

VOICEPIPE

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The Newsletter of the BIO-Oceans Association

Claudia Currie Beluga Award Recipient for 2014



Claudia, aboard CSS Acadia, leading a BIO-OA tour in her newest BIO community-building role as Event Coordinator for the BIO-Oceans Association (photo: Kelly Bentham).

The Beluga Award Committee of the BIO Association has announced that the recipient of the 2014 Beluga Award will be Claudia Currie. Claudia doesn't need an introduction to most BIO-OA members or staff at BIO. The list of contributions she has made to the BIO community is long. Her most recent

Forever 'Bluenose' Seminar

by Ron Crocker

1 May 2014

1930 h @ BIO

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Claudia Currie

accomplishment was organizing the very memorable, and skillfully executed events around the BIO 50th Anniversary Celebrations throughout 2012.

An early contribution mentioned in her nomination documentation was as Exhibits Co-chair for the 1998 BIO Open House. She made “sure exhibits that were included were of the highest calibre, and best reflected the diversity of the work undertaken at BIO”.

Claudia was one of the organizers and energetic promoters of the Hypatia Project at BIO. This project was a partnership of public and private sectors in Nova Scotia that was formed to design and implement strategies to improve the representation of women in science and technology (S&T). The Hypatia Project welcomed BIO as its first workplace site in October 2001.

Claudia was “one of the key leaders for the BIO portion of the annual Parker [Street] Christmas Dinner Program” that assembled and delivered more than 1,200 Christmas dinner food boxes to needy families across HRM in recent years. BIO staff have been credited with its success through their participation over many years.

Claudia is an active competitive water skier, volunteering for the Nova Scotia Water Skier Association, and a medal winner at national competitions.

One aspect of Claudia’s contributions in the nomination documentation that did not receive much emphasis was her contributions to the scientific mission of BIO. Claudia’s official job title is Marine Geology Technologist, specializing in the collection and storage of data, metadata, Geographic Information Systems (GIS), Computer Aided Drafting (CAD), support of geologic map production, online access to information, and contributing to various scientific marine and energy project outputs. Her contribution to the science at BIO is not fully represented by her job title. Readers may remember her article “Going to Sea – Some Personal Reminiscences” published in *VoicePipe* 56 (October 2012). The article describes, with her typical good humour, her exploits at sea serving science. In this article, she recognizes many people who supported and mentored her during her career.

Her nomination document ends with “Claudia is especially valuable to the BIO community because of her



Photos: Claudia at work at sea in arctic waters (at right and above); Claudia on water skis in warmer climes (below).



boundless energy and ability to see how issues are actually opportunities to promote BIO in the most positive light to the general public and HRM in particular.”

Phil Moir (a past supervisor) described Claudia in 2006 “as one of those rare people that recognizes the value of people as individuals, and takes the time to develop relationships and partnerships. It is through these relationships that the fabric of ... BIO is strong and the workplace a success.”

Letters of Support

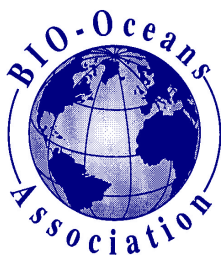
“Claudia is an example of someone who makes a difference at BIO.”

“When Claudia gets involved, she commits 100% of herself and is very enthusiastic. Her commitment and participation in events encourage others to feed off her energy.”

“Her outreach efforts have also increased the profile of BIO in the eyes of the public at large.”

“Claudia is a natural team builder, is dedicated to achieving positive goals and a constant source of inspiration and innovative ideas, and is inclusive of all sectors at BIO.”

“Claudia is an exemplary unsung employee at the Institute who is dedicated to encouraging a sense of the value and role of BIO in the community.”



FROM THE PRESIDENT

Another few months have passed by very quickly since our last edition of *Voicepipe*. As I write this column, another ‘Wednesday Storm’ is forecast. Some may

wonder about Global Warming.

A special thanks goes out to this publication’s editor, Andy Sherin and his editorial team, David Nettleship and Betty Sutherland, for all the time and effort that goes into producing our newsletter, *Voicepipe*.

The biggest news is ‘*The Voyage of Discovery*’ is very close to being published. This issue of *Voicepipe* includes an order form for the VOD. I encourage BIO-OA members to order a copy. A cross section of the first fifty years of BIO’s achievements are chronicled. The dedicated effort which the editorial team (David Nettleship, Don Gordon, Mike Lewis, and Francis Kelly) has put into producing this volume goes beyond words.

