VOICEPIPE

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The Newsletter of the BIO-Oceans Association

A Tribute to Don Gordon

by D.L.McKeown

Don Gordon preparing the BOSS (Benthic Organic Seston Sampler) for deployment on the deck of CSS *Parizeau* in the mid-1990's
Photo credit: BIO Photo Unit

The Beluga Award 2025 Nominations are due 24 February 2025

Send the name of the nominee, the names of supporters and 200 words (max) describing the nominee's contribution to the Beluga Award Chair, Jenna Higgins

jenna.higgins@nrcan-rncan.gc.ca

Award criteria found at www.bio-oa.ca/beluga.php

Contents

A Tribute to Don Gordon

I grew to know, respect and admire Don over the years. He occupied a major place in my life as a colleague and good friend for the past three decades so the following is intended as a personal tribute to him rather than a recitation of his career accomplishments as substantial as they were.

Don receiving his Beluga in 2012 from Patrick Potter, Chair of the Beluga Selection Committee at that time.

Prior to the late '80's individual BIO lab directors had responsibility for managing their resources in order to carry out what they deemed to be the most worthy scientific projects within a broad mandate set by Ottawa. Then came a dramatic change. The mandarins at HQ decided the departmental objectives could be better met by them controlling a major portion of the financial resources and deciding which scientific project would best meet departmental objectives. While this new vision was applied across the community of laboratories, it fell most heavily on the Marine Ecology Laboratory. It was closed, the staff reassigned to other organizational units and told to focus their efforts in the future on projects that would benefit fisheries management. In common with other scientific units within the department, individual scientists who now wished to pursue projects on a major scale were required to submit a proposal to Ottawa for resources much like university researchers but, unlike them, they were also required to seek official approval from on high to undertake the project.

Having been members of a very tight knit scientific community with a world-class reputation, the MEL staff were understandably demoralized. Don, ever the optimist and planner, sensed that the new order of things presented an opportunity. While the colleagues he was accustomed to working with were now dispersed about the Institute, he knew the directors encouraged staff to become involved in projects that crossed organizational boundaries so creating a team to tackle a new initiative should not present a problem. Therefore, he combined his knowledge of important fisheries ecological issues that were of concern at that time along with a careful study of a report titled "DFO Fish Habitat Management Policy" to put together a multiyear plan designed to answer the question of to what degree bottom trawling impacted the sea floor. From the perspective of fisheries management, this issue was important because this is the environment in which demersal fish live and feed. Don's carefully targeted and constructed proposal, including the resource requirements he set out, was quickly approved by HQ staff. Don then set about building a research team and initiating the development of the technology required to carry out his plan.

One major methodology Don needed to accomplish his planned objectives was the ability to define exactly where the disturbance areas he planned to create were and where his sampling devices were on the sea floor with respect to them. At that time, the major focus of my research program had been on the development of real-time precise positioning of ships on the surface and instrumentation in the water column and on the sea floor. Although we had both been at BIO for about 20 years by then, my research interests had been in the fields of geoscience and physical oceanography and I was totally ignorant of marine ecology so our paths had rarely crossed. However, because of the culture of BIO at that time, somehow Don's particular need and my matching expertise led to me joining his team and thus began the best final years of my career at BIO.

I was a member of a different organizational unit at BIO so not party to the annual project planning process that he took part in with lab management. However, participation in every cruise with him from 1991 onward gives me insight into how he put together such a broad world class program of marine ecological research that spanned more than two decades. While from the beginning he had a long term plan with a number of objectives, he sub-divided it into small enough chunks that, when each was fed to HQ staff charged with approving such proposals over the years, they could appreciate what he proposed doing and how it would contribute to their perception of departmental objectives. Also, he always ensured that the proposal clearly outlined the resources needed to accomplish the objectives and made it clear that approval of these was essential if the proposed

results were to be achieved.

