

# **United States and Canada Northern Oil and Gas Research Forum: Current Status and Future Directions in the Beaufort Sea, North Slope and Mackenzie Delta**

October 28 to 30, 2008  
Marriott Hotel  
820 W 7<sup>th</sup> Ave.  
Anchorage, Alaska

## **Day 1, Tuesday, October 28, 2008**

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|---------------|--|
| 8:30 - 8:40   | <b>Welcome</b>   |
| 8:40 - 9:05   | <b>Opening Remarks</b><br><br>USA – Drue Pearce<br>Federal Coordinator, Office of the Federal Coordinator<br>Alaska Natural Gas Transportation Projects; Washington,<br>D.C.<br><br>Canada – Patrick Borbey,<br>Assistant Deputy Minister,<br>Northern Affairs Organization<br>Indian and Northern Affairs Canada; Ottawa, Ontario                 |
| 9:05 - 9:15   | <b>Purpose of the Forum (Facilitator)</b><br>Setting the stage for the Forum<br>Objectives, agenda and results<br>Key questions for consideration through out the workshop<br>Expectations for wrap up session   |
| 9:15 - 9:40   | <b>Overview of USA Northern Oil and Gas Activities and<br/>Research Programs</b><br>Mead Treadwell, Chairman of the U.S. Arctic Research<br>Commission; Anchorage, Alaska  |
| 9:40 - 10:05  | <b>Overview of Canadian Northern Oil and Gas Activities<br/>and Research Programs</b><br>Ruth McKechnie, Senior Advisor, Northern Oil and Gas Branch,<br>Indian and Northern Affairs Canada; Ottawa, Ontario<br>Natalie Shea, Science and Technology Advisor, Energy Science and<br>Technology Programs, Natural Resources Canada; Ottawa, Ontario |
| 10:05 – 10:20 | <b>Health Break</b>  |

