

# *BIO-OCEANS ASSOCIATION NEWSLETTER*

*Issue 26, April 2005*    *On the web at:* <http://www.bedfordbasin.ca>

## INSIDE THIS ISSUE:

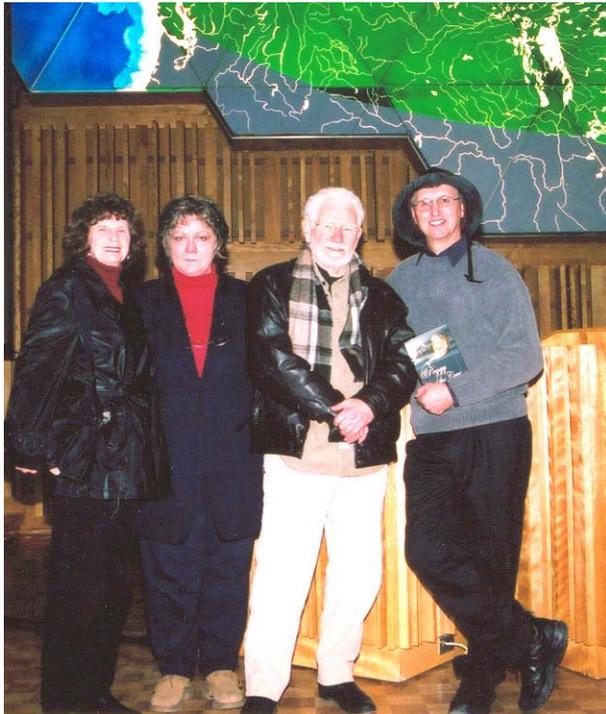
<i>Peer's Ponderings</i>	2
<i>Jackie Dale: Recipient of the 2005 Beluga Award</i>	3
<i>Financial Report — Membership Report</i>	5
<i>New Uses for Grandchildren's Discards</i>	6
<i>Noteworthy Reads: Book Reviews in Brief</i>	6
<i>Quips and Quotes</i>	11
<i>From the Archives...35 years ago — Brief Notes</i>	12
<i>Mike Eaton to Receive Order of Canada</i>	13
<i>Park Ship Models and Bronze Merchant Navy Plaques Donated</i>	15
<i>Winter...Savannah Style</i>	16
<i>Doggone it II: More Pet Humour</i>	17
<i>Another Quiz for the Fun of It — About the Association</i>	18

FROM THE PRESIDENT

**PEER'S PONDERINGS**

*By Donald Peer*

Is it just me or was it a longer, colder, and windier winter than usual? Perhaps I feel that way because Dorothy and I spent some of the previous winter on the warm Portuguese coast whereas this year our travels were restricted to northern climes. In any case, we look forward to feeling warmer now that the sun is on our side of the line. With the worst behind us, I am finishing up my 'inside' project – rebuilding a 12 foot canoe – which is in a shed heated by a wood stove, and soon I will be resuming my outside project - a 20 foot sloop - which is in the open air under a temporary cover. I am enough of an optimist to believe that these will someday be usable boats. In any case, I am enjoying the building process.



It was out of respect for the winter weather that this winter's social event was held on a Sunday afternoon rather than on an evening, when travel can be more difficult. On February 13, the Association hosted a talk by Ivan Fraser, an artist, photographer, and art gallery owner from Glen Margaret, Nova Scotia. Ivan gave a lively presentation about his inspiration for publishing a series of beautifully illustrated children's books on the facts and legend behind 'Peggy of the Cove'; also on hand in the BIO auditorium was singer Melanie Ross who beautifully told us the story in song. The first book in the Series – Peggy of the Cove: A Legend Brought to Reality - was published in March 2005 and is available from The Book Room and other stores. Copies as well as a lot of interesting information on Ivan and the project are also available on the web at [www.peggyscove.net](http://www.peggyscove.net). We thank Ivan and his friends for their presentation to us.

***Ivan Fraser (at right with hat) and friends in BIO's auditorium (Photo by M. Latremouille)***

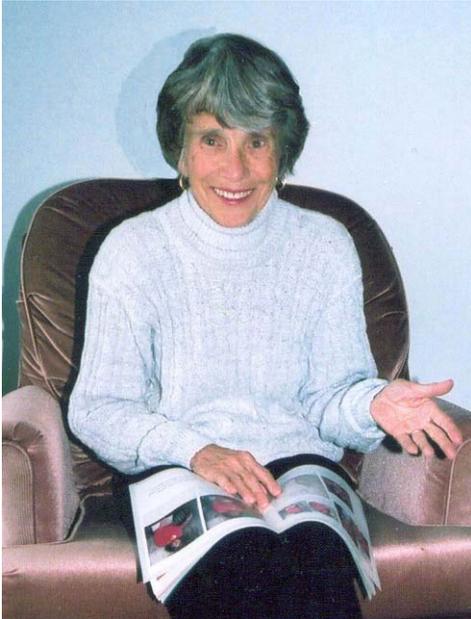
With the coming of spring, we are anticipating the activation of the archives committees with the return of the chairs. Much has been accomplished in both the Library and Equipment archives and the Photo Archives is off to a good start. The Beluga award committee has been active and they are very pleased to announce that the recipient this year will be Jackie Dale, whose interesting career and accomplishments are summarized in the article on page xx.. Meanwhile, be sure to plan on attending our Annual General Meeting on May 17 [ date to be confirmed] when the Beluga Award will be formally presented to Jackie.

As always we are looking for new members. The three archives committees, the social activities program, and the newsletter can all use more help if these projects are to continue to succeed. We also need some new faces on the executive to prevent the burnout of the present members and to replace those who wish to resign.

On the subject of resignations, our Treasurer, Betty Anderson, has asked to do just that. Betty has held the position of Treasurer and looked after the membership records since the formation of the organization and, as any one who has been an officer of any organization knows, a good treasurer is the backbone of all the successful ones. On behalf of all members of the executive and the association, I would like to express our sincere thanks and appreciation for the work that she has done and the crucial responsibilities that she has capably discharged on our behalf.

See you at the AGM in May!

## **JACKIE DALE: RECIPIENT OF THE 2005 BELUGA AWARD**



Jacqueline Dale, the 2005 winner and first female recipient of the BIO-OA Beluga Recognition Award, has played key roles in life at BIO for over 30 years.

Jackie graduated with a Bachelor of Science in Chemistry from Dalhousie University (Kings College) in 1952 beginning her career at the Biochemistry Laboratory of the Victoria General Hospital in Halifax where she worked for three years. In 1955, she was hired as a Junior Scientist at the Halifax Lab of the Fisheries Research Board, working with Charlie Castell ("Mr. C"), the senior bacteriologist.

