

- 187 Moulton, V.D. and W.J. Richardson. *Proceedings of a Workshop on Seismic Sound Propagation Characteristics in the Beaufort Sea, Calgary, Alberta, July 14-15, 2009*. July 2010, 47 p.
- 188 French, E.B.S., Ollerhead, L.M.N. *Mapping the Spatial Distribution of Juvenile and Spawning Activities for Five Selected Finfish Species off the Labrador and Northeastern Newfoundland Shelf*. December 2010. 31 p.
- 190 CEF Consultants Ltd. *Report of a Workshop on Fish Behavior in Response to Seismic Sound*. November 2011. 109 p.
- 192 Bayne, Dr. E., H. Lankau and J. Tigner. *Ecologically-based criteria to assess the impact and recovery of seismic lines: The importance of width, regeneration, and seismic line density*. December 2011. 103 p.
- 193 H. Niu and K. Lee. *Refinement and Validation of Numerical Risk Assessment Models for use in Atlantic Canada*. March 2013. 147 p.
- 195 Stantec Consulting Ltd. *Effects of Offshore Oil and Gas Production on Air Quality in Canada's East Coast Offshore Areas*. June 2013. 372 p.
- 196 Courtenay, S., M. Lyons, M. Boudreau, L. Burrige and K. Lee. *Biological Effects of Produced Water from Offshore Canadian Atlantic Oil and Gas Platforms on Various Life Stages of Marine Fish*. September 2013. 109 p.
- 197 Payne, J.F., C.D. Andrews, J. Hanlon, J. Lawson, A. Mathieu, A. Wadsworth, and B. French. *Effects of Seismic Air-Gun Sounds on Lobster (Homarus americanus): Pilot Laboratory Studies with (i) a Recorded Track from a Seismic Survey and (ii) Air-Gun Pulse Exposures over 5 Days*. December 2015. 14 p.
- 199 Hoover, C., C. Hornby, M. Ouellette, V. Torontow, K. Hynes and L. Loseto. *Arrival and distribution of beluga whales (Delphinapterus leucas) along the Mackenzie Shelf: Report on the spring aerial surveys*. January 2016. 38 p.
- 202 Greenan, B.J.W, D. Hebert, D. Cardoso, E.L. Kenchington, L. Beazley and A. van der Baaren. *Ocean Currents and Benthic Habitat in the Sackville Spur Region*. February 2016. 144 p.
- 203 Majewski, A.R., K.D. Suchy, S.P. Atchison, J. Henry, S.A. MacPhee, W. Walkusz, J. Eert, M. Dempsey, A. Niemi, L. de Montety, M. Geoffroy, C. Giraldo, C. Michel, P. Archambault, W.J. Williams, L. Fortier and J.D. Reist. *Uniqueness of Fishes and Habitat Utilization in Oil & Gas Lease Blocks Relative to Non-Lease Areas in the Canadian Beaufort Sea*. February 2016. 99 p.
- 204 Environment and Climate Change Canada. *Beaufort Regional Coastal Sensitivity Atlas*. December 2014. 63 p.
- 211 J.W. Lawson, C. Gomez, G.L. Sheppard, A.D. Buren, A-L. Kouwenberg, G.A.M. Renaud and H.B. Moors-Murphy. *DFO Mid-Labrador Marine Megafauna Visual and Acoustic Study*. November 2017. 142 p.
- 212 M. Gibson, P. Chem, P. Eng and S. Craig. *Source Apportionment of Volatile Organic Compounds and Aerosols on Sable Island*. July 2018. 257 p.
- 213 F.J.M. Davidson, G.C. Smith, Y. Lu, V. Bouchet, A. Methot, J. Lei, L. Zhai, J. Xy, G. Holden, F. Dupont, S. Higginson, W. Yu and P. Pellerin. *Development, Validation and Implementation of an Operational Ocean Forecasting System for the Grand Banks and Orphan Basin for Daily Operational Delivery at the Canadian Meteorological Centre*. Nov. 2019. 85 p.