10:20 – 11:20

**Panel: Management Research Needs and Priorities**

**United States**

John Payne, Executive Director of the North Slope Science Initiative

John Goll, Regional Director of Minerals Management Service

**Canada**

Robert Steedman, National Energy Board; Calgary, Alberta

Norm Snow, Executive Director, Inuvialuit Joint Secretariat

**Technical-Engineering**

11:20 - 11:40

**Alaskan Beaufort and North Slope Solid Waste Disposal**

**Under the UIC Program** - Thor Cutler, United States

Environmental Protection Agency; Seattle, Washington

11:40 - 12:00

**Ice Engineering Issues for Beaufort Sea Development -**

Garry Timco, National Research Council of Canada; Ottawa,

Ontario

12:00 - 12:20

**Ice Road Construction and Recovery on Tundra**

**Ecosystems, National Petroleum Reserve, Alaska (NPR-**

**A)** - Scott Guyer, Bureau of Land Management, Alaska State

Office; Anchorage, Alaska

12:20-12:30

**Questions on theme 1**

12:30 - 13:30

**Lunch Hosted by the Government of Canada**

Speaker “ArcticNet” Dr. Martin Fortier, Executive Director

13:30 - 13:50

**Speculation on the Origin and Persistence of Thick**

**Multi-Year Ice in the Arctic-** Humfrey Melling, Fisheries

and Oceans Canada; Sidney, British Columbia

13:50- 14:10

**Creation of Leads and Ridges: What is the Ice**

**Behavior?-** Max Coon, North West Research Associates, Inc.;

Seattle, Washington

14:10- 14:30

**Materials R&D for Northern Pipelines – Integrity,  
Safety, and Environmental Protection in the North-**

Winston Revie, CANMET Materials Technology Laboratory,

Natural Resources Canada; Ottawa, Ontario

14:30 - 14:50

**Questions on theme 1**

14:50 - 15:10

**The Status of Current Technology for Oil Spill Cleanup**

**in Ice** - Ian Buist, S.L. ROSS Environmental Research Limited;

Ottawa, Canada

- 15:10 - 15:30 Health Break
- 15:30 - 15:50 **Detection of Oil on and Under Ice: Phase III  
Evaluation of Airborne Radar System Capabilities in  
Selected Arctic Spill Scenarios** –John Bradford, Boise State  
University; Boise, Idaho
- 15:50 - 16:10 **The Oil Spill Recovery Institute: Present and Future  
Work in the Arctic** - W. Scott Pegau, Oil Spill Recovery  
Institute; Cordova, Alaska
- 16:10 – 16:30 **ERMA: A New High Resolution Environmental Data  
Display and Management System for Oil Spill Planning  
and Response** - Amy Merten, Co-Director, NOAA Coastal  
Response Research Center; Silver Spring, Maryland
- 16:30 - 16:50 **Oil Spill Preparedness, Response and Countermeasures  
Planning in the Arctic** - Steve Potter, S.L. Ross Environmental  
Research Limited; Ottawa, Ontario
- 16:50- 17:10 **Empirical Weathering Properties of Oil in Ice and Snow**  
- Ian Buist, S.L. Ross Environmental Research Limited; Ottawa,  
Ontario
- 17:10- 17:20 **Questions on theme 1**
- 17:20 – 18:20 **Poster Session – Meet the Authors of the Posters**

**End of Day 1**

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**Day 2**  
**Wednesday, October 29, 2008**

**Industry Panel**

8:00- 8:45

**USA Industry Research Priorities**

Highlights of current and future development scenarios, research issues and priority areas for future research

Pete Slaiby, General Manager, Alaska, Shell Exploration & Production Company

Geoffrey Haddad, Manager Alaska Exploration, ConocoPhillips Alaska, Inc.

Marilyn Crockett, Director Alaska Oil and Gas Association

8:45 – 9:30

**Canadian Industry Research Priorities**

Highlights of current and future development scenarios, research issues and priority areas for future research

Gary Bunio, VP Operations and COO, MGM Energy, Calgary

Bob Bleaney, Manager Commercial & Regulatory Affairs, ConocoPhillips Canada

Paul Barnes, Manager - Atlantic Canada, Canadian Association of Petroleum Producers

9:30-9:50

Questions

**Socio-cultural/ Socio-economic**

9:50 - 10:10

**Variability in Cross Island (Arctic Alaska) Subsistence Whaling: An Examination of Natural and Anthropogenic Factors**

- Michael Galganitis, Applied Sociocultural Research; Anchorage, Alaska

10:10 - 10:30

**The Study of Ecosystem Services and Sharing Networks to Assess the Vulnerabilities of Communities to Oil and Gas Development and Climate Change in Arctic Alaska**

- Gary Kofinas, Director, Resilience and Adaptation Program, School of Natural Resources and Agricultural Sciences, University of Alaska, Fairbanks; Fairbanks, Alaska

10:30 - 10:50

Health Break

- 10:50 - 11:10      **Inuvialuit Community Perspective: Mackenzie Gas Project - Impacts, Planning and Mitigation** - Amanda Cliff, Inuvialuit Regional Corporation; Inuvik, Northwest Territories
- 11:10 - 11:30      **The Environmental Stewardship Framework in the NWT** - David Livingstone, Director, Renewable Resources and Environment, Indian and Northern Affairs Canada; Yellowknife, Northwest Territories
- 11:30 - 11:50      **Caribou Harvest Monitoring in the National Petroleum Reserve-Alaska: Developing Effective Future Mitigation**  
- Stacie McIntosh, Bureau of Land Management, Arctic Field Office; Fairbanks, Alaska
- 11:50- 12:10      **Social and Economic Effects in Canada's Mackenzie Delta Region from the Return of Oil and Gas Activity 2000-2004** - Thom Stubbs, Integrated Environments Limited; Calgary, Alberta
- 12:10- 12:30      **Questions on theme 2**
- 12:30 - 13:30      **Lunch Hosted by the University of Alaska Fairbanks Geographic Information Network of Alaska**  
Speaker “Arctic observation systems, current and planned” Aimee Devaris, U.S. National Weather Service, Alaska Region, Deputy Director; Anchorage, Alaska

