

VOICEPIPE

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The Newsletter of the BIO-Oceans Association

BIO CELEBRATES 50 YEARS



BIO celebrated 50 years of science excellence and community at a gala celebration in the William Ford Auditorium on 25 October 2012 with the parade of members of the original staff from 25 October 1962, dignitaries, music and the presentation of awards for outstanding projects in each decade of BIO's history.

Clockwise from top: Honourees piped into the Ford Auditorium; Ardith Ford (left), wife of William Ford, and Alain Vezina unveil the tribute to Dr. William Ford that will hang in the Ford Auditorium; Dignitaries present (from left) Alain Vezina (Director of Science, DFO BIO), Kevin Stringer (ADM Science, DFO), Faith Scattalon (RDG DFO Maritimes), The Honourable Gail Shea (A/Minister, DFO), Karen Ellis (Assoc. DM, NRCan), Stephen Locke (Director, GSC Atlantic, BIO) and Capt. Real Brisson (Maritime Forces Atlantic); The Honourable Gail Shea unveils the BIO 50th Anniversary plaque.



"The past is to be respected and acknowledged, but not worshipped; it is our future in which we will find our greatness." Pierre Trudeau

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SOME HONOUREES AND AWARD WINNERS



Thirty five of the original BIO staff who were on hand for the opening of the Bedford Institute of Oceanography on 25 October 1962 attended the Institute's 50th Anniversary Gala celebration.

Top from left: Rod Desborough, Bill Hart, David Benson, Brad Blackford; Bottom from left: Rosena Jackson (née Mannette), Des and Madalion Dobson, and Burt Smith.



The BIO 50th Anniversary Team (Crystal) Awards for Outstanding BIO Projects were handed out at the Gala to celebrate the innovative accomplishments of scientific and technical staff during the first 50 years of BIO research studies. These teams were recognized by their peers for the excellence of their research projects and innovation that greatly expanded knowledge and understanding of ocean environments. A total of 30 projects were recognized.

From left, 1962-1972 Award winners: Peter Wadhams (left centre) and Bernard Pelletier (right centre) representing *Hudson 70* flanked by Karen Ellis (Assoc. DM, NRCan, left) and Kevin Stringer (ADM-DFO, right), and 2002-2012 Award winner: Tanya Worcester (centre) representing the project Discovery Science in Support of the Gully Marine Protected Area.



FROM THE PRESIDENT

Here we are in the middle of winter and after two years of relatively warm winter weather, we are jolted by the reality of the Atlantic Canadian climate. On the plus side, if we bundle up, we can enjoy skating on the lakes, skiing on ungroomed trails, and tobogganing and sledding on our favorite hills.

It is also a great time to cuddle up by the fire with a good book. Take a look at David Nettlehip's "Noteworthy Reads" in this issue of the *VoicePipe* for some suggestions. His review of 'The Biological Origins of the Human Condition' by Edward O. Wilson is indeed timely. I sense from David's review that Wilson's views on the evolution of the human species may be a useful platform from which to view current events both national and international.

Also be on the lookout for future OA social activities. Claudia Currie has recently taken on the role of social coordinator for the Oceans Association and so, be sure to check your BIO-OA e-mails for notices of future events. Note that Claudia is the "coordinator" only, so please when she calls, offer to assist her in any way that you can, perhaps even offering to oversee a proposed event.

The editorial board for the 'Voyage of Discovery' is working long hours on the final editing of the manuscripts and preparation of the editorial sections of the book. Most of the work is being done by volunteers and the volume has grown from the original 200 pages to something in excess of 450 pages and so, needless to say, the publication date is a little soft and is now expected to appear early in the 2013-14 fiscal year. A marketing plan is being developed for the sales and distribution of the book, and you will see more on this via e-mail in the weeks to come. Many thanks to the people who have already placed orders for the book.

This issue of the *VoicePipe* is filled with pictures of people, faces of the last 50 years of BIO. The 2012 celebration is over, but the memories remain. The future of marine science in Canada is at yet another critical point where our regional managers are trying to salvage a credible science program with the few resources that remain. As you know, many scientists are departing BIO as a result of the budget cuts and the remaining scientists have a big challenge to try to maintain the credibility of Canada's marine science program. Couple these cuts with the government's muzzling of government scientists (see Yolanda Grisé's article on p. 4), and the state of marine science has to be at an all-time low. The science managers at BIO have a huge challenge to revitalise the marine science program. It is essential to see the halls of BIO filled again with chatter of excited young scientists going about their business, as they

did in the past, for the benefit of Canada and all Canadians. The "Oral History" of Lloyd Dickie in this issue (see p. 8) conveys the excitement that once filled the Institute.

I am happy to end my column on a positive note. Is there someone that you know at BIO that goes above and beyond their duty to encourage cooperation and foster the teamwork approach at BIO? If so, consider nominating them for the Beluga award (for details, see OA website: www.bio-oa.ca). This is your opportunity to recognize your fellow workers that go the "extra mile".

Paul Keizer

Bosko Loncarevic's Address Donation of his Arctica Book Collection to the BIO Library

Fifty years ago this building was just a shell and BIO was a marine institute only in name. Then came a small band of young, eager, well trained employees who transformed this shell of a building into a world class research centre, one of the top six in the world. This transformation was possible because of the facilities that the funding agencies provided: a superb and one of the world's most modern, research vessels CSS *Hudson*, technical facilities and expertise in workshops and laboratories, and unparalleled support services in the computing centre and the library.