- 214 LGL Limited and Oceans Limited. *Exposure of Juveniles of Four Marine Fish Species to Hydrocarbon Discharges from Oil and Gas Production Platforms on the Grand Banks*. Dec 2018. 167 p.
- 215 J. Delarue, K. Kowarski, E. Maxner, J. MacDonnell and B. Martin. *Acoustic Monitoring along Canada's East Coast: August 2015 to July 2017*. 2018. 204 p.
- 216 G. Warner, A. MacGillivray and B. Martin. *Analysis of Acoustic Particle Motion Data from the Svein Vaage Airgun Study*. 2018. 100 p.
- 217 T. J. Deveau, J. Delarue, B. Martin and K. Lucke. *Transmission Loss Modelling of Seismic Airgun Sounds: Predicted Received Levels, with Frequency Weighting, off Atlantic Canada*. 2018. 679 p.
- 218 ArcticNet Inc. *Integrated Beaufort Observatory*. July 2019. 474 p.
- 219 H.R. Smith, D.P. Zitterbart, O. Boebel and V.D. Moulton. *Assessing the Quality of Marine Mammal Detections Using Three Complementary Methods*. July 2019. 120 p.
- 220 C.J. Morris, D. Cote, B. Martin, R. Saunders-Lee, M. Rise, J. Hanlon, J. Payne, P.M. Regular, D. Mullowney, J.C. Perez-Casanova, M.G. Piersiak, J. Xu, V. Han, D. Kehler, J.R. Hall, S. Lehnert, E. Gonzalez, S. Kumar, L. Bradbury and N. Paddy. *An Assessment of the Potential Risks of Seismic Surveys to Affect Snow Crab Resources*. February 2021. 141 p.
- 221 B. de Jourdan, L. Burrige and C.J. Bridger. 2021. *Investigation of the Effects of East Coast Canada Water Accommodated Fraction and Chemically Enhanced Water Accommodated Fraction on Early Life Stages of Commercially Harvested Marine Species*. 339 p.

Environmental Loading and Design

- 111 Maddock, B., G. Khng and M. Gerin. *Verification of CSA Code for Fixed Offshore Steel Structures*. October 1992. 92 p.
- 112 Allyn, N., W.J. Cichanski and P. Adebar. *Verification of CSA Code for Fixed Offshore Concrete Structures*. November 1992. 62 p.
- 116 Traynor, S. and S.R. Dallimore. *Geological Investigations of Proposed Pipeline Crossings in the Vicinity of Taglu and Niglintgak Islands, Mackenzie Delta, NWT*. May 1992. 115 p.
- 131 Allyn, N., et al. *Environmental Loading Studies for the CSA Offshore Structures Code*. January 1995. 86 p.
- 135 Dallimore, S.R. and J.V. Matthews, Jr. *The Mackenzie Delta Borehole Project*. April 1997. CD-Rom.

Frontier Social and Economic Issues

- 002 Gardner, M. *Interaction Between the Fisheries & the Oil and Gas Industry off the East Coast of Canada*. March 1985. 70 p.
- 003 Cleland Dunsmuir Consulting Ltd., Community Resource Services Cooperative Ltd., Maritime Resource Management Services and H. Mills. *Petroleum-Related Socio-Economic Issues – Atlantic Canada*. March 1985. 101 p.
- 004 Usher, P.J., D. Delancey, G. Wenzel, M. Smith and P. White. *An Evaluation of Native Harvest Survey Methodologies in Northern Canada*. April 1985. 249 p.
- 015 Gardner, M. *Construction Projects – Frame of Reference for Oil & Gas Developments in Atlantic Canada*. November 1985. 86 p.
- 024 DPA Group Inc. and Intergroup Consulting Economics Ltd. *Northern Employment and Training in the Oil and Gas Industry*. March 1986. 105 p.