As the years went by, the initial approved program morphed into other areas of ecological research with Don always playing the leadership role and it was very interesting to see how he did this. On each cruise the vast majority of our time would be spent addressing the objects of the HQ approved project or projects. However, we always spent a day or two at the latter end of a trip carrying out an investigation undoubtedly approved by local lab management but not part of the officially sanctioned HQ program. The purpose of these activities was to gather background information in support of the next proposal Don planned to submit as part of his long term plan. For example:

- while doing the initial trawl impact studies on the Grand Banks, we spent time examining waste water discharge from the Hibernia platform which led to a separately funded multi-year study there;

- while studying the impact of hydraulic clam dredging on Banquereau, we did an exciting video survey of the nearby Gully which led to a fully funded research program that ultimately resulted in the Gully becoming a Marine Protected Area (MPA);

- during the Gully project, we documented the significant occurrences of deep-water corals which led to a project to map coral distributions from the Gulf of St Lawrence to the mouth of the Bay of Fundy, resulting in the declaration of MPAs at the Stone Fence in the Laurentian Channel and the Northeast Channel at the mouth of the Bay of Fundy;

Enough of the bureaucratic side of the research program. I will now try to explain why we all had such high respect and dare I say, adoration for Don as a leader.

He put together a close knit team to help him carry out the programs. Each of us had a particular complementary expertise which was important in itself but equally important, given that we were to work closely together for many years on multi-week cruises. We turned out to be a very congenial group. How much of this was luck and how much was good management on Don's part I can't say but I lean toward the latter. I believe I speak for all of us (including Don) when I say that the highlight of our working year was the annual cruise under Don's leadership. All these years later at Don's recent Celebration of Life, Cynthia Bourbonnais said exactly that to me. An example of the loyalty we all felt toward Don is the fact that, prior to his last cruise, several of us had retired but we all volunteered to accompany him in order to have the opportunity to once more work together and see his vision to completion.

Don always ensured that everyone on board was fully involved in the field program by: assigning all "visitors" to regular scientific watches; having a video monitor installed on the bridge so that the officers and crew members on duty there could see the same underwater view as we could in the lab; giving an informal lecture in the crew's mess every trip to describe what we were attempting to do and how; ensuring all members of the ship's company knew they were welcome to come into the lab areas at any time to join us as we worked; seeking input from crew members knowing that many had been brought up in fishing communities and could offer a different perspective on what we were doing. Whenever possible, he included all the team members in meetings both at home and away to ensure that we understood the contributions we were making and also give us an opportunity to provide input into future planning.

An example of how these efforts were viewed by the ship's company is that, a couple of days after the ship had returned to BIO after our last cruise, they hosted a wonderful reception for our entire study team including significant others to mark the end of our field program and commemorate all the work we had done on *Hudson* since we started using her for our benthic habitat programs in 1998. To the best of my knowledge, this was the first time that such an event had occurred. Also of note was the presence of several of the ship's company at his recent Celebration of Life.

Don's normal place as Senior Scientist and Project Leader would be in the lab during various operations such as video surveys so that he could best absorb incoming information and redirect efforts as necessary. However, he never failed to don wet weather gear and go out on deck to relieve one of the junior staff labouring there so that they could come into the lab to warm up, grab a coffee and share the excitement that we were experiencing as we observed the sea floor beneath us.

Both as a scientist and project leader Don understood the importance of fostering cooperation with all components of DFO, locally and in Ottawa, with Canadian universities and with the non-scientific world around us. Whenever the opportunity presented itself, he would willingly meet with anyone interested in his program and he made clever use of his ship time in that endeavour. Once we had moved our program from the smaller *Dawson* and *Pariseau* to the larger *Hudson*, spare berths often became available on our cruises. Don used these as an opportunity to invite on board:

- graduate oceanography students to conduct field work related to their research program using our support staff and technology;

- Ottawa headquarters staff who were the ultimate recipients of his next research proposal;

- BIO staff who would not ordinarily have an opportunity to participate in a cruise;

- journalists interested in our science programs;

- even a graphic artist.

Don would assign them to stand science watches 24/7 so they could experience the true nature of a field program at sea, appreciate the stresses and strains that we endured, and the excitement when interesting and unique observations were made.