On 1 May 2014, a lecture ‘Forever *Bluenose*: Symbol of Nova Scotia’ will be presented by Ron Crocker in the William Ford Auditorium at BIO. This will be a most interesting evening. BIO-OA members are asked to promote this superb event. More information on this event can be found on this page. For this event there is a voluntary donation of \$2.00 per person (children under 13 free) to help offset the costs of refreshments: juices, tea and coffee, along with a selection of cookies.

The Beluga Award will be presented after the BIO-OA Annual General Meeting which will be held in May. This year’s Beluga Award recipient is Claudia Currie (see page 1 & 2).

This summer will see the official opening of ‘The Bernard Pelletier Arctic Fossil Garden’ located in the courtyard. There will be more on this event in the up coming months.

Our Event Coordinator, Claudia Currie, is looking for suggestions for upcoming BIO-OA activities to be held over the summer months and throughout the year. Please contact her with your ideas.

Mike Hughes

In Memoriam

James Harold Abriel, died 16 February 2014, chemical technician, Marine Environmental Science Division, DFO, BIO.

BIO-OA “SPRING CELEBRATION” and SPECIAL SEMINAR

For All Enthusiasts of the Sea, Sailing, & the *Bluenose*

Forever ‘*Bluenose*’: Between and Beyond the Covers

Speaker: Ron Crocker

Author, Sailor, and ‘*Bluenose*’ Aficionado

William Ford Auditorium
Bedford Institute of Oceanography
1 Challenger Drive, Dartmouth, NS

Thursday, 1 May 2014 (1930 h, 7:30 PM)

The general public is invited to this seminar

Ron Crocker, experienced sailing skipper and northern waters cruiser, takes us on a journey that charts the storied history of Nova Scotia’s famous schooner – the SV *Bluenose* – from her launch in 1921 to fish the Grand Banks of Newfoundland and race against the fastest American schooners of the day to her tragic demise and loss off Haiti in 1946. But as Canada’s most famous ship and emblematic of the sailing championship of the fishing fleets of the North Atlantic, a replica, *Bluenose II*, was built in the same Smith and Rhuland shipyards in Lunenburg and launched in 1963 to satisfy the public nostalgia for the lost golden age of sail. After almost half a century of first promoting beer and then tourism in Nova Scotia, *Bluenose II* needed to be ‘restored’, and in September 2012 a virtually new *Bluenose II* was launched. It is the story of the reconstruction of *Bluenose* that Ron Crocker is going to tell us about through his lecture presentation and by his recently published book ‘*Forever Bluenose: A Future for a Schooner with a Past*’. Accompanying Ron on this venture will be his good friend Mark Doucette, the official *Bluenose II* restoration photographer. Together, they will treat us to an insightful and unique overview of the building and restoration of a schooner legend and the shipbuilders involved with the construction.

There will be time available, before (1930-2000 h) and after the lecture (2100-2130 h), to talk to our guest speaker and *Bluenose* photographer Mark Doucette, and ask specific and/or general questions. Of course, you’ll also have the opportunity of purchasing a signed copy of ‘*Forever Bluenose*’!

For additional information call: David Nettleship (phone: 826-2360; e-mail: dnnlundy@navnet.net).

The Top 5 Challenges Facing the New NOAA Administrator¹

Editor's note: Kathryn Sullivan received her Ph.D. from Dalhousie University in 1978 and was a frequent visitor to BIO.

On 6 March 2014, the Senate confirmed the appointment of Dr. Kathryn Sullivan to be the new administrator of the National Oceanic and Atmospheric Administration (NOAA). Sullivan's background — a Ph.D. in geology, a career as an astronaut, and service as an oceanographer in the U.S. Naval Reserve — is ideally suited to the challenge of leading the agency responsible for the management of the United States' oceans, fisheries, and the National Weather Service.

Yet despite her ample qualifications and obvious acumen, she may well look back and find that training for her space walk was easier than preparing to take the helm of NOAA. By any estimation, NOAA faces massive challenges. In no particular order, here are five of the biggest issues facing the incoming NOAA administrator:

Rebalancing the NOAA portfolio

While there's no question that the United States (US) government desperately needs to upgrade its weather satellite systems, we can't continue to take this funding away from core missions such as fishery and marine protected species management, ocean observation and monitoring, and pollution response.

Modernizing the National Weather Service

Extreme weather events are becoming increasingly frequent, destructive, and costly. NOAA has made great strides in hurricane prediction capabilities during the past two decades. In addition to saving lives, these investments have led to real cost reductions.

Adapting to a changing ocean

Mounting evidence shows that oceans absorb much of the heat trapped by the thickening layer of carbon dioxide in our atmosphere. In addition to rapid warming, our ocean's pH balance is changing. Seawater today is acidifying at a rate faster than anything the planet has seen in more than 300 million years.