- 040 Storey, K., J. Lewis, M. Shrimpton and D. Clark. *Family Life Adaptations to Offshore Oil and Gas Employment*. July 1986. 207 p.
- 046 Constable, G.A., R.M. Griggs, N.E. Millbank and M.S. Sinclair. *Business Opportunities Related to Oil and Gas Exploration and Production in Northern Canada*. August 1986. 269 p.
- 047 IDP Consultants Ltd. *Public Information on Oil and Gas Activities*. September 1986. 170 p.
- 067 Pinfold, T. *An Evaluation of the Utility of Large-Scale Economic Models for Socio-Economic Impact Assessment*. March 1987. 34 p.
- 071 Atlantic Consulting Economists Limited. *Local Business Adaptation to East Coast Offshore Energy Development*. July 1987. 57 p.
- 085 Groves, S., W.G. Green and J.R. Harper. *Queen Charlotte Islands Coastal Zone: Digital Mapping and Linked Data-Base System*. September 1988. 115 p.
- 087 Storey, K. and M. Shrimpton. *Planning for Large-Scale Construction Projects: A Socio-Economic Guide for Communities, Industry and Government*. October 1987. 78 p.
- 153 Fedirchuk, G. J., S. Labour, N Nicholls, FMA Heritage Resources Consultants. *Traditional Knowledge Manual Volume 1 & 2: Literature Review and Evaluation and Using Traditional Knowledge in Impact Assessments*. August 2005. CD-Rom
- 179 Kavik-Axys Inc. 2010. *Review of Tuktoyaktuk Harbour as a Base for Offshore Oil & Gas Exploration and Development*. August 2010. 100p.
- 189 Sikimuit Environmental Management Ltd. *An Assessment of Predicted Socio-Economic Impacts of Labrador Shelf and Gas Activity on Labrador Communities and Individuals*. December 2011. 156 p.
- 222 S. Denny, M Nevin and A. Searle, 2022. *Laying the Groundwork: Enhancing Cross Cultural Understanding Through Two-Eyed Seeing*. 237 p.

Ice – Icebergs – Ice Detection

- 008 Ryan, J.P., M. Harvey and A. Kent. *The Assessment of Marine Radars for the Detection of Ice and Icebergs*. August 1985. 127 p.
- 011 Gammon, P.H. and J.C. Lewis. *Methods for the Fracturing of Icebergs*. July 1985. 91 p.
- 014 Buckley, T., B. Dawe, A. Zielinski, S. Parashar, D. MacDonald, H. Gaskill, D. Finlayson and W. Crocker. *Underwater Iceberg Geometry*. September 1985. 216 p.
- 016 Rossiter, J.R., L.D. Arsenault, E.V. Guy, D.J. Lapp, E. Wedler, B. Mercer, E. McLaren, and J. Dempsey. *Assessment of Airborne Imaging Radars for the Detection of Icebergs*. September 1985. 320 p.
- 022 Ryan, J.P. *Enhancement of the Radar Detectability of Icebergs*. January 1986. 83 p.
- 035 Harvey, M.J. and J.P. Ryan. *Further Studies on the Assessment of Marine Radars for the Detection of Icebergs*. June 1986. 82 p.
- 038 Marko, J.R., D.B. Fissel and J.R. Birch. *Physical Approaches to Iceberg Severity Prediction*. July 1986. 104 p.
- 042 Anderson, D.G., D. McDonald, P. Mitten, S. Nicholls and D. Tait. *Management of Small Ice Masses*. August 1986. 195 p.
- 044 Hay & Company Consultants Inc. *Motion and Impact of Icebergs*. September 1986. 146 p.