### **Biological Sciences**

- 13:30 – 13:50      **Assessing the Potential Effects of Near Shore Hydrocarbon Exploration on Ringed Seals in the Beaufort Sea Region 2003-2006** - Lois Harwood, Fisheries and Oceans Canada; Yellowknife, Northwest Territories
- 13:50 - 14:10      **Populations and Sources of Recruitment in Polar Bears: Movement Ecology in the Beaufort Sea** -Andrew Derocher, Department of Biological Sciences, University of Alberta; Edmonton, Alberta
- 14:10 - 14:30      **Satellite Tracking of the Western Arctic Stock of Bowhead Whales** - Lori Quakenbush, Wildlife Biologist, Alaska Department of Fish and Game; Fairbanks, Alaska

- 14:30 - 14:50                    **Bowhead Whale Feeding Variability in the Western Beaufort Sea - Feeding Observations and Oceanographic Measurements and Analyses** - Carin Ashjian, Woods Hole Oceanographic Institution; Woods Hole, Massachusetts
- 14:50 - 15:10                    **Seasonal Distribution of Canadian Beaufort Beluga Whales** - Pierre Richard, Research Scientist, Marine Mammal Stock Assessment, Arctic Research Division, Fisheries and Oceans Canada; Winnipeg, Manitoba
- 15:10 - 15:30                    **Questions on theme 3**
- 15:30 - 15:50                    Health Break
- 15:50 - 16:10                    **Bowheads and belugas in the Alaska Beaufort and Chukchi Seas: implications of oil and gas development and climate change** - Robert Suydam, Wildlife Biologist, North Slope Borough; Barrow, Alaska
- 16:10 - 16:30                    **Northern Marine Coastal and Ecosystem Studies, CCGS *Nahidik* Fishing Program** - Patricia Ramlal, Arctic Research Division, Fisheries and Oceans Canada; Winnipeg, Manitoba
- 16:30 - 16:50                    **Fish Research in the Western Canadian Arctic in support of Hydrocarbon Development.** - Jim Reist, Arctic Fish Ecology/Assessment, Fisheries and Oceans Canada; Winnipeg, Manitoba
- 16:50 – 17:10                    **Questions on theme 3**

**End of Day 2**

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**Day 3, Thursday, October 30, 2008**

**Biological Sciences**

- 8:00-8:20                    **Timing and location of king eiders staging in the Beaufort and Chukchi Seas.** - Abby Powell, Research Ecologist, U.S. Geological Survey; Fairbanks, Alaska
- 8:20-8:40                    **Subsistence Mapping of Nuiqsut, Kaktovik and Barrow**  
Stephen R. Braund, Braund & Associates, Anchorage, Alaska
- 8:40-9:00                    **Effects of Oil Field Infrastructure on Calf Growth and Survival in the Central Arctic Caribou Herd** - Steve Arthur, Wildlife Biologist, Alaska Department of Fish and Game; Fairbanks, Alaska
- 9:00 - 9:20                    **Science-Based Decision Making: the Mackenzie Gas Project and Environmental Impacts on Birds** - Craig Machtans, Forest Bird Biologist, Western Arctic Unit, Environment Canada; Yellowknife, Northwest Territories
- 9:20-9:40                    **Questions on theme 3**