It was the late 50s and Jackie interrupted her career to raise her family. Nevertheless, she continued to work professionally but intermittently over the next ten years and family ties kept her in contact with the oceanographic community. She lived for several short periods in the late 60s in Bermuda: her husband was an administrator and she worked as a volunteer at the

Bermuda Biological Station. In 1969, she returned to work at the Halifax Lab..

Jackie came to BIO in 1971 to work in the Environmental Quality Division of the Marine Ecology Laboratory (MEL). Her time was shared, working as a pesticide chemist for Richard Addison and as a chemical oceanographer with Don Gordon and Paul Keizer. In those early days, along with Ann Orr, she was one of the first women to be "allowed" by Martin Blaxland, to wear trousers to work. In MEL, she was involved in a large number of research projects including pesticide chemistry, hydrocarbon chemistry, the distribution of hydrocarbons in seawater and sediments, and the ecological effects and fates of oil spills, with particular focus on the *Arrow* spill of 1970 in Chedabucto Bay. In the late 70s and early 80s, she worked as part of a large team of BIO scientists investigating the Bay of Fundy ecosystem to better understand the potential impacts of tidal power development. Jackie participated in a series of projects studying sedimentology, nutrients, primary production and organic carbon cycling. This involved collaboration with other government departments and universities. Sample collection might be made from a helicopter, ship, small boat, vehicle, or on foot while tramping over mudflats during all seasons of the year. Jackie handled it all. Her important contributions to MEL research programs are evident by the number of scientific papers and reports that carry her name and are still cited.

In the 80s, Jackie also dipped her fingers into conference organizing. In 1981, working with Don Gordon, she coordinated the Symposium on the Dynamics of Turbid Coastal Environments. In 1989, with Carl Amos, she coordinated the Canadian Continental Shelf Seabed Symposium and, in 1996, she was a member of the organizing committee for the Canadian Hydrographic Conference. For the better part of ten years Jackie served as coordinator for the annual A.G. Huntsman Award given internationally for excellence in Oceanography. This involved working with all components of BIO, the Royal Society of Canada, as well as with universities and local businesses, thereby heightening the BIO profile in the international scientific community.

After many years of lab work, field work, and data processing, Jackie decided an administrative job would be a pleasant change. It meant she could continue to work with the same great people, but she wouldn't have to get dirty or wet. So, in 1981, Jackie became the administrative assistant to the Director of MEL - Ken Mann. Here, her finesse with people and her intuitive diplomacy helped keep those independent spirits in MEL in check and their finances in the black. During this time Jackie also worked diligently on her own time to complete a Masters Degree in Business Administration, which she did with great success. In 1987, when MEL was disbanded, Jackie was well trained to move over to the Financial Planning for Science group. She was never intimidated by the job, but the move away from BIO to an office in Halifax was unsettling. Jackie never passed up an opportunity to work with friends at BIO even if it meant dressing up as a penguin, a reindeer, or a chorus-line gal for the Christmas Variety shows in support of the United Way Campaign.

Jackie officially retired in June 1991 but almost immediately moved back to a desk at BIO to work with Brian Nicholls in preparation for the Coastal Zone Canada '94 conference. The conference was a resounding success and again brought much international recognition to the BIO community. Afterwards, as part of the Coastal Zone Canada Association, Jackie set up the secretariat office and became secretariat coordinator. Jackie remains actively involved through the BIO-Oceans Association, of which she is a founding member.

Clearly, Jackie exemplifies all those characteristics the Beluga Award was established to recognize.

# BIO-OCEANS ASSOCIATION FINANCIAL REPORT - APRIL 1, 2005

By Betty Anderson

	<b>Operating Fund</b>		<b>Foundation Fund</b>	
Membership Fees:	\$ 8,033.96	<u>Donations:</u>	6,936.1229.2794.39	\$ 7,049.15
Socials:	198.89	Lunches, Beluga	129.9541.35	
Bank interest:	<u>635.92</u>	Awards		265.69
Total Income:	8,868.77	Bank Interest:		<u>0.62</u>
Less Expenses:	<u>2,615.95</u>			7,315.46
	6,252.82	<u>Expenditures:</u>		
One Business		Beluga Award		
Account with		Bank Charges		
ING Direct		and Cheques:		
covering 11 deposits		<u>Lunches:</u>		
commencing at		2002		
3.85 %, now		2003		
2.4 %:	\$5,525.00	2004		<u>7,231.08</u>
	<u>412.79</u>			
Interest:	<u>5,937.79</u>			
 <u>CASH IN BANK:</u>	 <u>\$ 315.03</u>	 <u>CASH IN BANK:</u>		 <u>\$ 84.38</u>

## Membership Report — April 3, 2005

By Betty Anderson

We have 177 on the 2004/05 membership list including nine unpaid members, four deceased members who are prepaid (Andy Atkinson, Elaine Blanchard, Mike McMullen, and Hans Neu), and one Honourary Member (Mike Friis). We send a warm welcome to Bill Stephen and Scott Young, both of whom became prepaid five-year members. Also, since they became members this *calendar* year, their membership commences at the beginning of the Association's next *fiscal* year, May 1, 2005. Reminder inserts are being included in this Newsletter for the nine members who have yet to renew their 2004/05 memberships.

Dale Buckley and Bob Reiniger are now life members, bringing this exclusive group to a total of 19.

The Telephone Committee, comprising Dale Buckley, Tom Clarke, Jackie Dale, Marlene Karg, Evelyn Penney, and Bob Reiniger, called members who do not have e-mail to advise on the dates and times for the SNS Celebrity Series Rehearsal at the Rebecca Cohn and the Tsunami talk in the BIO Auditorium. Cards were sent to Mike Eaton on the death of his wife and to Bill Whiteway on the death of his wife.

To date membership fees total \$7,713.96; this amount covers \$5,193.96 collected from 1998 to April 1, 2005, and \$2,840.00 from prepaid members for the period 2005/06 to 2027.

## NEW USES FOR GRANDCHILDREN'S DISCARDS

By Bosko Loncarevic

Visiting a shopping mall these days, one invariably encounters hordes of teenagers plugged into their iPods and other similar devices. These are clever products of technology that can store thousands of "songs" on a unit smaller than a pack of cards. Stiff commercial competition has forced rapid development, and the most recent units to hit the market now have 200,000 times more memory storage than the first shipboard computer on CSS Hudson!