- 045 Canpolar Consultants Ltd. *Iceberg Detection by Airborne Radar: Technical Review and Proposed Field Program*. September 1986. 235 p.
- 048 Davidson, L.W., W.I. Wittman, L.H. Hester, W.S. Dehn, J.E. Walsh and E.M. Reimer. *Long-Range Prediction of Grand Banks Iceberg Season Severity: A Statistical Approach*. October 1986. 163 p.
- 052 de Margerie, S., J. Middleton, C. Garret, S. Marquis, F. Majaess and K. Lank. *Improvement of Iceberg Drift Forecast – Grand Banks*. November 1986. 86 p.
- 081 Warbanski G. and E. Banke. *Evaluation of a Modified Water Cannon System to Control Small Iceberg Masses*. August 1987. 142 p.
- 091 Klein, K., J.P. Ryan and M. House. *Ryan Evaluation of Two Search Radar Systems for Detection of Ice Masses*. January 1988. 240 p.
- 104 Terry, B.F., D.J. Lapp, C.L. Balko, K.E. Hancock and P.A. Lapp. *Ice Data Management System*. July 1989. 151 p. + appendices.
- 113 Finlayson, D.J., J. Bobbitt, P. Rudkin and I.J. Jordan. *Iceberg Trajectory Model: Real-Time Verification*. March 1992. 47 p.
- 115 Pilkington, G.R., M.C. Hill, M. Metge and D. McGonigal. *Beaufort Sea Ice Design Criteria –Acquisition of Data on EIFs*. October 1992. 154 p.
- 125 Davidson, L.W. *Long-Range Ice Forecasting System (LRIFS) Applied for the Beaufort Sea*. May 1993. 58 p.
- 132 Rossiter, J.R., et al. *Remote Sensing Ice Detection Capabilities – East Coast*. April 1995. 172 p.
- 133 Davidson, S.H. and A. Simms. *Characterization of Iceberg Pits on the Grand Banks of Newfoundland*. February 1997. 162 p.
- 198 Lu, Y., G. Smith, M. Buehner and T. Carrieres. *Improving the Accuracy of the Short-term Ice and Ocean Forecasts in the Beaufort Sea*. January 2016. 32 p.

Oil Spill Research and Countermeasures

- 006 Belore, R.C. *Effectiveness of the Repeat Application of Chemical Dispersants on Oil*. June 1985. 66 p.
- 012 Harper, J.R. and E.H. Owens. *Shoreline Monitoring Programs for Oil Spills-of-Opportunity*. September 1985. 50 p.
- 013 Abdelnour, R., T. Johnstone, D. Howard and V. Nisbett. *Laboratory Testing of an Oil-Skimming Bow in Broken Ice*. January 1986. 60 p.
- 018 S.L. Ross Environmental Research Ltd. *Testing of an Oil Recovery Concept for Use in Brash and Mulched Ice*. January 1986. 43 p.
- 019 Wotherspoon, P., J. Swiss, R. Kowalchuk and J. Armstrong. *Oil in Ice Computer Model*. December 1985. 129 p.
- 031 Harper, J.R. and B. Humphrey. *Stranded Oil in Coastal Sediments: Permeation in Tidal Flats*. April 1986. 23 p.
- 033 Harper, J.R. *Practical Insights into Decision-Making for Shoreline Cleanup of Oil Spills*. May 1986. 44 p.
- 034 Belore, R.C. *Development of a High-Pressure Water Mixing Concept for Use with Ship-Based Dispersant Application*. May 1986. 51 p.