**Physical Sciences**

- 9:40 - 10:00                    **Seabed Geo-environmental Constraints to Offshore Hydrocarbon Development in Beaufort Sea** - Steve Blasco, Marine Environment Geoscience, Natural Resources Canada; Dartmouth, Nova Scotia
- 10:00 - 10:20                    **Waves and Sediment Mobility in the Southeastern Beaufort Sea** - Steve Solomon, Marine Environment Geoscience, Natural Resources Canada; Dartmouth, Nova Scotia
- 10:20 - 10:40                    **Automated Lagrangian Water Quality Assessment System (ALWAS)** - Robert Shuchman, Co-Director, Michigan Tech Research Institute, Michigan Technological University; Ann Arbor, Michigan
- 10:40 - 11:00                    **Questions on theme 4**
- 11:00 - 11:20                    Health Break

- 11:20 - 11:40                    **Subsidence, Flooding, and Erosion Hazards in the Mackenzie-Beaufort Region** - Don Forbes, Marine Environmental Geoscience, Natural Resources Canada; Dartmouth, Nova Scotia
- 11:40 - 12:00                    **Enhancement of Permafrost Monitoring in the Mackenzie Valley** - Sharon Smith, Permafrost Research Scientist, Natural Resources Canada; Ottawa, Ontario
- 12:00 - 12:20                    **Questions on theme 4**
- 12:20 - 13:40                    Lunch
- 13:40 - 14:00                    **Characterization and Water Use of Alaskan North Slope Lakes** - Daniel White, Institute of Northern Engineering, University of Alaska Fairbanks and Michael Lilly, GW Scientific; Fairbanks, Alaska
- 14:00-14:20                    **Hydrology of the Mackenzie Delta Region** - Philip Marsh, Land Use Impacts on Hydrology and Aquatic Ecosystems, Environment Canada; Saskatoon, Saskatchewan
- 14:20 - 14:40                    **Wind and Wave Hindcasts for the Beaufort Sea** - Val Swail, Climate Data and Analysis, Environment Canada; Downsview, Ontario
- 14:40 - 15:00                    **Regional Hydro-Climatology and Its Relationship to Northern Oil and Gas Development** - Barrie Bonsal, Climate Impacts on Hydrology and Aquatic Ecosystems, Environment Canada; Downsview, Ontario
- 15:00 - 15:20                    **Questions on theme 4**
- 15:20- 17:00                    Wrap Up Everyone (Facilitated)
- 17:00 – 17:15                    Next Steps and Closing Remarks

**End of Day 3**

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## **Poster Session**

**The Posters will displayed be in the second floor hall outside of the meeting room throughout the Forum with authors in attendance from 5:20-6:20 PM, 28 October 2008.**

### **Ichthyoplankton Analysis of the Mackenzie Plume Front**

Sally Wong\*, Michael Papst  
\*Fisheries and Oceans Canada  
[Sally.Wong@dfo-mpo.gc.ca](mailto:Sally.Wong@dfo-mpo.gc.ca)

### **Hotspot and Biogeographic Analysis of Marine Larval Fish in the Nearshore Canadian Beaufort Sea**

Joclyn Paulic  
Fisheries and Oceans Canada  
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### **Sites of Upwelling on the Canadian Beaufort Shelf**

\*William J. Williams and Eddy C. Carmack,  
Fisheries and Oceans Canada.  
Institute of Ocean Sciences, Sidney, British Columbia, Canada  
[Bill.williams@dfo-mpo.gc.ca](mailto:Bill.williams@dfo-mpo.gc.ca)

### **Bowhead Whale Feeding Aggregations in the Canadian Beaufort Sea (2007 – 2008), and Their Role in the Mitigation of Effects of Seismic Underwater Noise**

Lois Harwood\*, Amanda Joynt, and Sue Moore  
\*Fisheries and Oceans Canada  
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Yellowknife, NT X1A 1E2  
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### **Evaluation of Sub-Sea Physical Environmental Data for the Beaufort Sea OCS and Incorporation into a Geographic Information (GIS) Database**

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**Methane hydrates research--the BP-DOE-USGS "Mount Elbert" Test Well**

Ray Boswell, Timothy Collett, and Robert Hunter\*,

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Anchorage, Alaska

[Robert.Hunter@asrcenergy.com](mailto:Robert.Hunter@asrcenergy.com)