Experimental scientists such as Don spend years seeking approval and resources for research projects, then months planning the details of the field program. Consequently, such field work, especially at sea, can be very stressful. Invariably things go wrong, equipment breaks down, bad weather interrupts carefully planned experiments, and sometimes individuals make mistakes that impact negatively on the program. When such events occurred, Don would sit down with us, walk through the problem and devise a solution. No matter how stressed the rest of us became at times, I can never remember Don ever expressing frustration or anger. Instead, he would remain cheerful and do what he could to lighten the atmosphere. Perhaps at the heart of this positive attitude was the fact that he simply loved going to sea.

During his lengthy scientific career Don received a number of national and international awards attesting to the quality of his work and the contributions he made to the science of marine ecology. However, my focus here has been an attempt to portray another aspect of Don, that is, how he was seen by those of us who had the good fortune of working with him. There are two examples that immediately come to mind to illustrate how widely the respect for him was felt throughout the BIO community. In 2012 he received the Beluga Award and in 2015 a bald cypress tree was planted in his honour in the Bernard Pelletier Arctic Fossil Forest Garden at BIO.

Don formally retired in October 2005 at the age of 65 after working as a government scientist for 35 years. He immediately began a career as an emeritus scientist analyzing, interpreting and publishing the bountiful results of the last two decades of his career. These might well have been some of the happiest years of his scientific career as he was no longer pressed to take on management and administrative tasks but could focus all his efforts on the science he loved.

Don then turned his attention to documenting some of the history of the local oceanographic community. His first endeavour was the creation of *"Voyage of Discovery"*. To quote from a private autobiography Don once sent to me: "One day in early 2009, my attention was caught by a book on my office shelf that had been prepared on the occasion of the 50th anniversary of the Woods Hole Oceanographic Institution in 1980. I felt that we should try to do something similar for the upcoming 50th anniversary of BIO in 2012."

True to his word he pursued that thought with his usual skills of leadership, project planning and team building, the result being the publication in 2014 of *"Voyage of Discovery"* containing almost fifty well-illustrated scientific review articles written by about one hundred authors from the BIO community. Publication of the book was underwritten by the BIO Oceans Association and, not common for such a book, it earned a handsome profit for the Association.

He then went on to create the following histories, all of which are available on the BIO-OA website:
"*The Early Days of Oceanography at Dalhousie University 1959-1986"*
"*Marine Ecology Lab History"*
"*A BIO Chronology"*

With a mind never at rest, Don:

- was an active member of the BIO-OA Executive;

- he and Kelly Bentham organized BIO's 60 year collection of negatives and slides into a searchable index, an effort that had failed during several previous attempts by others;

- persuaded BIO management to name the auditorium in honour of William Livingston Ford, the second director of BIO;

- had *Hudson* ship's bell placed there to announce the start of events.

Shortly before he passed away in July Don completed a 250 page manuscript describing the career of his beloved research vessel CSS/CCGS *Hudson*. DFO has agreed to honour Don's memory by producing it as a formal publication within one of their scientific report series.

For me, Don was a great project leader, a wonderful person to work with and a very good friend.

President's Message

Happy New Year! 2025 has always sounded like a noteworthy year to me. Oceans Association members can look forward to a few special occasions this year.

I was delighted for the several opportunities OA members had to get together with each other and with BIO colleagues since our last ***VoicePipe*** was published in early October 2024.

Bruce Anderson coordinated a tour for OA members of the recently opened state-of-the-arts Facility for Intelligent Marine Systems (FIMS) at BIO. Christiane Theriault, Acting FIMS Operations Coordinator, led the tour on October 17th. Bruce's article about the tour will be published in a future issue of the ***VoicePipe***.

Don Gordon's Celebration of Life held in the Parish Hall of Christ Church in Dartmouth on Saturday 26 October was a wonderful occasion to get to know Don's life beyond BIO and the OA with the heartfelt eulogies by family members. Gareth Harding and Dave McKeown sharing many touching personal memories of Don's BIO and OA adventures. I enjoyed chatting with the many BIO and OA folk who attended. The extraordinary planning by Don's family and close friends was a true testament to their pride and love for Don. Cynthia Bourbonnais handled the influx of squares and sandwiches for the reception with seeming effortlessness. Andy Sherin and Sheila Clyburne helped and kept the coffee and tea hot and ready.