- 051 S.L. Ross Environmental Research Ltd. and Energetex Engineering. *Decision-Making Aids for Igniting or Extinguishing Well Blowouts to Minimize Environmental Impacts*. November 1986. 119 p.
- 053 MacNeill, M.R. and R.H. Goodman. *Oil Motion During Lead Closure*. January 1987. 13 p.
- 058 S.L. Ross Environmental Research Ltd. and Hatfield Consultants Ltd. *Countermeasures for Dealing with Spills of Viscous, Waxy Crude Oils*. October 1986. 59 p.
- 062 S.L. Ross Environmental Research Ltd. and D.F. Dickins Associates Limited. *Field Research Spills to Investigate the Physical and Chemical State of Oil in Pack Ice*. February 1987. 116 p.
- 064 Brown, H.M. and R.H. Goodman. *In Situ Burning of Oil in Ice Infested Waters*. February 1987. 27 p.
- 068 Belore, R.C. *Mid-Scale Testing of Dispersant Effectiveness*. April 1987. 82 p.
- 069 Hatfield Consultants Ltd. *Spills-of-Opportunity Research*. February 1987. 124 p.
- 070 Lane, P., M.J. Crowell, D.G. Patriquin and I. Buist. *The Use of Chemical Dispersants in Salt Marshes*. May 1987. 100 p.
- 072 Nawwar, A., A. Godon, H.W. Jones, E. Yeatman, J. Ohuja, M.B. Frish and I. Arvin. *Acoustical Methods for Measuring Thickness of Oil on Water*. April 1987. 57 p.
- 074 Bennett, J., I.R. McAllister, L. Pertile and D. McQuillan. *Removal of Stranded Oil from Remote Beaches by In-Situ Combustion*. March 1987. 122 p.
- 077 Comfort, G. *Analytical Modelling of Oil and Gas Spreading Under Ice*. August 1987. 57 p.
- 078 Reimer, E.M. and J.R. Rossiter. *Measurement of Oil Thickness on Water from Aircraft: A. Active Microwave Spectroscopy. B. Electromagnetic Thermoelastic Emission*. August 1987. 82 p.
- 079 S.L. Ross Environmental Research Ltd. and L.C. Oddy Training Design Ltd. *The Development of a Canadian Oil-Spill Countermeasures Training Program*. May 1987. 194 p.
- 082 Belore, R.C. and D. MacKay. *Drop Size and Dispersant Effectiveness: Small-Scale Laboratory Testing*. July 1987. 31 p.
- 083 Thorpe, J.W. and K.E. Hellenbrand. *Microbial Degradation of Hydrocarbon Mixtures in a Marine Sediment Under Different Temperature Regimes*. September 1987. 48 p.
- 084 S.L. Ross Environmental Research Limited and D. MacKay. *Laboratory Studies of the Behaviour and Fate of Waxy Crude Oil Spills*. December 1988. 250 p.
- 086 Pelletier, E. and C. Brochu. *Prototype, Mesoscale Simulator for the Study of Oil Weathering Under Severe Conditions*. November 1987. 55 p.
- 092 Trudel, B.K., B.J. Jessiman, S.L. Ross and J.J. Swiss. *Guide to Dispersant – Use Decision Making for Oil Spills in the Canadian Southern Beaufort Sea*. February 1988. 227 p.
- 095 D.F. Dickins Associates Ltd., S.L. Ross Environmental Research Ltd. and Seakem Oceanography, Ltd. *Evaluation of Hovercraft for Dispersant Application*. February 1988. 57 p.
- 098 Goodman, R.H. *Simple Remote Sensing System for the Detection of Oil on Water*. December 1988. 32 p.
- 100 Swiss, J.J. and N. Vanderkooy. *Beaufort Sea Dispersant Trial*. July 1988. 44 p.
- 106 S.L. Ross Environmental Research Ltd. *Proceedings of a Workshop to Establish Canadian Marine Oil Spill Research and Development Priorities*. April 1990. 56 p.
- 108 Harper, J.R. *Development of a National Directory of Canadian Oil Spill Specialists*. October 1991. 62 p.