CBC Radio One recently posted the complete Quirks and Quarks programs for the last 4 years on its web site, thus creating a new opportunity for early models of these ultra portable players. The files are in "MP3" format, a highly compressed audio format, so that an hour long program takes up only 5-20 megabytes of memory. Even the first generation iPod (that no self-respecting teenager would want to touch anymore) can store dozens of hourly programs, which can be heard at your convenience, making that great treasury of Science News and Trivia easily available. The CBC web site also has a searchable archive to locate the topics covered by over 500 Q&Q programs in the last 15 years. Each program covered 6 to 8 topics. A search on the keyword "oceanography" returned 12 programs, 5 of which mention BIO (in 1989, 1994, 1995, 1999, and 2002). This is not impressive compared with returns for "health" (160) and "medicine" (210). The struggle with diminishing budgets may be understandable when oceanography has been making so little Science News in recent years.

### NOTEWORTHY READS: BOOK REVIEWS IN BRIEF

By David N. Nettleship, Book Review Editor

The *Noteworthy Reads* section is an effort by BIO-OA to produce a representative list of recent noteworthy book publications related to the marine sciences and other subjects of general interest. The listing is not intended to be comprehensive or complete, but merely an attempt to highlight a number of 'good reads' that may be of interest to OA members and associates. The principal aim is to identify titles of new publications from a variety of disciplines including oceanography (physical, chemical, biological), geology, natural history, nautical engineering and design, etc. Most books listed are available at local bookstores and via HRM libraries; book prices are regular retail in Canadian funds, but remember that discounts of 20-30% are normally available on line at: e.g., amazon.ca or chapters.indigo.ca. Anyone interested in becoming a regular contributor to 'Noteworthy Reads' should contact David Nettleship (voice: 902-826-2360; internet: [dnnlundy@navnet.net](mailto:dnnlundy@navnet.net)).

#### SPECIAL REVIEW: TALES OF GENETICS, HEREDITY, AND EVOLUTION

**Dawkins, Richard. 2004. *The Ancestor's Tale: A Pilgrimage to the Dawn of Life*.** Weidenfield & Nicolson, London, UK. 528 pp. Hardcover, \$39.95 (ISBN 0-297-82503-8). – Once in a while there comes a book by a master writer that should strike us all, and Oxford biologist Richard Dawkins' brilliant '*The Ancestor's Tale*' is one such work. Here, our complete evolutionary story is recounted in a manner that reveals the evolution of life on Earth over 4 billion years and our place within it. Instead of proceeding from

simple life forms to those more complex, Dawkins tells the story in reverse. It begins with us and moves backward in time, chapter by chapter, through each convergence with a common ancestor on the 'tree of life': chimpanzees, marsupials, amphibians, flatworms, fungi and amoebae, eventually reaching the earliest bacteria. This approach underlines his basic premise that "biological evolution has no privileged line of descent and no designated end", and eliminates the temptation to view natural selection as purposeful. What makes *The Ancestor's Tale* unique and special is the fact that Dawkins is able to trace our entire ancestry – from today back to the eubacteria of 4 billion years ago – through only 40 such convergences showing vividly the deep unity of life. Overall, a truly captivating and fascinating view of evolution and the origin of life.

#### GENERAL REVIEWS

**Diamond, Jared. 2005. Collapse: How societies choose to fall or succeed.** Viking, New York, NY. 576 pp. Hardcover, \$44.00 (ISBN 0-670-03337-5). – Why do once-prosperous societies falter and stumble into decline? How can today's world civilization avoid their fate? Find out in this riveting look at the hidden causes that brought down the mighty American civilizations of the Anasazi and Mayan empires, the Polynesian cultures on Easter Island, the Viking colony on Greenland and other great societies. Jared Diamond, in his Pulitzer Prize winning bestseller *Guns, Germs and Steel*, showed how and why Western civilizations developed the technologies and immunities that allowed them to dominate much of the world. In this outstanding follow-up, he examines the root causes behind the collapse of numerous and diverse societies around the globe, and traces the pattern of catastrophe. In all cases, environmental damage, rapid population growth, unwise political choices, and climate change were principal factors in the demise of these societies. Can we learn from past mistakes to find solutions today? Surely we can, and Diamond's thorough synthesis reveals the way. This work is an essential book of our time.

**Ellis, Richard. 2004. No Turning Back: The life and death of animal species.** HarperCollins Canada, Toronto, ON. 320 pp. Hardcover, \$39.95 (ISBN 0-060-55803-2). – In recent times, more species disappear forever from our planet with each passing year, often from human destructiveness. But why did yesteryear's creatures vanish in the absence of the human presence? That is the question Richard Ellis, a celebrated marine scientist, attempts to answer in this thought-provoking and stimulating work. He travels through time to analyze the reasons for the disappearance of certain animals – including asteroid impact, climate change, and human over-hunting – and by doing so, also reveals how some species persisted and others recovered and returned unexpectedly. To underline the fact that species extinction is as old as life itself, Ellis takes us through the K-T extinction, 65 million years ago, an event that doomed the dinosaurs and pterosaurs, and many other prehistoric mass extinctions. The various theories and impact scenarios that serve to explain the disappearance of species and entire species groups are reviewed; the results demonstrate the diverse and complex nature of the suspected causal factors. Less speculation is required in historical times where the human influence on species extinction becomes more clear-cut. Expanding human populations and technological advancements through the 18<sup>th</sup> and 19<sup>th</sup> centuries resulted in excessive hunting of wildlife for meat and trophies, a pressure that resulted in many vertebrate extinctions worldwide including Stellar's sea cow and flightless cormorant, Great Auk and Passenger Pigeon, the

Quagga (relative of the Zebra) and countless others. Today, many other species teeter on the brink. This is a volume to be read and re-read by all, with particular significance to anyone concerned with the rapid decline in biodiversity owing to human activities and what can be done to reduce the rate of species extinctions.

**Fortey, Richard. 2004. Earth: An intimate history.** Alfred A. Knopf, New York, NY. 428 pp. Hardcover, \$48.95 (ISBN 0-002-57011-4). – Here is a tome that whisks us through billions of years of geological drama, a must read for anyone interested in the origin, composition and changes, of our planet. Richard Fortey, senior paleontologist at the Natural History Museum in London (UK), takes us on a journey that illuminates the intimate and often under-appreciated links between Earth today and long ago, along with how geology affects human society and culture. The tour begins with Mount Vesuvius, then moving from the Alps to Iceland to Newfoundland, and then to Hawaii, Oman, the San Andreas Fault, and numerous other locales worldwide. Each location visited serves as a catalyst for discussing some important aspect of the geological record including continental drift, the formation of islands and mountains, volcanism, and more. Fortey makes things ‘come alive’, from a description of the collage of tectonic plates that make up the floor of the Mediterranean Sea to how volcanoes formed the Hawaiian Islands and how the magnetic signature of rocks under the world’s oceans led to the understanding of continental drift. To summarize, he writes: “Nothing seems to be at rest ... the surface of the Earth dilates and collapses; the seas rise and fall; further, the very continents move.” Altogether, this large book provides a clear, comprehensive and entertaining exposition that leaves the reader spellbound.