The Potluck for the OAs Annual Anniversary Event in BIO's Ford Auditorium on 13 November was a bustling gathering and a real treat! It was also a great opportunity to commemorate the 10th Anniversary of the publication of the ***Voyage of Discovery*** (VOD)! A few visiting students were delighted to get copies of the VOD! This was the first time so many Past Presidents had gathered together since the 20th Anniversary at Brightwood! Drop-ins of BIO Staff enjoyed sharing the delicious potluck treats that long-time and recent OA members brought. I am looking forward to a potluck for the OA's Anniversary gathering next Fall.

The Parker Street Holiday Hamper Drive, organized annually by BIO for the last 30 years, was handily executed by Andrew Cogswell and his proficient BIO Holiday Hamper Team - Jennifer Mason-Dixon, Patrick Meslin, Genevieve Philibert, Melissa Faulkner, Jason Green, and others. OA members and their families volunteer regularly. This year I volunteered with Chris and Susan Jauer in the Maritime Hall of the Halifax Forum on Wednesday morning 17 December. It was delightful to work with all the cheerful volunteers packing the many boxes with special holiday meal items for Haligonian families!

Several OA members attended the BIO Holiday Family Party on Christmas Eve morning at BIO. Jay Barthelotte has jollily taken the reins from Bruce Anderson to continue the tradition of Santa in his red sleigh.

I am still getting to know the "First Wednesday of the Month" Lunch Group (aka ROMEOs – Retired Old Mariners Eating Out). This is a fascinating and dynamic group! My observations have taken many twists and turns over the past five months, so my article keeps evolving! Keep your eye out for it in a future issue of the ***VoicePipe***!

I am looking forward to more opportunities to get together in the coming year.

The Chair of the Beluga Award Selection Committee, Jenna Higgins, is putting out the call for Beluga Nominations in early February 2025. As soon as we receive it, the call email will be forwarded to all OA members who are welcome to submit nominations.

2025 is the 25th Year of Beluga Awards since the first one was awarded in 2001! We are looking forward to seeing as many past Beluga Award winners as possible at the Ceremony this year. We would also love to see as many past Selection Committee Chairs and Selection Committee members as possible. The OA is so grateful for the dedicated volunteer work the Selection Committee does to select outstanding individuals for this cherished award.

We will be letting you know about more opportunities to attend interesting talks. After some of the talks, OA members can gather for coffee, lunch or an evening get together. We will be organizing tours for OA members during the Spring, Summer and Fall. Let us know if you have any favourites. Watch for emails and posts to our BIO Oceans Association FaceBook Group.

The next ***VoicePipe*** will be #99, almost #100! Another Milestone to celebrate! Many thanks go out to Andy Sherin and former Newsletter Editors for your exceptional expertise! I always look forward to reading each issue of the ***VoicePipe***.

Yours, Jennifer

The Parker Street Holiday Hamper crew. Photo credit: Chris Jauer

BIO OA Anniversary potluck social

Past, present and future Presidents of the BIO Oceans Association attended the potluck lunch (Back row from the left) Patrick Potter (2022-2024), Bruce Anderson (present First VP and president elect), Paul Keizer (2011-13), Mike Hughes (2013-15), (Front row from the left) Andrew Sherin (2019-22), Jennifer Mudge, (present President), Betty Sutherland (2006-08 and 2010-11), and Claudia Currie (2017-18).

BIO-OA members and guests attended a potluck lunch in the Ford Auditorium on 13 November 2024. Several members of the present BIO staff joined in.

Brian Fowler, Peter Vass, Paul Erickson and Barry Hargrave ready to depart Resolute Bay for Canada's Ice Island (May 19, 1986)

On Thin Ice: Sampling the Arctic Ocean for chlorinated organic pollutants using Canada's Ice Island (Part 1)

by Barry Hargrave

Between 1986 and 1988 I participated in field work in offshore areas of Ellesmere and Axel Heiburg Islands. The project in the Arctic Ocean involved studies to investigate the distribution of chlorinated hydrocarbon pesticides (OCs) and PCBs. These man-made organic pollutants are concentrated in fatty tissues of arctic fish and mammals and thus may be consumed by people living at high latitudes. In the early 1980s, these environmentally persistent and potentially carcinogenic compounds were measured in breast milk from nursing mothers in Canadian arctic communities at levels exceeding Health Canada guidelines.