- 119 Guenette, C. *Modification and Testing of a Portable Reciprocating Kiln for Cleaning Oiled Sand and Gravel*. March 1992. 46 p.
- 120 Guenette, C. *Development and Testing of a Prototype Rock Washer for Cleaning Oiled Beach Cobble*. January 1991. 45 p.
- 124 Englehardt, R. *Oil Base Drilling Mud Toxicity*. December 1989. 47p. (Unpublished)
- 126 Koski, W.R., S.D. Kevan and W.J. Richardson. *Bird Dispersal and Deterrent Techniques for Oil Spills in the Beaufort Sea*. December 1993. 122 p.
- 127 Dempsey, J., A. Simms, J. Harper, E. Lambert, and R. Hooper. *West Coast Newfoundland Oil Spill Sensitivity Atlas*. March 1995. 62 p.
- 140 Jacques Whitford Environment Limited. *Atlas of Ecologically and Commercially Important Areas in the Southern Gulf of St. Lawrence*. 2001. CD-Rom.
- 141 *Oil Pollution Seabird Mortality Assessment on the Sable Island Bank*. Not published.
- 165 Newfoundland and Labrador Environmental Industry Association, L. Gratton & Associates and the Institute for the Advancement of Public Policy, Inc. *An Integrated Approach to Oil Spill Preparedness and Response*. May 2008. 60 p.
- 166 Jacques Whitford Stantec Limited. *Cuttings Treatment Technology Evaluation*. July 2009. 100 p.
- 177 SL Ross Environmental Research Ltd., DF Dickins Associates LLC., Envision Planning Solutions Inc. *Beaufort Sea Oil Spills State of Knowledge Review and Identification of Key Issues*. November 2010. 126p.
- 194 C-CORE. *Strategic Plan for Oil Spill Research in Canadian Arctic Waters*. July 2013. 38 p.
- 200 SL Ross Environmental Research Limited, IMG Golder Corporation Environmental Consulting and Golder Associates. *Roadmap for Planning Controlled Oil Spill Countermeasures Research in the Canadian Beaufort Sea*. June 2015. 158 p.
- 201 National Research Council Canada and Fisheries and Oceans Canada - Centre for Offshore Oil, Gas and Energy Research. *Biodegradation of Naturally and Chemically Dispersed Crude Oils and Scotian Shelf Condensate from Atlantic Canada*. October 2015. 109 p.
- 205 Fifield, D. A., S. Avery-Gomm, L. A. McFarlane Tranquilla, P.C. Ryan, C. Gjerdrum, A. Hedd, M.G. Fitzsimmons, and G. J. Robertson. *Effectiveness of Observers in Visually Detecting Dead Seabirds on the Open Ocean*. March 2017.
- 207 Amec Foster Wheeler Environment & Infrastructure. *Upstream Oil and Gas Waste Stream Study*. July 2016. 239p.
- 209 Khelifa, A., B. Fieldhouse and C. Brown. *Quantitative Assessment of the Interaction between Beaufort Sea Crude Oils and Mackenzie River Delta Suspended Sediments*. March 2017. 72 p.
- 210 SL Ross Environmental Research Limited. *Plan for Experimental Field Study of the Application of Mineral Fines to Oil Spills in Pack Ice*. August 2016.

Sea Bottom Ice Scour

- 007 El-Tahan, M., H. El-Tahan, D. Courage and P. Mitten. *Documentation of Iceberg Groundings*. May 1985. 162 p.
- 032 Shearer, J., B. Laroche and G. Fortin. *Canadian Beaufort Sea 1984 Repetitive Mapping of Ice Scour*. May 1986. 93 p.

- 037 Comfort, G. and B. Graham. *Evaluation of Sea Bottom Ice Scour Models*. June 1986. 115 p.
- 039 Woodworth-Lynas, C.M.T., D.W. Bass and J. Bobbitt. *Inventory of Upslope and Downslope Iceberg Scouring*. July 1986. 103 p.
- 043 Geonautics Ltd. *Design of an Iceberg Scour Repetitive Mapping Network for the Canadian East Coast*. March 1987. 45 p.
- 049 Lewis, C.F.M., D.R. Parrott, P.G. Simpkin and J. T. Buckley (eds.). *Ice Scour and Seabed Engineering. Report on Calgary Workshop, February 1985*. November 1986. 322 p.
- 055 Gilbert, G. and K. Pedersen. *Ice Scour Data Base for the Beaufort*. December 1986. 93 p. + appendices.
- 094 Hodgson, G.J., J.H. Lever, C.M.T. Woodworth-Lynas and C.F.M. Lewis (eds.). *Dynamics of Iceberg Grounding and Scouring. Volume I The Field Experiment. Volume II Maps and Charts*. June 1988. 316 p.
- 097 Gilbert, G.R., S.J. Delory and K.A. Pedersen. *Beaufort Sea Ice Scour Data Base (Scourbase)*. Update to 1986. March 1989. 99 p.
- 105 Geonautics Limited. *Regional Ice Scour Data Base Update Studies*. October 1989. 177p. + appendices.
- 107 Davidson, S.H., W.T. Collins and P.G. Simpkin. *An Experiment to Monitor Four Iceberg Scours on the Grand Banks of Newfoundland*. December 1991. 110 p.
- 128 Geonautics Limited. *East Coast Repetitive Seafloor Mapping 1979/1990*. March 1991. 49 p. + appendices.
- 129 Myers, R., S. Blasco, G. Gilbert, and J. Shearer. *1990 Beaufort Sea Ice Scour Repetitive Mapping Program*. March 1996. 147 p + appendices.
- 157 Sonnichsen, G.V., T. Hundert, P. Pocklton and R. Myers. *Documentation of Recent Iceberg Grounding Events and a Comparison with Older Events of Known Age - Northern Grand Banks, Canada*. April 2006. 206 p.
- 208 Woodworth-Lynas, C., S. Blasco, D. Duff, J. Fowler, E.B. İşler, J. Landva, E. Cumming, A. Caines and C. Smith. *Geophysical and geological data compilation outer shelf and upper slope Southern Beaufort Sea: A handbook of geohazard conditions*.