Coordinating use of ocean space

In 2010, President Barack Obama issued an executive order establishing a National Ocean Policy and the National Ocean Council. If the policy is to demonstrate its true potential, NOAA will have to play a primary role in ensuring this eminently sensible collaboration remains solvent.



Enhancing fisheries' Profitability and sustainability

NOAA has effectively ended overfishing in the US setting science-based annual catch limits in all domestic fisheries by 2011. Nevertheless, serious challenges remain to ensure the future health of our fishing industry and



the fish populations that sustain it. Environmentalists, fishermen, and regulators are largely in agreement that the best way to alleviate these concerns is to improve the science used to establish these limits.

Conclusion

Dr. Sullivan faces enormous challenges as she assumes control of an agency tasked with tracking the complex phenomena of the atmosphere and with managing America's ocean spaces — which cover an area larger than the country's entire landmass. Let's hope the unique perspective she gained observing our planet from the distant reaches of outer space will provide her the vision to rise to the occasion.

¹An edited version of an article by Michael Conathan and Shiva Polefka published by the Centre for American Progress, 6 March 2014 <http://www.americanprogress.org/>

No science, no true democracy

by Andy Sherin

Dr. Scott Findlay, co-founder of ‘Evidence for Democracy’ and Associate Professor of Biology at the University of Ottawa, laid his cards on the table in his address to a packed Ondaatje Hall at Dalhousie University on 5 March 2014. His talk ‘Governing in the Dark: Evidence, Accountability and the Future of Canadian Science’ was the third in a national series of lectures entitled ‘Lives of Evidence’ sponsored by Situating Science and co-sponsored in Halifax by Dalhousie University’s Department of Physics and Atmospheric Science, Evidence for Democracy, and the Canadian Centre for Ethics in Public Affairs.

Dr. Findlay’s first card was the science card. “I am a scientist. Why? Three reasons.” First, science is “the ultimate intellectual challenge”. Second, scientists embrace values like “good health, economic prosperity, clean water and air, and social justice and equity”. Science is a pursuit of knowledge that is necessary to sustain these values. Lastly, “science teaches us – or rather, ought to teach us - to be skeptical – even about our own science”. Scientists ask for the evidence that supports any claim.

Dr. Findlay’s second card was his belief in decision-making informed by science. He paraphrased Thomas Huxley who wrote in 1893 “the method of scientific investigation is nothing but the expression of the necessary mode of the working of the human mind”.

“The goal of ‘Peace, order and good government’ enshrined in Canada’s constitution depends critically on the gathering, careful evaluation, and appropriate use of evidence by government” was his third card. He illustrated his point with an analogy to a physician treating disease – “If the diagnosis is wrong, the treatment usually fails”. Dr. Findlay went on to quote Allan Gregg, former pollster for the Progressive Conservative party, “More than anything else, societal progress has been advanced by enlightened public policy that marshals our collective resources toward a larger public good. Over time, we discovered that effective solutions can only be generated when they correspond to an accurate understanding of the problems they are designed to solve. Evidence, facts and reason form the *sine qua non* of not only good policy, but good government.”

Dr. Findlay put still another card on the table. He men-

tioned Thomas Jefferson’s belief that democracy demanded an educated and informed electorate. “Democracy is rooted in the twin principles of transparency and accountability”, he said. Governments should bring forward evidence that decisions are likely to meet the stated goals. “To repudiate evidence-informed decision-making is to govern in the dark”, he suggested.

Dr. Findlay’s final card, was the trust card. “Blind faith in government is not only unscientific, it is dangerous”, he said. It is not the blind trust card but rather, the earned trust card. “Contemporary society is riven by the malaise of mistrust: mistrust of politicians, mistrust of scientists, mistrust of one another”, he stated. To regain the public trust as scientists we must provide the re-



Dr. Scott Findlay stresses a point in his lecture ‘Governing in the Dark’ at Dalhousie University, Halifax, Nova Scotia.

quired evidence.

Dr. Findlay suggested there was a unique place for public interest science conducted by government. “Federal government science is that which directly informs - or rather, ought to inform - programs, policies, laws and regulations intelligently (one hopes) designed to sustain healthy bodies, healthy minds, healthy environments, and healthy economies.” Only governments have the infrastructure and, more importantly, the fiduciary responsibility, to conduct this sort of scientific research.