**Archaeological Potential of Buried Terrestrial Landforms in the Beaufort Sea: a Review of Existing Geological and Geophysical Data**

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**Oil-in-Ice: Transport, Fate, and Potential Exposure**

Whitney Blanchard, Odd Gunnar Brakstad, Hajo Eicken, Liv-Guri Faksness, Per Johan Brandvik, Øistein Johansen, Nancy E. Kinner, Amy Merten\*, Rainer Lohmann, Scott Pegau, Chris Petrich and Mark Reed

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**Application of high-frequency surface current radar mappers to the Alaskan Beaufort Sea**

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**Temporal Distributions and Patterns of Habitat Use by Black Brant Molting in the Teshekpuk Lake Special Area, Alaska**

Tyler L. Lewis, Paul L Flint, Joel A. Schmutz, and Dirk V. Derksen\*

\*Wetlands and Terrestrial Ecology Branch

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**Effectiveness of Chemical Dispersants on Alaskan Oils in Cold Water**

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**Concept Study: Exploration and Production in Environmentally Sensitive Arctic Areas**

Richard C. Haut\*, Tom Williams, Michael Lilly, Shirish Patil, Yuri Shur, Cathy Hanks and Mikhail Kanevskiy

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**Design and operation of Arctic oilfields to minimize conflicts with grizzly bears**

Richard Shideler

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**ERMA--a new high resolution environmental data display and management system for oil spill planning and response**

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**Using Technology to meet the Arctic Offshore Challenge**

Allan Reece

Shell Program Manager for Arctic R & D

Shell Development Company

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**Ice and Snow helicopter-borne observation sensors used over Canadian Ice-invested Waters showing results of April 2004 and 2008 from the Canadian Beaufort Sea shelf**

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**Transport and fate of spring floodwater from rivers in the Alaskan Beaufort Sea**

John H. Trefry\*, Robert P. Trocine, Carrie M. Semmler, Mathew B. Alkire, Mark A.

Savoie and Robert D. Rember

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**Measuring Bioavailable hydrocarbons in the nearshore Beaufort Sea: comparison of caged mussels (*mytilus trossulus*) and semipermeable membrane devices (SPMDS)**

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Newton III, F. C., Battelle, Carlsbad, USA

[newtonf@battelle.org](mailto:newtonf@battelle.org)

**Population of origin of Arctic cisco (*Coregonus autumnalis*) collected in the Colville River subsistence fishery**

Jennifer L. Nielsen, PhD.  
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U.S. Geological Survey, Alaska Science Center  
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**Under-ice Interaction and Mixing of Spring Floodwaters with Continental Shelf Water in the Alaskan Beaufort Sea**

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**Ecological Change in the Teshekpuk Lake Special Area: Effects on the Distributions of Arctic-nesting Geese**

Joel Schmutz, U.S. Geological Survey, Alaska Science Center, Anchorage, Alaska  
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**Spatial and Temporal Dynamics of Lake Ice on the Arctic Coastal Plain of Alaska**

Chris Arp, Benjamin Jones, and Joel Schmutz, U.S. Geological Survey, Alaska Science Center, Anchorage, Alaska  
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**Landward and Eastward Shift of Alaskan Polar Bear Denning Associated with Recent Sea Ice Changes**

Anthony S. Fischbach, Steven A. Amstrup and David C. Douglas, U.S. Geological Survey, Alaska Science Center, Anchorage, Alaska  
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**Empirical sea ice thickness estimation in the Arctic Ocean**

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D. C. Douglas, U.S. Geological Survey, Alaska Science Center, Juneau Field Station, Alaska  
V. A. Eremeev, and I. N. Mordvintsev, Institute of Ecology and Evolution, Russian Academy of Sciences, Moscow, Russia  
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**Satellite Tracking of the Western Arctic Stock of Bowhead Whales**

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