**Fraser, Ivan. 2004. Peggy of the Cove: A legend brought to reality.** Ivan Fraser Studio, Glen Margaret, NS. 134 pp. Hardcover, \$25.00 (ISBN 0-9736872-0-9); softcover, \$15.00 (ISBN 0-9736872-2-3) [Available from Ivan Fraser Studio, 10236 Peggy’s Cove Road, Glen Margaret, NS B3Z 3J1; ph: 902-823-2083 / e-m: [ivanfraser@peggyscove.net](mailto:ivanfraser@peggyscove.net) / [www.peggyscove.net](http://www.peggyscove.net)). – Ivan Fraser, author, painter, photographer and art gallery owner/curator, is one of Atlantic Canada’s foremost authorities on the maritime history associated with “Peggy” of Peggy’s Cove, St. Margaret’s Bay, Nova Scotia. This beautifully produced book, with 17 b&w and 8 colour illustrations by the author, reviews events – fact and fiction -- of the wonderful legend of Peggy, about the shipwreck on Halibut Rock and the tragic loss of life that occurred, about Peggy, her rescue and life in the Cove. But how did the little orphaned girl receive her name? And how did the Cove come to be called Peggy’s Cove? Some think the name Peggy’s Cove already existed and Peggy was named after it. Others believe Peggy’s Cove came from an abbreviation of St. Margaret’s Bay. Whatever the truth about the origin of the Cove’s name, two versions of the legend of Peggy exist. One describes Peggy as a young woman when rescued, whereas the other is of a little girl who washed ashore too young to remember her name and called Peggy by the family that took her in. What both versions have in common is the fact that folks in the area would say: “Let’s go to see Peggy of the Cove”, and thus derived the name “Peggy’s Cove”! All these questions and more are answered in an informative and entertaining manner. Overall, a delightful account of this world-renowned girl and the region she called home. A book not to be missed by any aficionado of Peggy’s Cove and the ocean!

**Jordan, Paul. 2004. North Sea Saga.** Pearson Education Canada, Toronto, ON. 324 pp. Hardcover, \$44.95US (ISBN 0-582-77257-5). – This work recounts the story of the

peoples living on the shores of this body of water bounded by Scotland, England, France, Belgium, the Netherlands, Germany, Denmark, Sweden, and Norway, from prehistoric times to the present, and celebrates its role as battleground, barrier, highway, and resource. Although only 8,000 years old (formed after the last Ice Age), the North Sea region has a rich human history having been populated for over half a million years. The early colonizers left stone tools and hunting implements that indicate a predatory existence, whereas those that followed, Neolithic and Bronze Age settlers included innovations for farming and pottery. Paul Jorgan takes us through the era of the Celts, on to the more peaceful and prosperous first centuries of Roman presence, and the extensive trading that took place between Britain, Romanized northern France, the Low Countries, and southern Germany. Also detailed are the conquests of Anglo-Saxons and Vikings, the establishment of the Hanseatic League (a confederation of trading ports), and the relatively recent wars between the English and Spanish fleets. In the 20<sup>th</sup> century, the North Sea experienced sea battles through two world wars between Britain and Germany, followed by advances in marine technology that have culminated in booms in oil and natural gas developments and production. '*North Sea Saga*' provides a useful overview of a water body of considerable significance and historical importance.

**MacInnis, Joe. 2004. *Breathing Underwater: The Quest to Live in the Sea*.** Viking Canada, Toronto, ON. 245 pp. Hardcover, \$36.00 (ISBN 0-670-04397-4). – A thorough and gripping book about the adventurous and daring men that set out to conquer the continental shelf marine environment by learning to live and work at the bottom of the sea. A review by one of the leaders of the mission, Dr. MacInnis shows clearly how survival in the ocean depends on teamwork and the use and further development of new technologies to offset the dangers, often lethal, inherent in the underwater existence. An absorbing and exciting read.

**Marsters, Roger. 2004. *Bold Privateers: Terror, plunder and profit on Canada's Atlantic coast*.** Formac Publishing, Halifax, NS. 128 pp. Softcover, \$34.95 (ISBN 0-88780-644-9). – Privateers, unlike lawbreaking pirates of the high seas, operated legally – at least in theory – under commission from a recognized national government. Their task was to undermine and weaken the enemy's trade routes by destroying its merchant vessels. Marsters traces the careers of British, French and American privateers that ventured into Atlantic Canadian waters to ply their trade. The case studies and stories presented in the book are both fascinating and enlightening. They show the life of a privateer, mostly one of hardships and considerable danger of death or imprisonment. The details provided indicate a thoroughly researched work, one that provides accurate accounts of living a life on the high seas and the politics of the time. The book itself is a work of art: beautiful full-colour illustrations depicting details of a scene, map or document related to the text, all printed on thick glossy paper in rich and vivid colours. This is a book to relax with and enjoy.

**Murphy, Dallas. 2004. *Rounding the Horn: Being the story of williwaws and windjammers, Drake, Darwin, murdered missionaries and naked natives – a deck's-eye view of Cape Horn*.** HarperCollins Canada/Basic Books, Toronto, ON. 288 pp. Hardcover, \$39.95 (ISBN 0-465-04759-9). – Dallas Murphy, an accomplished sailor and essayist, combines his own nautical adventures at Cape Horn – South America's southernmost point – with the Cape's treacherous history and long-lost accounts of those who braved the legendary waters. After years of research about the lore surrounding the

Cape and his own voyage there, Murphy reviews many of the long-lost tales of navigation round the Horn – from Spanish missionaries to Captain Cook – interspaced with breathtaking descriptions of the surrounding lands and waters. He also shows how the myth crossed wakes with his reality. *'Rounding the Horn'* is a well crafted and enjoyable read.

**Simmonds, Mark. 2005. Whales & Dolphins of the World.** MIT Press, Cambridge, MA. 160 pp. Hardcover, \$40.50 (ISBN 0-26219-519-4). – Want to meet the mammals under the waves? There are over 80 known species of whales, dolphins, and porpoises, all warm-blooded, give birth to live young, and breathe air. Mark Simmonds, director of science for the U.K. Whale and Dolphin Conservation Society, celebrates their beauty and diversity using 160 spectacular colour photographs, with in-depth descriptions of their biology, behaviour and conservation needs. So much information is summarized in a clear and readable manner. Facts abound, from the massive size of Blue Whales – the largest animals ever to have inhabited the Earth – and the impressive migrations of Grey and Humpback whales – the longest migrations known among mammals – to the deep-diving record of Sperm Whales and the phenomena of filter-feeding by baleen whales, respiration via the top of the head, and echolocation. Details of hunting strategies are also provided, many of which are amazing. And most important, the book also addresses the numerous threats to cetaceans worldwide, human impacts on marine ecosystems that continue to increase and diversify and the actions necessary to counter them. A delightful review of the extraordinary lives of our underwater cousins!