Dr. Findlay claimed we are currently experiencing what might be called a retreat – if not a flight – from evidence informed decision-making. He provided several examples of the government decisions at odds with scientific evidence including the government’s opposition to supervised drug injection sites, the demise of the mandatory long-form census and amendments to the Fisheries Act.

This trend along with the reduction in investment in public interest science and constraints on government scientists communicating their science is not in the interest of Canadians.

So what might be done?

Dr. Findlay answered “We now have Evidence for Democracy, a non-partisan organization that advocates for government decision-making informed by the best available evidence, a thriving democracy where citizens are informed and engaged and all levels of government are both – from an evidence perspective at least – transparent and accountable, and a national culture that values both science and evidence”. But more is needed.

What can scientists do?

He suggested that scientists might be partially to blame for the declining health of public interest science – “We have, collectively, relaxed our vigilance, and it shows”. He suggested that scientists need to become vocal advocates for public interest science and for evidence-informed decision making. To be an advocate means being political. In his view, being political means simply “we apply the scientific method to problems of political import, that is, problems that resonate in the public space”. Scientists do need to recognize that decision makers do need to consider other factors than scientific evidence. During question period it was suggested that scientists don’t have the skills and are not trained to deal with the political environment or understand the policy making process. Dr. Findlay indicated that in his experience younger scientists were more capable in these areas.

What can politicians do?

Politicians should make the evidence public that has informed decisions without citizens resorting to the Access to Information Act. “Show us the evidentiary beef! And show us all of it, right off the farm, not after preparation for supermarket shelves.”

They should put in place institutions that protect public interest science like establishing a Parliamentary Office for Science and Technology or an independent science audit or report card and “stop treating the public like a bunch of potato heads”.

In commenting on the government’s arguments for the necessity for the Fair Elections Act, Dr. Findlay suggested there were three explanations, the government “[does] not see that such arguments ... have gaping logical flaws ... Or perhaps they do, but figure that we



Dr. Scott Findlay answers a question from the audience in Ondaatje Hall at Dalhousie University in Halifax, Nova Scotia.

won’t. Or perhaps they know it, know we know it, and simply don’t care. All three explanations are disturbing, the latter profoundly so.” During question period, Catherine Abreu of the Ecology Action Centre suggested a fourth even more troubling explanation “They do see, know we see, and know we won’t question”.

What can the public do?

Dr. Findlay suggested members of the public become a scientist by attitude – be sceptical, and demand evidence.

They should think of evidence as a form of insurance, an effective way to ensure that investments in government enterprises are not wasted.

The public should take ownership of science in the public interest. “What sort of science needs to be supported in order to sustain and enhance ... values, for you, your children, and generations to come.”

“What is the future of Canadian public interest science? Or of Canadian democracy for that matter? The two are inextricably linked.” Their fate depends on average Canadians. Dr. Findlay in answering a question after the lecture indicated that he had faith in public intelligence.

“Here at least the evidence is clear: no science, no evidence; no evidence, no trust; no trust, no true democracy.”



Dr. Alan Longhurst congratulates Dr. Reg Gilbert on the occasion of his retirement in 1985.

A corporate endeavour that has a soul¹

by Andy Sherin with Alan Longhurst

Michael Sinclair asked Alan Longhurst, “When you first came to BIO, what were your original impressions of the institution?” “Very favourable. Very favourable, indeed”, Alan answered, saying that it seemed to him the BIO had an ideal form of organisation with minimal administrative interference with scientific programs – a sort of federal university, in fact.

Alan was born in Plymouth, England, the son of a naval dental surgeon, so he lived his young life around various naval ports. As a young child he was fascinated by creatures on the seashore and in the garden, and his interest in science and natural history (he does not distinguish between the two) took off from there.

He spent four years in the British army, graduating from the Royal Military Academy Sandhurst at the end of the war (1945), and went off to take part in the Allied occupation of Austria, ending up with some exciting times in

Somalia and Abyssinia with the East African forces. He saw wonderful wild places and had “a lovely time”.

After the war, he returned to London for a degree in entomology and a doctorate on the ecology of a group of freshwater ‘living-fossil’ crustaceans. He quickly found employment back in Africa at the West African Fishery Research Institute in Freetown, Sierra Leone, a small outfit with four scientists and a decent little research trawler that always seemed to be broken down. “I spent the first three years working on the ecology of the benthic ecosystem of the shelf from Gambia to Liberia, and from the mangroves out to the shelf edge”, he said. Later, he inherited a mass of unworked data from surveys of demersal fish populations and described the first-order population dynamics of the main demersal species.