With the exception of abandoned Distant Early Warning sites built across northern Canada during the Cold War, there were no local or regional sources to account for human exposure to PCBs or OC pesticides. It was known that these lipid soluble chemicals are concentrated in fat-rich tissues of animals and so the most likely source of contamination to babies was through food consumed by nursing mothers. Water exchange to the Arctic Ocean and atmospheric transport of aerosols and dust from southern latitudes where the compounds are used were the most likely sources. The pollutants become concentrated in arctic terrestrial and oceanic food webs, leading to caribou, fish and seals, major food sources for northern people.

As a result of the risk to human health, three Canadian federal government departments (Indian and Northern Affairs, now Crown-Indigenous Relations and Northern Affairs Canada, Fisheries and Oceans and Supply and Services) jointly funded projects starting in 1986 to measure OC pesticides and PCBs in various regions of Arctic Canada including the Arctic Ocean. Peter Vass from BIO and Paul Erickson and Brian Fowler, chemists from a consulting company (Arctic Laboratories) in Sidney, B.C., joined me on my first trip to high Arctic in May of that year. I kept a journal and here is an entry from 38 years ago.

21 May 1986 - The air is cold and if you inhale deeply it burns your lungs. To protect myself I take shallow breaths. I am standing on a flat expanse of ice about a

meter thick floating on the frozen Arctic Ocean offshore of Axel Heiberg Island in the Canadian Arctic Archipelago. More than 300 m of -1.7 C seawater lie beneath me and the ice feels dangerously thin. I was warned to watch out for snow-covered cracks. However, behind me up a slight rise, there is a refuge. An island, not in the conventional sense but Canada's Ice Island, formed of multi-year ice about 40 m thick. It is surrounded by thin ice, 1 to 2 meters thick, that I am standing on that forms each winter over the frozen areas of the Arctic Ocean.

The background to this story began more than a year ago. We have come to Canada's Ice Island to work from a new research station established in September 1984 by The Polar Continental Shelf Project (PCSP) of the Department of Energy, Mines and Resources (DEMR, now Natural Resources Canada). Preparations for our trip began in March when we ordered and packed equipment needed to measure trace amounts of OC contaminants in air, snow, seawater, planktonic and benthic animals and sediments. Thirty boxes containing our equipment were waiting for us when we arrived in Resolute Bay, Cornwallis Island, NWT. The down-filled parkas, boots and insulated gloves that we brought with us help us to be comfortable in the -18 °C temperature we are experiencing.

Our party and gear travelled four hours north from Resolute by chartered DC-3 and Twin Otter aircraft to reach Ice Island. We left the black, snow-free peaks of the coastal mountains on the north face of Axel Heiberg Island behind as we flew over the white expanse of the ice-covered Arctic Ocean. Large pans of ice were thrust up like frozen waves along the coastline. However, the ice cover below us was not continuous. Flows near the coast move past each other at different speeds creating cracks and open water-filled leads. Patches of dark blue water separated semi-circular ice floes farther offshore. As we descended about 50 km off the coast, the ice cover became continuous. We knew, however, that summer was coming and soon even ice this far offshore would begin to move.

The Ice Island is a tabular iceberg calved from Ward Hunt Ice Shelf at the north end of Ellesmere Island. Ice shelves are formed, either as glaciers which flow off the land to form glacier tongues in fjords and inlets which then separate and move into offshore areas of the Arctic Ocean, or as thicker multi-year sea ice that remains fastened to the coastline. Ward Hunt Ice Shelf is thought to be formed by the second process. Every decade or two as the edge of an ice shelf becomes unstable, large sections break free to form an ice island which drifts with the seasonal surface ice of the Arctic Ocean. Canada's

The Polar Continental Shelf Project's Ice Island camp with portable trailers and large insulated huts.

Ice Island was probably calved in September or October 1982.