**Villiers, Marq de and Sheila Hirtle. 2004. Sable Island: A Dune Adrift: The strange origins and curious history of a dune adrift in the Atlantic.** McClelland & Stewart, Toronto, ON. 288 pp. Hardcover, \$34.99 (ISBN 0-7710-2642-0). – This book on Sable Island – the “graveyard of the Atlantic” -- is a must read. It provides a fascinating look at the history, beauty, and natural history of one of the most feared and sought-after islands in the North Atlantic. The authors trace the unique geology and history of Sable Island, a low-lying sand dune measuring about 25 miles (40 km) long and less than a mile wide (1.6 km) wide, located roughly 150 miles (240 km) ESE of Halifax, Nova Scotia. It lies at the centre of the Great Circle Route between Europe and the New England ports, and its sandbars have claimed over 500 shipwrecks. Failed colonization ventures by Portugal, France, the Basques, and British entrepreneurs for strategic and revenue-generating purposes are reviewed. Details are also given of the natural wildlife, past and present, and the introduction of horses to the island in the early 1700s and its impact. The authors also describe the island's current role as a weather station, though fail to address the funding difficulties experienced in recent years. Overall, this latest review of Sable Island makes for a stimulating and exciting read, the next best thing to an actual visit.

**Weyler, Rex. 2004. Greenpeace: How A Group of Ecologists, Journalists and Visionaries Changed The World.** Raincoast Books, Vancouver, BC. 574 pp. Hardcover, \$39.95 (ISBN 1-551-92529-X). – An intimate and gripping story of how the revolution began and what was accomplished, as told by one of Greenpeace's founders. Rex Weyler, Pulitzer prize nominated author and photographer, details the first decade of Greenpeace's existence, from its foundation in Vancouver in 1969 through its amazing period of growth through the 1970s into an organization known worldwide as the 'voice of the environment' dedicated to the conservation of living things. In this well-written and exhaustively researched volume, details are provided of the organization's inner

workings from its beginnings as a small group of concerned people determined to stop nuclear testing (off Alaska and south Pacific atolls) and uncontrolled whaling through its evolution into the worldwide environmental lobby organization that it is today. By gathering the journals, notebooks, minutes of meetings, and tapes of events held by the principal players from those formative years, and their subsequent synthesis, Weyler has performed an invaluable service for the environmental movement. The results chronicle the strategies and rationale for conservation action, and the achievements made towards the attainment of desired conservation goals through the Greenpeace's first ten years. The need now is for a sequel that summarizes the work of the group since 1979.

## Quips and Quotes

Always be a first-rate version of yourself, instead of a second-rate version of somebody else.  
~Judy Garland

Wherever you go, go with all your heart. ~Confucius

You have brains in your head.  
You have feet in your shoes.  
You can steer yourself in any direction you choose.  
You're on your own.  
And you know what you know.  
You are the one who'll decide where to go.  
~Dr. Seuss

If at first you don't succeed, do it like your mother told you. ~Author Unknown

Shoot for the moon. Even if you miss, you'll land among the stars. ~Les Brown

Before you contradict an old man, my fair friend, you should endeavour to understand him. –  
George Santayana

Science is nothing but developed perception, interpreted intent, common sense rounded out and minutely articulated. – George Santayana

## From the Archives ... 35 years ago –

Compiled by Bosko Loncarevic

[These Highlights are excerpted from BI World Newsletter, published at the Institute between 1967 and 1973. Complete versions are posted on our web site.]

{January, 31, 1970, Vol. 4, No. 1} Ships: *BAFFIN*, on its way to hydrographic training near St. Vincent, assisted schooner *TINA MARIA*, struggling on heavy weather (detailed account of this “Drama at Sea” by R.T. Haworth). *HUDSON*, on her voyage around Americas, arrived in Buenos Aires. The Annual Meeting of Staff association elected the following executive: Ron Loucks (Pres), Roger Cassivi (1<sup>st</sup> Vice), Marion Faulkner (2nd Vice), Don Barrett (Treas.) Sharon Fowler (Sec), Paul d’Entremont and Muriel Murphy. Hal Sandstrom wrote an account of Capt. Pullen’s talk about the voyage of the *MANHATTAN* through the Northwest Passage. Hudson 70 progress summarized in 4 messages from the ship. Severe winter storm on Dec 26-27 caused a collapse of the instrument mast terminating observations with thrust anemometers on the stable platform. Ron Trites attended first meeting in Brussels of the CCMS (Committee on the Challenges of Modern Society). A Letter to the Editor by the Master of *CSS HUDSON* complained that a Senior Scientist was incorrectly referred to as “Second-in-Command”. Reg Gilbert was posted to Ottawa to help plan development of the Department of Fisheries and Forestry (!)

{February, 1970, Vol. 4, No. 2} First mention of “Project Oil”, the clean-up operation following grounding of tanker *ARROW* in Chedabucto Bay. Dr. Ford appointed as Scientific Coordinator. Bob Reiniger described “The Trials of a (Reluctant) Traveler” finding himself without a passport while on his way to join Hudson 70. Shiri Srivastava reported on the total Solar Eclipse on March 7, to be visible from Nova Scotia. Report on joint McGill-BIO study of ice drift in the Gulf of St. Lawrence. Marine Ecology Laboratory reported on the temporary pollution unit to be established in the new permanent FRB Lab building.

{March, 31, 1970, Vol. 4, No. 3} Hudson 70 progress reported in five more messages from the ship (including a line of stations across the Drake Passage). AL Grant was in Cambridge for a Continental Margins Symposium (“... all lawns were green and daffodils yellow”). Short report by Fred Dobson on the “Shades of FRAM” experiment, freezing the *MV STEPHENVILLE* in the Gulf for ice drift experiment. WMO’s new set of experiments, to evaluate usefulness of 2-3 week weather forecasts, was discussed by F. Keyte. And Ron Macnab told us about joining *BAFFIN* in Nassau for her return trip to Dartmouth. Visitors to BIO included 15 scientists from Soviet Research Ship *AKADEMIK VERNADSKIY*.