A post at the Federal Fisheries Service in Lagos, Nigeria, followed where his colleagues were graduates of the University of Ibadan with whom Alan continued to work on fish population dynamics, but put most of his effort into establishing a program in physical oceanogra-

phy with the assistance of United States AID officials who were organising a survey of the eastern Atlantic and wanted the little Nigerian ship 'Kiara' to participate. This all led, one way or another, to the offer of a post at the Scripps Institution of Oceanography in California and ten years of research on pelagic ecology of the eastern tropical Pacific, and then the directorship of the new NOAA-NMFS lab on the Scripps campus. It was here that Alan encountered, for the first time, the weight of a 'Program Planning and Budgeting System' and found himself spending all his time at meetings and on flights to and from events. This was not what he wanted to do, and to escape, he accepted an appointment at the National Environmental Research Council (NERC) laboratory in Plymouth, but that went rapidly the same way.

"I wasn't very satisfied with the climate in Plymouth. It was already a very bureaucratic organization. Although we were well funded and my responsibility was to build up, from scratch, a team I seemed to spend all my time ... writing.... about what we were going to do next, reporting on what we had done, evaluating stuff, all that sort of thing". Richard Addison was spending some time in Plymouth and suggested that Alan apply for the vacant directorship at the Marine Ecology Laboratory (MEL) at BIO which he did without hesitation. He found the organisation ideal, with very light planning and administrative loads, which allowed him to both run the lab and go to sea to continue his marine studies. He maintained that a research organisation without a director actively engaged in research is dead in the water.

When Alan took over from Bill Ford as Director General (DG) of BIO, he changed the way the DG interacted with the BIO directors: "I wanted to establish a different and very informal rapport with the directors", he said, and undertook to replace the rather formal and occasional management meetings. It was decided that all the directors (AOL, MEL, Personnel, Finance and Institute Facilities, and Mike Keen of the Atlantic Geoscience Centre) would meet with him every week for one hour every Tuesday morning. Alan's secretary, Joan Guilderson, received items for the agenda from all participants and recorded decisions.

Alan commented on the 'BIO Open House' in 1980 that attracted 25,000 visitors and mentioned how individual scientists had put together exhibits with leadership from Brian Nicholls and Ed Murray, and visuals provided by Roger Belanger and Art Cosgrove. The new buildings had also opened that year; Alan credited Reg Gilbert as

the person "who held it all together".

However, in the late 1980s, everything changed, and not for the better. A new Deputy Minister (DM), Peter Meybourn, decided to merge the fisheries management and ocean science sectors of DFO. He had been told by the DFO Assistant Deputy Ministers (ADM) for fisheries that they couldn't get the sort of data they needed from BIO, such as temperatures in fishing harbours and that the sort of sophisticated ocean science done at BIO was of no interest to them. Alan spoke about his interview with the DM, who had just informed Ocean Sciences ADM Jerry Ewing, the DG of the Institute for Ocean Sciences in Sidney, BC (Ced Mann) and Quebec Region's Jean Piuze, that their jobs no longer existed. Meybourn suggested I become the ADM Science and organize the merger. I said "... it wasn't what I wanted to do at all because I didn't think it was a very good idea." The others went into retirement, but because Alan had so few years in the pension scheme Meybourn allowed him to go 'back to the bench' as a research scientist, "provided you keep your mouth shut".

Of course, that was only the beginning of the massive changes that replaced the classical line-management structure with the present sectoral management system that removed all authority over their resources from the science groups and – in Alan's opinion – renders an enterprise, such as BIO was conceived to be, unworkable. Alan commented "It seems to me that science like oceanography, and all the related things that go with it, flourishes best in a corporate endeavour that has a sort of soul."

At the end of his interview, Alan recalled a 2002 encounter he had with Peter Clancy, a political scientist at St. Francis Xavier University, who had an interest in the organization of science in Canada. "We walked around the Institute, everywhere, from the depot to the top of AGC. He was totally fascinated by what he saw. My thesis to him was that there was a period in Canada when there existed ... an oceanographic institute attached to a university that had funding and the superstructure and a relative freedom of research, and Canada doesn't have it now...but has something different. I wanted that period in history somehow to be recorded."

¹ This article is one of a series of articles based upon the transcript of interviews conducted in 2003 with past leaders at BIO, records now held in the BIO archives.

Erratum: In *VoicePipe* 61 we erroneously published that the CSS *Acadia* was celebrating her 50th anniversary. She is actually celebrating her 100th anniversary.