Research camps established on ice islands in the Arctic Ocean by Russian and U.S. research groups between 1952 and 1974 made four or five revolutions around the Canada Basin in the western part of the Arctic Ocean north of the Canadian Arctic Archipelago. Surface currents slowly move ice in a clock-wise direction but the exact route and rate of drift can't be predicted. Rates of movement are greatest during late summer and early fall before the ice cap solidifies. Staff from PCSP made an exploratory visit to the area off Axel Heiburg Island in 1984. Bill Hutchison (Assistant Deputy Minister, DEMR) and George Hobson (Director, PCSP) deployed a marker buoy for satellite tracking and monitoring of air temperature and barometric pressure. The island's south-westerly drift track implied that it would be carried into offshore currents. George visited again in March 1984 to look at snow conditions and find a suitable location for a runway and the camp.

Camp facilities were constructed and first occupied by DEMR scientific parties in September 1984. Seismic experiments with hydrophones placed through holes in the ice recorded sound reflections from small explosive charges detonated underwater. Mechanical hot-water drills were tested to see which would be best for melting hydro-holes through 40 m of ice. Seven buildings were constructed before geologists, from the Atlantic Geoscience Center, now Geological Survey of Canada Atlantic (AGC, DEMR) at BIO, arrived in April 1985 to work throughout the summer. Their experience and familiarity with conditions at the camp were critical for planning our research.

The island is elliptical (about 7 km long and 3 km wide) with a corrugated surface of ridges and troughs ("rolls") common to all multi-year icebergs making it stand out from relatively smooth first-year ice. Large floes around the island crack and separate during summer but join together when freezing temperatures return in September. In May 1986 when we arrived, several flat-roofed plywood huts were clustered at the end of a landing strip on the ice marked by empty oil drums. Living quarters could accommodate up to 30 people and power, radio communications, satellite navigation and meteorological sensors were maintained by PCSP personnel.

We were warmly received by AGC staff. The arrival of aircraft inevitably brings everyone out to the runway, no matter how cold the weather. The sun was warm despite the cold temperatures as we loaded our equipment onto sleds (qamutiks) pulled by skidoos. It was only after the planes departed that I noticed the silence. Apart from the continuously blowing wind and the crunching of dry snow under our boots there was little sound, only a distant, low hum of a diesel power generator. I had never been in a place so remote – an island of ice on a frozen ocean.

(Part 2 describing our sampling program will follow in a subsequent issue of VP)

World Ocean Reviews – Living with the Oceans

The International Ocean Institute (IOI) – Canada, on the campus of Dalhousie University, is a branch of the IOI based in Malta. It is an NGO that "advocates the peaceful and sustainable use of the ocean". The Institute at Dalhousie conducts international training courses in ocean governance, having done so for 30+ years. Of possible interest to scientists and coastal managers at BIO are the publications of the IOI, including a series of very readable, reviewed and indexed world ocean reviews. To date, topics of the reviews, written by European scientists, include the state of the world's oceans, fisheries, marine resources, sustainable use of our oceans, coastal habitats, the Arctic and Antarctic, ocean protection, and the ocean and climate. IOI – Canada has a limited number of hard copies for interested persons (please contact Michael Butler, Director, IOI-C, at Michael.butler@dal.ca). Importantly, all of the reviews can be downloaded directly from: https://worldoceanreview.com/en/download/. Hard copies are also in the BIO Library for easy browsing on a relaxed Friday afternoon! Please read and enjoy these wonderful ocean books! Peter Wells (IOI-C)

The 2024 A.G. Huntsman Award

The 2024 A. G. Huntsman Award was presented to Dr. William Cheung, University of British Columbia, on 2 December 2024 by the Honourable Arthur LeBlanc the Lieutenant Governor of Nova Scotia at Government House. Dr. S. Karly Kehoe, former vice-president of the Royal Society of Canada and president representing the Royal Society of Canada's College of New Scholars, Artists and Scientists gave remarks along with Dr. Alice Ortmann, A.G. Huntsman Foundation, and Ms. Francine Descharmes, Regional Director of Science DFO Maritimes.