{April, 30, 1970, Vol. 4, No. 4} Two day Workshop on Air-Sea Interaction included presentation by R.W. Stewart (UBC), O.M. Philips (John Hopkins U) and M.S. Longuet-Higgins (NIO). A long article by Steve MacPhee and C.R. Peck described “The Roll of the Engineering Technician” prior to new classification exercise. Six BIO Scientist attended 51<sup>st</sup> Annual meeting of AGU in Washington. Mrs. Evelyn Penney joined BIO as Secretary to Assistant Director, BIO. John Woodside reported on “The Nature of Solid Earth”, a Symposium in Honour of Francis Birch held at Harvard U. and attended by 3 geophysicists. ICNAF completed plans for the 20<sup>th</sup> Anniversary meeting to be held at the Memorial University, St. John’s, NF. An unsigned contribution was a very funny parody of new Travel Expense regulations (“Where meals are involved, please submit menu with items ordered and prices checked. If menu is in a foreign language, you must attach an English language copy signed by an interpreter and certified by a notary public.” Etc). A new display describing oceanographic research was planned by the Canadian Government Exhibition Commission. Hydrography program for the year was outlined, involving five ships and two shore parties. A new core storage building had just been completed. Another three weekly messages from Hudson 70 received. Charlie Ross and Don Lawrence participated in SCOR Current Meter Intercomparison Experiment off West Africa.

. . . And that was that in April 1970.

## BRIEF NOTES

### Obituary

Larry Bellefontaine, a DFO and BIO veteran of just over 31 years, passed away on February 7, 2005, at the Victoria General Hospital in Halifax at the age of 59.

### Advertisement Received from Steve and Karen Grant

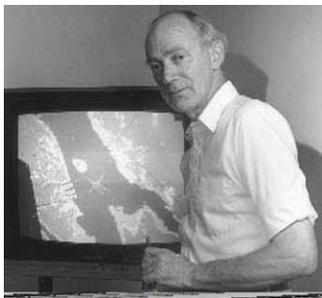
Mature, professional couple looking for furnished accommodations in the Dartmouth or Halifax area for the period 1 May 2005 to 31 October 2005. A house, condo, apartment, or cottage would be acceptable. Willing to do routine maintenance and repairs, (e.g. mowing lawn, gardening, looking after pets, etc.). We are presently cruising down south on our sailboat but we can be reached at [saorsa@pocketmail.com](mailto:saorsa@pocketmail.com).

### Is it time to renew your membership?

Did you last renew your membership for five years during our fiscal year 1999/2000? **If so**, time has marched on and **your next renewal time is May 1st, 2005**. You can verify the expiry date from your membership card. Please make cheques payable to BIO-Oceans Association and mail to Betty Anderson at 79 Flamingo Drive, Halifax, NS B3M 1T2. Many thanks!!!

## BIO-OA MEMBER MIKE EATON TO RECEIVE ORDER OF CANADA

*By David H. Gray, Canadian Hydrographic Service, Ottawa*



The Governor General's recent announcement of new recipients of the Order of Canada included Mike Eaton, a retired member of the Canadian Hydrographic Service, Atlantic Region.

R. Michael Eaton was born in England but was educated mainly in Scotland. He served 12 years in the British Royal Navy where he qualified as a watch-keeping officer and specialized in hydrography. For seven years, he surveyed the Thames Estuary, west coast of Scotland, Persian Gulf, Zanzibar, Malaysia, and Borneo.

Immigrating to Canada, he joined the Canadian Hydrographic Service (CHS) in 1957. Mike moved to the Polar Continental Shelf Project as head of the hydrographic section, 1959-63. In charge of hydrographic surveys on the ice of the Arctic Ocean, he improved the sounding technique from lowering a lead and line through holes exploded in 3 metres of sea-ice or drilled with an auger, to placing an echo-sounder transducer directly on a film of oil on the ice. In 1963, he was in charge of a survey of Hell Gate (between Devon and Ellesmere islands) where an echo-sounder transducer was towed in the open leads through the ice from a low-flying helicopter - a dangerous procedure not repeated. He was noted for being ultra-cautious when planning and working in this harsh environment - to the good fortune of his survey crews. For his endeavours, he was elected a fellow of the Arctic Institute of North America.

Transferring back to the Canadian Hydrographic Service and then to its Atlantic Region, he wrote a manual on the proper use of the medium frequency Hi-Fix positioning system, which was used extensively by CHS and other hydrographic offices worldwide. He obtained an Honours Bachelor of Science degree in physics in 1970 from Dalhousie University and was awarded his Canada Lands Surveyor's accreditation in 1982.

Mike was the first person in Canada, and possibly in the world, to apply the laws of probability to the measurements of depths and to the locations of those depths at sea. This early attention to this subject has been further developed at the Ph.D. level at several universities. Meanwhile scientists working at BIO were asking for precise navigation in their work offshore. Mike migrated into this specialty and formed the Navigation Group, becoming its head. He was involved in an inter-departmental study on the speed of Decca radio waves over seawater in 1969 and planned propagation velocity tests over sea-ice in the Beaufort Sea in 1973. He studied the speed of medium frequency radio waves along the Nova Scotia coast in 1973.

He combined various positioning systems to reduce their weaknesses, have redundancy and improve the accuracy. He used a cesium beam frequency counter on board the ship to predict Loran-C time of transmission. He later added Doppler sonar log and the ship's gyrocompass information as further inputs. These technological advances allowed CHS to do bathymetric surveys between Labrador and Greenland and in Hudson Bay and allowed scientists to do surveys as far as mid-Atlantic Ocean. For this, and his other work with Loran, Mike was awarded the Medal of Merit by the International Loran Association in 1983.

He advocated the replacement of the Decca and Loran-A stations in Canada with Loran-C, thus saving the Canadian Coast Guard millions of dollars annually, while improving the overall positioning accuracy. He recognized that the hyperbolic lattices for Loran-C had to be compensated for the errors caused by a slower velocity over land. He carried out trials in "dirty weather" on CCGS Labrador and CCGS Narwhal to test the radio reception of Loran-C at the edge of its advertised coverage area, and surveyed the signal delays in a special truck on land and from ships at sea. Thus CHS was able to provide positioning accurate to 100 metres. Over many years, he ran individually tailored navigation courses for fishermen, Canadian Power & Sail Squadron, Canadian Coast Guard and Canadian Navy encouraging the proper use of the navigation tools and to take best advantage of them.

Mike Eaton realized the potential of digital data presentation of marine charts via computer monitors. In 1982, he organized a workshop on the future of marine electronic charts where he invited experts in aircraft electronic displays, and in digital data management. In 1983, Mike portrayed the future of nautical charts as a real-time position on a cathode ray tube display with the nautical chart as background, augmented with real-time water levels corrected for tide, radar display not only from the ship but also from shore, and collision avoidance information as well. It sounded futuristic, but twenty years later much of what Mike was forecasting is now available. And Mike has had his hand in seeing it happen. He ran the CHS Electronic Chart test-bed project 1984-88, and demonstrated it during the Norwegian North Sea ECDIS (electronic chart display and information system) tests in 1988. Of the six systems on board the survey vessel, the Canadian Test-bed was the only one that provided a radar Overlay and was the only entry from a hydrographic office. He retired from CHS in 1988, accepted a Scientist Emeritus status to chair a Working Group at the International Hydrographic Organization to standardize internationally the colours and symbols used in the electronic charts. The "look and feel" of today's electronic charts - the greatest improvement in navigation in 50 years - can be attributed very much to Mike Eaton's vision.