Following Hillary's Footsteps in the Himalayas

A short introduction

by Peter Wells

In late September 2013, I travelled to Nepal with my colleague Griff (David Griffiths) to join a trekking expedition in the eastern Himalayas. Having hiked and climbed in various mountain ranges most of my life, this was finally an opportunity to experience the really big 'hills'. A huge landmass once far below the ancient oceans, the Himalayas are the highest, most enchanting, and highly glaciated mountain ranges in the world. Ours was a 22-day tenting trek, called the Hillary Footsteps, supported by a Sherpa guide, porters, a cook, and yaks. It started from the village of Jiri east of Kathmandu and followed the route of the 1953 British Mt. Everest Expedition. We walked eastwards across the grain of Nepal, crossing many rivers separated by verdant, forest-clad foothills of over 3,000 m. After experiencing torrential rainfalls, leeches, wet rocky trails, and many swaying suspension bridges, we finally arrived at the spectacular river valley of the Dunh Koshi Nadi and the Khumbu region. In sunshine, we hiked up and down the steep and challenging ridges above the river gorge, moving northwards to the Sagarmatha National Park and the Sherpa village of Namche Bazaar. After rest and acclimatization, we moved northeast towards Everest and our intended destination, the Everest base camp (EBC). In snow and cold, we reached the isolated village of Dingboche (4,410 m), a day and a half from the EBC, and just beside the Everest, Nuptse and Lhotse massif. Stopped by the threat of deadly avalanches, and running short of time, we returned on the same route, through Tengboche (site of a famous Monastery) and Namche, arriving at Lukla for the flight back to Kathmandu. A fuller account of this weight-reducing venture will be in the September issue!



Photos from top: the author; David Griffiths, Peter and their trekking guide, Jagat Gurang (middle, l to r); a yak carrying supplies for the trek (bottom, right); and the Tengboche Monastery in Khumbu Region of Nepal (bottom, left). Photos by: David Griffiths, Marty Goldstein, and Peter Wells (bottom two).



The Unlikely Pipeline¹

by Ray Grigg

Editor's note: This article is particularly relevant in the context of Dr. Scott Findlay's article 'Governing in the Dark' and the result of the April 2014 plebiscite in Kitimat, BC, that voted 58.4% against the National Energy Board's Joint Review Panel's decision to approve the Northern Gateway Pipeline. David Nettleship suggested I look at articles by Ray Grigg.

The approval of Enbridge's Northern Gateway pipeline by the National Energy Board's Joint Review Panel (JRP) landed with a dismal and predictable thud. It is a view that needs to be reviewed, an assessment that needs to be reassessed, a decision that still needs multiple other decisions. "After weighing the evidence," the JRP announced with an unconvincing finality, "we concluded that Canada and Canadians would be better off with the Northern Gateway Project than without it."

The pronouncement is filled with ambiguities, uncertainties and deficiencies. What evidence was weighed that supported the JRP's conclusion? Of 1,179 oral submissions, 1,159 were opposed to the pipeline and the resulting supertankers. As noted by Stephen Hume in The Vancouver Sun, "Scientists and environmentalists who wanted to address the hearings were excluded from the process by NEB fiat" (Dec. 20/13). The hearings did not consider "upstream" or "downstream" effects, except as economic factors — but even these were only conjectural or "likely".

As for being beneficial to "Canada", it is a land mass, a geographical territory endowed with natural features that don't need scarring by pipelines, inevitable oil spills, threats to species and ecologies, wholesale removal of a non-renewable resource, massive environmental trauma from the tar sands development, not to mention additional greenhouse gases that are exacerbating climate change.

As for the benefit of the Northern Gateway pipeline to "Canadians", this is both conjectural and questionable. The evolution of Canadians toward oil as their single, dominant, economic driver moves us toward the status of a petro-state with all the accompanying financial instabilities, budgetary uncertainties and democratic corrosion. Although the JRP finds that "the project, if constructed, would likely deliver economic benefits by expanding and diversifying the markets available for western Canadian crude oil exports", it also acknowledges that it is "difficult to determine, with certainty, the effect the Northern Gateway Project may have on broader market prices once it is placed in service...". In other words, the addition of Alberta dilbit to the international market