Sediment Transport

- 017 Keith Philpott Consulting Ltd. with Acres Consulting Services Ltd. *Scour Around Seafloor Structures*. April 1986. 225 p.
- 027 Hodgins, D.O., D.A. Huntley, W.D. Liam Finn, B. Long, G. Drapeau and A.J. Bowen. *Sediment Transport – Present Knowledge and Industry Needs*. April 1986. 394 p.
- 029 Plasse, D. *Surficial Geology Surveys on the Scotian Shelf: Compilation of Maps from Government, Industry, University & Foreign Sources*. April 1986. 47 p.
- 041 Hodgins, D.O., G. Drapeau and L.H. King. *Field Measurements of Sediment Transport on the Scotian Shelf - Volume I. The Radio-isotope Experiment*. June 1986. 160 p.
- Hodgins, D.O. and O.J. Sayao - *Volume II. Boundary Layer Measurement and Sand Transport Prediction*. August 1986. 222 p.
- 054 Hodgins, D.O., O.J. Sayao, E.D. Kinsella and P.W. Morgan. *Nearshore Sediment Dynamics –Beaufort Sea*. December 1986. 195 p.

061 Judge, J.T., R.K. Watanabe and J.L. Warner. *Seafloor Stability Study, Inner Scotian Shelf*. May 1987. 88 p.

096 Gillie, R.D. *Beaufort Sea Artificial Island Erosion Data*. May 1988. 119 p.

Waves

020 Brown, R.D., P. Roebber and K. Walsh. *Climatology of Severe Storms Affecting Coastal Areas of Eastern Canada*. February 1986. 233 p.

023 Murray, M.A. and M. Maes. *Beaufort Sea Extreme Wave Studies Assessment*. January 1986. 97 p.

056 Lemon, D.D. *Wind Speeds from Underwater Acoustic Measurements During the Canadian Atlantic Storm Program*. December 1986. 116 p.

059 Dobrocky Seatech Ltd. *Wave Climate Study – Northern Coast of British Columbia*. May 1987. 93 p.

065 LeDrew Environmental Management Ltd. (ed.). *Proceedings of the International Workshop on Wave Hindcasting and Forecasting. Halifax Workshop, September 1986*. February 1987. 370 p.

073 Hodgins, S.L.M. and D.O. Hodgins. *Evaluation of Wave Forecasting Models and Forecast Wind Fields in the Canadian Context*. June 1988. 356 p.

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.

088 Penicka, F.X. *Wave Hindcast Sensitivity*. April 1987. 114 p.

099 Juszko, B.A. *Comparison of Directional Wave Spectra*. July 1988. 227 p.

103 Hodgins, D.O., C.T. Niwinski and D.T. Resio. *Comparison and Validation of Two Shallow Water Spectral Wave Models*. June 1989. 143 p. + appendices.

114 Eid, B.M. and V.J. Cardone. *Beaufort Sea Extreme Waves Study*. March 1992. 143 p.