In June 2000, he was awarded the Canadian Marine Safety Award by the Canadian Marine Advisory Council for his development and promotion of ECDIS.

At a quiet time at a conference in an unfamiliar city, Mike would strike out alone to a museum or art gallery. He would prefer to sit quietly in his hotel room with a good book than go out on the town with the boys. In his own familiar surroundings, he enjoyed his gardening and was concerned about the wildlife habitat in the rural area near his home. His wife Rosemary, who passed away on December 10, 2004, was active in the community in the crusade for the

development of the Cole Harbour Heritage Farm Museum and the provincial park surrounding Cole Harbour.

## **PARK SHIP MODELS AND BRONZE MERCHANT NAVY PLAQUES DONATED**

*By Capt. Earle Wagner, National Chair, CMNVA, Memorial Fund*

On behalf of Canadian Merchant Navy Veterans Association, which represents most surviving World War II Canadian merchant navy veterans, and as Chair of its memorial fund for over 12 years, I wish to announce the donation and presentation of two Park ships models to the Canadian War Museum in Ottawa and the presentation of bronze merchant navy plaques as gifts to six Canadian communities over the past few years.

In 2001, the 84-inch model of the *SS Maisonneuve Park*, a World War II, 4700 ton Park ship built in Montreal, later owned and operated by the Canadian National Steamships in the Canada and West Indies trade, was presented to the museum. On April 16, 2004, the 65-inch model of the *MV Nipiwani Park*, a World War II coastal tanker, built in 1943 in Collingwood, Ontario, and operated by Imperial Oil was given to the Canadian War Museum in Ottawa.

In January 1945, the *MV Nipiwani Park*, in a convoy of three ships from Sydney to Halifax escorted by a naval vessel was torpedoed near Halifax. The bow section sank and the stern section was salvaged and was moored at Imperial Oil docks for several months. Later, the bow section was rebuilt at Pictou, Nova Scotia, renamed the *Irving Lake*, owned and operated by Irving Oil to carry petroleum products. While the crew abandoned their ship, another convoy ship was torpedoed. Two seamen from the *Nipiwani Park* lost their lives. Older Canadians will remember seeing the ship at Imperial Oil.

On May 8, 2005, when the new Canadian War Museum opens, a "Triad" of models of World War II Park ships built in Canadian shipyards should be on display. A 110-inch model of a 10,000 ton Park cargo ship was shown in the old museum. It is noteworthy that approximately 130, 000 Canadians were employed in the war-time building of over 4,000 crafts of all types. Canada had the fourth largest fleet of merchant ships in the world at the end of World War II.

As a personal note, in early December 1943, I was a 19-year old second mate on the *MV Nipiwani Park* while on its maiden voyage from Montreal to Saint John, New Brunswick, where it was fitted for war-time convoy operations. I was serving in the South Pacific when the *Nipiwani Park* was torpedoed.

These tragic local war-time stories were usually censored in the press, and today they are not taught in school history classes. Reflecting on these events helps us to gain some insight into the significant and valuable role that Halifax in World War II. It is also significant to recall the high priority placed by the German High Command on their submarine fleet operations in Atlantic Canada, even when it became unlikely they could win the war.

During 2004, the CMNV A awarded bronze plaques and certificates to six communities that directly supported the Canadian merchant navy in World War II. They were Sorel, Quebec, for construction of commercial, naval, and government vessels; Levis, Quebec, for building commercial and warships; Gaspé, Quebec, for serving as a rendezvous port for ship convoys; Liverpool, Nova Scotia, for berthing a fleet of ships (two of their ships were lost) and for maintaining repair facilities; Lunenburg for ship repairs; and camp Norway; and Pictou, Nova

Scotia, for building twenty-four 4700 ton Park ships. CMNV A representatives presented awards to the mayors and citizens at special ceremonies.

Both models were built by Mark Boudreau, Port Hawkesbury, Nova Scotia, who is recognized as one of Canada's premier model builders. The models remember and honour all those Canadian who served their country in war, especially those who paid the supreme sacrifice. It also recognizes those men and women who worked in ship yards. It is a visual display representing Canada's war time ship building program and Canada's merchant seamen and their legacy for future generations of Canadians.

## WINTER SAVANNAH STYLE

*By Liz and Clive Mason*



Where to go for winter 2004/5? Memories of a flying visit in April 1997 gave us the idea of wintering in Savannah. Via the internet, we found a one-bedroom apartment just inside the Historic Landmark District of one of the earliest communities along the Atlantic Coast.

In 1733, General James Oglethorpe set foot on the marshy swampland at the mouth of the Savannah River with 114 tradesmen, craftsmen, and their families full of hope for the future. This venture was sponsored by 21 idealistic investors who paid for the ship to carry these new immigrants and set out 4 basic rules for the new colony of Georgia: No Alcohol, No Catholics, No Slaves, and No Lawyers. Needless to say, the only one of these laws still existing today is the one on Slavery. The plan was to grow mulberry trees for a silk industry and rice, but the silk

industry did not succeed. Later, cotton was planted and, with the labour of slaves, both rice and cotton made many fortunes over the next 200 years. The Trustees hoped to form a new and financially viable colony which would also give a measure of protection to South Carolina from the Spaniards in Florida. The colony was named Georgia for King George II and a plan was drawn up by Oglethorpe for the capital town and its protection.

Savannah was laid out in grid fashion but with the addition of squares containing large shady Southern or "live" oak trees which helped the inhabitants survive the brutally hot and humid climate in the summer months. In the early years, these squares were the centre of activity for the townspeople with communal ovens and small markets and churches.

Restoration is a constant feature in Savannah and the College of Art & Design (SCAD) is a major player. Few buildings have survived from the 18th century but a number of interesting houses date from the early 19th century and are open to the public. Some of these are grandiose examples of Gothic Revival and include displays showing the "before and after" of restoration with many layers of paint and wallpaper revealed. The rest are mostly churches and mid-Victorian "English" town

houses and mansions with a street level "basement" and outside staircases leading up to the front door. Ornate iron-work balconies, with window boxes set off the stucco or brickwork facades.