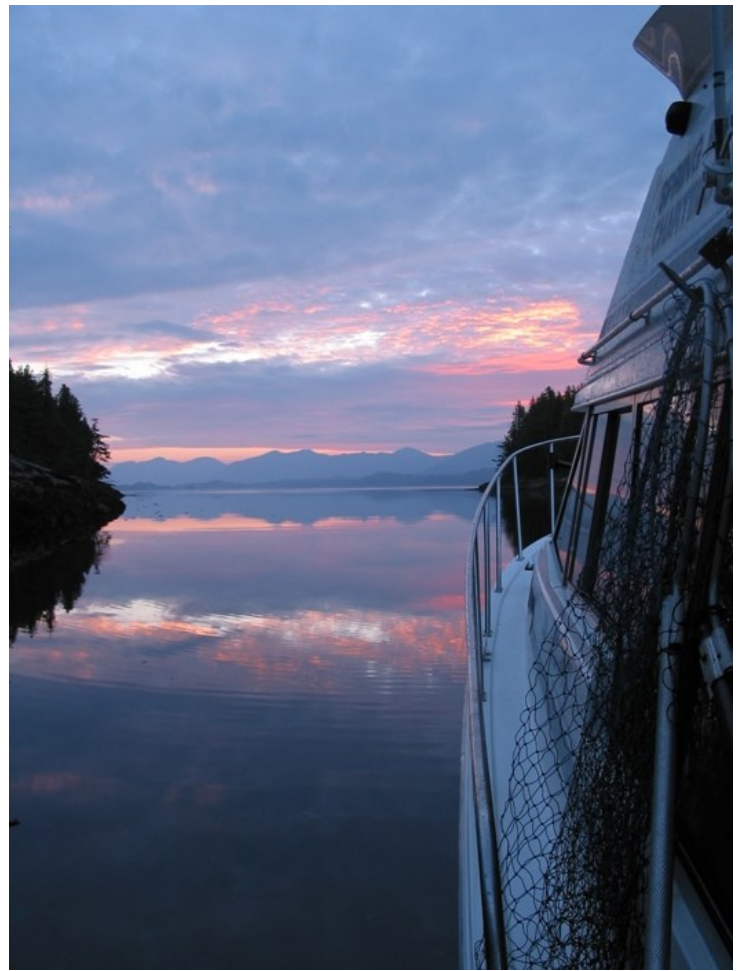


Photo: Sunset on Douglas Channel, BC. (photo: Ray Hepting)
This channel is one of the principal inlets of the British Columbia Coast; the town of Kitimat is on Kitimat Arm at the head of Douglas Channel.

may lower the price of oil, reduce Canadian royalties, and challenge the viability of the pipeline itself. Alternately, "new pipelines connecting producing regions with consuming regions change market dynamics in ways that cannot easily be predicted", so "if constructed, the project would significantly expand and diversify the market options for western Canadian crude oil supply which would contribute to the realization of full market value pricing over the long term." This translates to mean that Canadians could pay more for their own oil.

All these uncertainties are compounded in a country that has no coherent energy policy, is producing dilbit by furiously burning limited supplies of natural gas, is still importing "unethical" oil for its eastern needs, and is alienating itself from a global community becoming increasingly desperate to wrestle down carbon dioxide emissions. Indeed, as the world's climate situation continues to worsen during the next decades, the pressure to reduce oil production and consumption will only in-

tensify. A global tax on carbon is almost inevitable, “dirty” oil from the tar sands will almost certainly be subject to increasing censure, and Canada could even be confronted with trade sanctions as it promotes a product that is deemed unacceptable by international judgment.

And this doesn’t even address another profoundly important environmental issue. The JRP acknowledges that no studies have been done to assess the impact of dilbit on river or marine ecologies. Nonetheless, in a leap of blind faith and an expression of amazing understatement — despite finding “there is some uncertainty regarding the behaviour of dilbit spilled in water — the Panel finds that the weight of evidence indicates that dilbit is no more likely to sink to the bottom than other heavier oils with similar physical and chemical properties.” So, uncertainty about the impact of dilbit on marine ecologies is dismissed by the Panel as inconsequential because it may not be worse than any other spill of “similar” crude.

To reassure everyone that all will be well if the Northern Gateway is built, the Panel recommends “a scientific advisory committee to study what happens to diluted bitumen when released into the environment.” Good idea. But this is essential information, required before the pipeline is approved, not after. Besides, the Panel’s adroit use of words focuses attention on the bitumen and not the environment — surely the issue is not “what happens to the diluted bitumen” but its impact on ecologies into which it is spilled.

But this evasive language is common in the JRP’s Re-

port. Uncertain environmental impacts are disguised in verbal obscurity. Consider the following sentence. “The type and duration of effects would be highly variable and would depend on the type and volume of product spilled, location of the spill, exposure of living and non-living ecosystem components to the product spilled, and environmental conditions.” This is a wonderful example of linguistic nonsense. It simply admits, that given a spill of “product” — a much more benign term than diluted bitumen — neither the Panel nor anyone else knows what will happen. Nonetheless, despite the long-term damage to Prince William Sound from the Exxon Valdez disaster more than 20 years ago, the Panel is able to conclude from no substantial information or studies “that the adverse [environmental] effects would not be permanent and widespread.”