The testimonial was presented by Dr. Boris Worm, Dalhousie University who praised Dr. Cheung for his dedication to research focussed on climate change, biodiversity, ocean sustainability and connecting marine sciences to social sciences.

The A. G. Huntsman Distinguished Lecture was held on 3 December 2024 in the Ford Auditorium at BIO.

Photo: left: Front row from the left: Dr. Willian Cheung, 2024 A.G. Huntsman Medal Award winner, the Honourable Arthur LeBlanc, Lieutenant Governor of Nova Scotia, the Honourable Rosemarie LeBlanc, Dr. Alice Ortmann. Back Row from the left: Dr. S. Karly Kehoe, Dr. Boris Worm, Ms. Francine Descharmes, Dr. Sonia Talwar, Geological Survey of Canada. Photo Credit: Government House
Right: Dr. Bill Lee (past chair A.G. Huntsman Foundation, left) and Charles Quon (retired research scientist BIO) attended the award ceremony at Government House. Photo Credit: Bill Li

NSIS News
by Peter Wells

The NSIS event for March is a student symposium, where several graduate students will give 7-min descriptions of their ongoing research. Check the website for information.

There was an article ***"Ship with a Soul",*** the CSS/CCGS *Hudson,* in the most recent PNSIS, Vol. 53(2), 2024, p. 195-204, written by Don Gordon.

NSIS has an updated Wikipedia page, as well as a redesigned and information packed website (www.nsis1862.ca) Please check them out.

PAYMENT Select one: ___ One Year: $20.00 ___ Five years: $80.00

Cheque *Make your cheque payable to BIO-Oceans Association. Print the form, fill it in and send it and your cheque to:*
BIO-Oceans Association Bedford Institute of Oceanography PO Box 1006, Dartmouth, N.S., B2Y 4A2

E-transfer *Complete the form and hit Submit. Use your banking app to send the payment to* accounts@bio-oa.ca.

Credit card *Before clicking the submit button, please provide the following information. This data will be deleted from our records after payment is processed. A processing fee of $2.00 will be added.*

Card number: _____ Expiry Date (DD/MM/YEAR): _____

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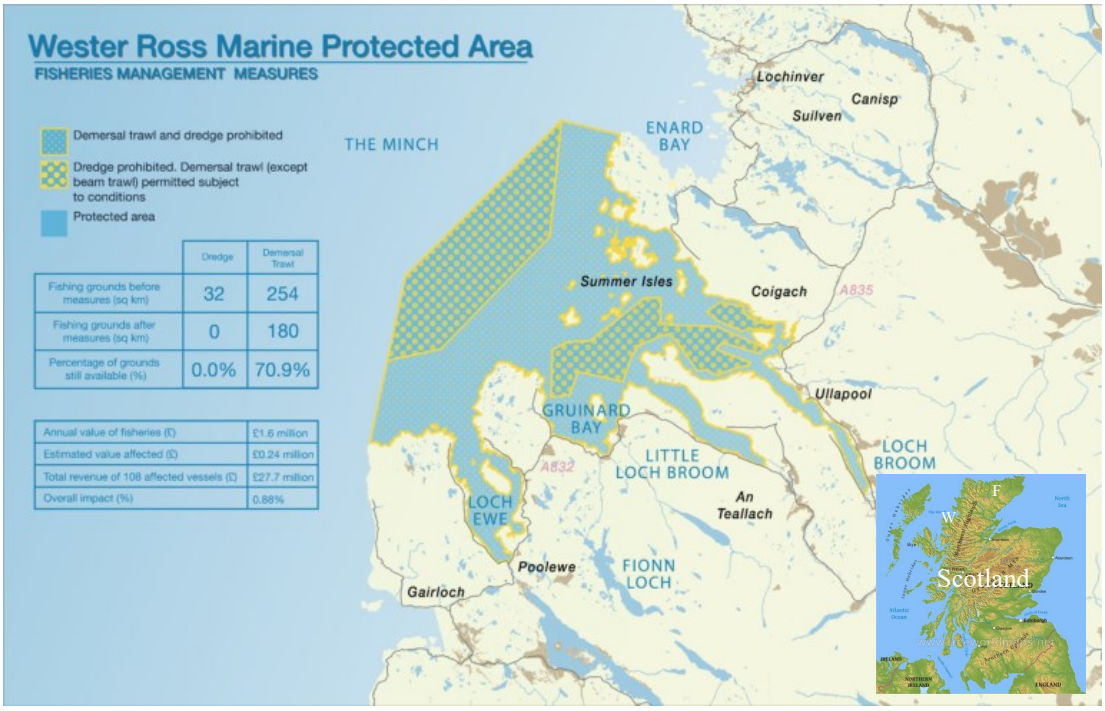
Another Scottish Adventure: the Flow Country and the Wester Ross Marine Protected Area