Old cemeteries detail the history of the town with the memorials to those lost to yellow fever, malaria, or war. Military enthusiasts can travel in the vicinity to coastal and river forts built for the fight against the British and later against the Northern forces in the Civil War. The popular book and film "Midnight in the Garden of Good and Evil" has really put Savannah on the tourist map but there are few tourists in January and February and there is a very peaceful atmosphere. The pleasures of our stay included--daily walks through the streets , enjoying the excellent range of restaurants and café's, watching the buds of the magnolias and camellias open in late February , cooking the luscious local shrimp and crab, visiting neighbouring Charleston and nearby beaches for the day and walking through the Georgia pines and Live Oak forests in the State parks. In early March, we vacated our home away from home and visited the grandchildren in Tennessee one more time before creeping slowly and carefully back north - adding layers at regular intervals.

## **DOGGONE It II: MORE PET HUMOUR**

Dear cats and dogs:

The dishes on the floor with painted paw prints on them are yours and contain your food. The other dishes are mine and contain my food. Please note, placing a paw in the middle of my plate and food and staring at me fixedly does not constitute a valid claim for it becoming your food and dish, nor do I find this emotionally or esthetically appealing in the slightest.

The stairway was not designed by NASCAR and is not a racetrack. Beating me to the bottom is not the object. Tripping me doesn't help, because I fall faster than you can run. I cannot buy anything bigger than a king-sized bed -- sorry about that!

Do not think I will continue sleeping on the couch to ensure your comfort. Many other dogs and cats can and do curl up in a ball when they sleep. It is not necessary to sleep at right angles to each other and stretched out to the fullest possible extent. Sticking tails straight out and having tongues hanging out the other end to maximize space is nothing but selfish behaviour.

For the last time, there is no secret exit from the bathroom. If by some miracle, I beat you there and manage to get the door shut, it is not necessary to claw, whine, meow, try to turn the knob, or get your paw under the edge to pull the door open. I will always exit through the same door.

To pacify you, my dear pets, I have posted the following message on our front door:

*Rules for Non-Pet Owners Who Visit Us and Like to Complain About Our Pets:*

1. We live here. You don't.
2. If you don't want our hair on your clothes, stay off the furniture. (That's why they call it "fur"niture.)
3. To you, I'm an animal. To my owner, I'm an adopted son or daughter who is short, hairy, walks on all fours, and doesn't speak.
4. Are dogs and cats better than kids? Well... we eat less, don't ask for money all the time, are easier to train, usually come when called, never drive your car, don't hang out with drug-using friends, don't smoke or drink, don't worry about having the latest fashions, don't wear your

clothes, and don't need a gazillion dollars for college – and, if we get pregnant, you can sell the children.

Signed...Your loving owner

## **Another Flippin' Quiz...for Fun**

### Questions

- 1) What occurs more often in December than any other month?
- 2) Only 14% of Americans say they've done this with the opposite sex. What is it?
- 3) Most boat owners name their boats. What is the most popular boat name requested?
- 4) What do more women do in the bathroom than men?
- 5) What do 100% of all lottery winners do?.
- 6) In a recent survey, what did Americans reveal was their favorite smell?
- 7) If you were to spell out numbers, how far would you have to go until you would find the letter "A"?
- 8) What do bullet proof vests, fire escapes, windshield wipers, and laser printers all have in common?
- 9) Married men revealed that they do what twice as often as single men?
- 10) What stimulates 29 muscles and chemicals causing relaxation? Women seem to like it light and frequent, men like it more strenuous.
- 11) What is the only food that doesn't spoil?
- 12) What day are more collect calls made on than any other day of the year?
- 13) What trivia fact about Mel Blanc (voice of Bugs Bunny) is most ironic?
- 14) 40% of all people who come to a party in your home do this?
- 15) 3.9% of all women surveyed say they never do what?
- 16) About 1/3 of all Americans say they do this while sitting?

### Answers

- 1) Conception.
- 2) Skinny dipping
- 3) Obsession
- 4) Wash their hands. Women 80% - Men 55%
- 5) Gain weight
- 6) Banana
- 7) One thousand
- 8) All invented by women.
- 9) Change their underwear.
- 10) A kiss.
- 11) Honey
- 12) Father's Day
- 13) He was allergic to carrots.
- 14) Snoop in your medicine cabinet.
- 15) Wear underwear.
- 16) Flush the toilet.

## ABOUT THE ASSOCIATION

The Bedford Institute of Oceanography Oceans Association 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 \$5.00 per year, \$25.00 per half decade, or \$100.00 for a lifetime membership. Payment for membership renewals should be sent to: Ms. Betty Anderson, Treasurer, 79 Flamingo Drive, Halifax, Nova Scotia B3M 1T2.

### *Officers and Directors*

PRESIDENT	Mr. Donald Peer d.peer@ns.sympatico.ca	857-9268
VICE-PRESIDENT	Dr. Shiri Srivastava shirisrivastava@hfx.eastlink.ca	434-6437
PAST PRESIDENT	Dr. David Nettleship dnnlundy@navnet.net	826-2360
SECRETARY	Dr. Bob Cook bobheather@eastlink.ca	868-2948
TREASURER	Ms. Betty Anderson bettyvanderson@hotmail.com	443-2572
VICE-TREASURER	Mr. Bob Reiniger r.reiniger@hfx.eastlink.ca	477-9833
DIRECTORS AT LARGE: 6100	Dr. Jim Elliott eljgj@eastlink.ca gfader@nrcan.gc.ca Mr. Timothy Lambert lambertt@mar.dfo-mpo.gc.ca Dr. Don Lawrence dlawrenc@chebucto.ns.ca Dr. Charles Schafer charlestschafer@hotmail.com	434-6072 Mr. Gordon Fader 455- 426-3872 465-5917 861-3145

### *Communications: Newsletter, PR, and Web Site*

GRAPHIC DESIGN	Ms. Lisa O'Neill loneill@hfx.eastlink.ca	864-7153
NEWSLETTER EDITOR	Mr. Michael Latrémouille latremouille@accesswave.ca	434-4036
PUBLIC RELATIONS OFFICER	Dr. Clive Mason masonc@mar.dfo-mpo.gc.ca	469-2085(h) 426-4163(o)
WEBMASTER books.com	Dr. Bosko Loncarevic	835-9606      infocd@cd-

### *Committees/ Working Groups: Chairs*

BELUGA AWARD	Mr. Dale Buckley dbuckley@ns.sympatico.ca	434-5734 (h) 426-7732 (o)
EQUIPMENT ARCHIVES	Dr. Charles Schafer charlestschafer@hotmail.com	861-3145
LIBRARY ARCHIVES books.com	Dr. Bosko Loncarevic	835-9606      infocd@cd-
PHOTO ARCHIVES	Mr. Michael Latrémouille	434-4036      latremouille@accesswave.ca