Approval of the Northern Gateway by the JRP is little more than a routine formality wrapped in a symbolic gesture. Recent legislation passed by the federal government has radically altered the Canadian Environmental Assessment Act and the National Energy Board Act, transferring decision-making power to the federal cabinet. Given its political, economic and environmental ideology, final approval of the Northern Gateway is inevitable. But a host of other obstructions lie between approval and completion. Building the actual pipeline is more unlikely than it seems.

¹Republished with permission of the author. Originally published in the *TideChange*, 26 February 2014.

The ‘VOYAGE OF DISCOVERY’ is complete!!

The e-book manuscript of *Voyage of Discovery* is about to be delivered to the printer/binder with bound hardcover books expected to arrive at BIO in late May or early June 2014.

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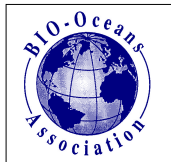
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Editor's Keyboard: Thank you to Mike Hughes for recognizing the editorial team. It continues to be fun to put the newsletter together, but we exhort BIO-OA members to send us articles and ideas for subjects. I look forward to the Peter's full Himalayan trek story in the next issue. Have a look at the display of badges in the Murray Building that Kathryn Sullivan took into space with her and presented to BIO. Claudia is a most deserving recipient of the Beluga Award who has not only brought her impressive organizing skills to many endeavours at BIO, but has also inspired others to con-

tribute. Worth particular recognition are her accomplishments in raising the public profile of BIO. The Association needs to be mindful of and maintain, and increase our effort in this area. There is a link between the interview with Alan Longhurst and Scott Findlay's lecture. Both men recognize the importance of public interest science. We may never return fully to the 'golden age' at BIO that Alan remembers, but we must, as scientists, consider taking on the responsibilities Dr. Findlay asks of us and encourage politicians and the public to take on their responsibilities. *Andy Sherin*



ABOUT THE BIO-OCEANS ASSOCIATION

The Bedford Institute of Oceanography Oceans Association (BIO-OA) was established in 1998 to foster the continued fellowship of its members; to help preserve, in cooperation with the Institute's managers and staff, BIO's history and spirit; and to support

efforts to increase public understanding of the oceans and ocean science. Membership is open to all those who share our objectives. Most current members are present or past employees of BIO or of the federal departments of Environment, Fisheries and Oceans,

and Natural Resources (or their predecessors) located in the Halifax Regional Municipality. Membership is \$10.00 per year, \$40.00 for five years, or \$150.00 for a lifetime membership.

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Georgina Phillips 823-3401
Tom Sephton 244-6080

hughes@bellaliant.net
donald.gordon@dfo-mpo.gc.ca
keizerp@gmail.com
michaelmurphy@eastlink.ca
jesuther@dal.ca
lcollins@accesscable.net
gordon.fader@ns.sympatico.ca
bob.iris@ns.sympatico.ca
nkoziel@nrcan.gc.ca
tim.lambert@dfo-mpo.gc.ca
bosko@ns.sympatico.ca
jrmacdogall@hotmail.com
susanmerchant@eastlink.ca
dnnlundy@navnet.net
tandgphillips@eastlink.ca
tom.sephton@dfo-mpo.gc.ca

COMMUNICATIONS: NEWSLETTER, PR, AND WEB SITE

NEWSLETTER EDITOR
ASSOCIATE EDITORS

Andy Sherin 466-7965
David Nettleship see above
Betty Sutherland see above
Clive Mason 426-4163
Philip Spencer 426-4465

oanewslettereditor@gmail.com
see above
see above
clive.mason@dfo-mpo.gc.ca
philip.spencer@nrcan-mcan.gc.ca

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Art Cosgrove 640-2634
Keith Manchester (contact) 861-3509
Bosko Loncarevic see above
Don Gordon see above
Peter Wells 237-0600
Charles Schafer 861-3145
Claudia Currie 435-4297

Andrew.Cogswell@dfo-mpo.gc.ca
davidmckeown@hfx.eastlink.ca
arthurcosgrove@gmail.com
k.manchester@ns.sympatico.ca
see above
see above
oceans2@ns.sympatico.ca
charlestschafer@hotmail.com
clcurrie@nrcan.gc.ca

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Association Mailing address: Bedford Institute of Oceanography, P.O. Box 1006, Dartmouth, NS B2Y 4A2.

VoicePipe mailing address: c/o Andy Sherin, 9 Rose Street, Dartmouth, NS B3A 2T4.

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