by Andy Sherin

In the spring of 2024, we toured my wife's family's ancestral home, Scotland. After spending a week in Edinburgh we drove to Inverness, then the North Coast 500 (NC 500), Scotland's Route 66 up to Cape Dunnet and around to the Isle of Skye. Two notable places on the NC 500 that may be of interest to readers are the Flow Country and the Wester Ross Marine Protected Area.

The Flow Country is one of the largest and most-intact areas of blanket bog anywhere in the world and was recently recognized by UNESCO as a World Heritage Site. The biodiversity found across the Flow Country reflects the internationally rare and important assemblage of habitats, flora and fauna. It is home to a bird assemblage not seen anywhere else in the world and supports over 10% of the global *Sphagnum* bog moss flora. My wife loves the flora of wetlands.

The Wester Ross Marine Protected Area (MPA) was designated in July 2014 to protect diverse and fragile seabed habitats and to enable the recovery of protected species like maerl (a pink seaweed) and flame shell beds. Maerl and flame shell beds are vital to the health of the local marine ecosystem, and they support local fisheries such as scallops, cod and keystone species like herring. The general public is asked to watch for illegal activity in the MPA. Loch Ewe, part of the MPA, was an important assembly point for convoys supplying the Soviet Union during WW II.



Left: Map of the Wester Ross MPA, W on the location map. Right: Observation tower in the Flow Country, F on the map.

NEW AND RENEWING MEMBERSHIP BIO-Oceans Association **www.bio-oa.ca** **bio.oceans@gmail.com**

YOUR INFORMATION ___ New membership ___ Renewal
(*Please fill in any changes to your contact information*.)

Name: _____

Address: _____ Postal Code: _____

Telephone: _____ Email: _____

BIO/Other Affiliation: _____

How would you like to be involved with BIO-OA (eg. social, executive position, just the news, etc.)
_____

How did you find out about us? _____

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 and Climate Change, Fisheries and Oceans, and Natural Resources (or their predecessors) located in the Halifax Regional Municipality. Membership is $20.00 per year, $80.00 for five years.

Officers and Directors

PRESIDENT	Jennifer Mudge	
VICE-PRESIDENT / PRESIDENT-ELECT	Bruce Anderson	
VICE-PRESIDENT	vacant	
PAST PRESIDENT	Patrick Potter	
SECRETARY	David McKeown	
TREASURER	Lori Collins	
MEMBERSHIP	Jennifer Mudge	bio.oceans@gmail.com
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	Pierre Clement	
	Timothy Lambert	
	Michel Therrien	
	Alice Gilson	
	Chris Jauer	
	John Shaw	

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NEWSLETTER EDITOR (INTERIM)	Andrew Sherin	oanewslettereditor@gmail.com
WEBMASTER	Jazmine Hayden	

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BELUGA AWARD	Jenna Higgins	
BIO ARCHIVES	Vacant	NSIS LIAISON Peter Wells
OUTREACH	Vacant	TITANIC SOCIETY LIAISON Steve Blasco
EVENT COORDINATOR	Vacant	

Past Presidents

Robert Reiniger (1998-2000), Dale Buckley (2000-02), David Nettleship (2002-04), Donald Peer (2004-06), Betty Sutherland (2006-08 and 2010-11), Bob O'Boyle (2008-10), Paul Keizer (2011-13), Mike Hughes (2013-15), Michael Murphy (2015-17), Claudia Currie (2017-18), Andrew Sherin (2019-22), Patrick Potter (2022-2024)

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