The BIO library has become the National Library for Marine Science, a unique depository of knowledge in Canada, supported by several Government departments. It is inconceivable to conduct a research program without the support of a 'top flight' library with skilled and dedicated librarians.

We owe much to our BIO library, and in recognition of that debt, I wish to offer the BIO Library my collection of some 150 volumes covering two hundred years of arctic exploration.

With Canada's 'Third' Ocean rapidly losing its ice cover, future generations will face great challenges in understanding and managing this new, bountiful space. I hope that in a small way, my donation to the library will help future BIO workers gain a better understanding of the changes that had occurred "Up North" over the past two centuries. My gift is to those young, eager and well trained members who will work here in times to come, continuing to build the importance and reputation of this great Institute.

I call now on BIO Chief Librarian, Anna Fiander, to accept the first two volumes describing the first voyage through the Northwest Passage by Roald Amundsen more than a hundred years ago.

Unshackle Government Scientists and Let Them Do Their Jobs

by Yolande Grisé*

Scientific advances have shaped modern society, have led to increased health and well-being for Canadians and have played a leading role in forming public policy. The relationship between scientists and the Canadian government is critically important, given the crucial role of science advice in supporting our country's long-term interests.

The Royal Society of Canada was founded in 1882 by an Act of Parliament because it was understood that public policy and scientific research needed to be in dialogue. Policy and science are in a mutual relationship based on the importance given by government to scientific advice in policy development, and the recognition by scientists that government decisions are made democratically and must take into account evidence beyond that provided by the scientific community.

For this relationship to work, scientists have a responsibility to act ethically and to communicate their findings to the broader community. Science works only when discoveries made in the lab or in the field are communicated and debated, not only to other researchers but to all stakeholders. Governments, in turn, have to respect scientific advice and not impede the dissemination of scientific knowledge.

Scientists and the federal government can be at odds when government policy does not appear to be well-aligned with the best scientific advice. That tension is often constructive: for example, a 2010 report by scientists providing evidence that oil sands activity was polluting the Athabaska River led to several levels of government taking a fresh look at the monitoring practices and activity of the industry in the region.

This relationship is now at risk in Canada. Unreasonable limits are being placed on the ability of government-employed scientists to communicate their findings, whether through publication of their research results or attendance at scientific meetings. These restrictions seem particularly severe in topics related to the environment, where several government scientists have been denied the opportunity to discuss their work.

A well-known case is that of Kristi Miller, a scientist in the Department of Fisheries and Oceans. She published research on the Pacific salmon stock in 2010 in the international journal *Science*, but has not been allowed to discuss her work publicly since. The government, in its defence, has affirmed that it needs to control what its

employees say, arguing that what they say could be construed as representing the views of the government.

Several scientific organizations, most notably the prominent journals *Nature* and *Science*, have raised the alarm and urged the Canadian government to rescind the restrictions.

Such restrictions fly in the face of the government's own cabinet policy of basing policy decisions on the best science available. Furthermore, they go against the positions taken by countries such as the United States and the United Kingdom, where scientists are expected to give their advice independently and free of restrictions, whether or not they're employed by the government.

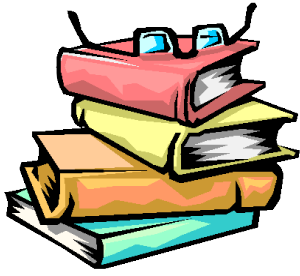
This disruption in the relationship between scientists and government is avoidable. What's needed is a policy that clarifies the relationship between scientists, the advice they provide and the federal government. This should lay out the responsibility of the government to solicit and develop the best scientific advice possible in formulating public policy. It should underscore the government's commitment to advance scientific knowledge and not to hinder its dissemination.

It should also demonstrate the government's commitment to use scientific advice in policy-making, recognizing the uncertainties that often come with it. It should ensure the independence of scientific advice from government control. And it should reaffirm the responsibility of scientists to conduct their work ethically, to communicate it fairly, and to declare their own conflicts of interest. Such a policy will strengthen the role of science in public policy development.

Canada will only succeed as a country if it's able to harness the best scientific advice to make decisions. The federal government should immediately unshackle government scientists and let them do their jobs. The integrity of evidence-based public policy development is at stake.

The public should be allowed to learn directly from our scientists when they make discoveries in areas of public concern.

*Yolande Grisé is president of the Royal Society of Canada. Reprinted with the permission of the Royal Society of Canada (originally published in *The Globe and Mail*, 4 January 2013)



NOTEWORTHY READS: BOOK REVIEWS IN BRIEF

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. Most books listed are available at local bookstores and public libraries. Book prices are regular retail in Canadian funds, but discounts of 20-30% are normally available on line at: e.g., amazon.ca or chapters.indigo.ca. Contributions of book reviews to 'Noteworthy Reads' are welcome – send via e-mail to David Nettleship: dnnlundy@navnet.net (phone: 902-826-2360).

SPECIAL PUBLICATION:

THE BIOLOGICAL ORIGINS OF THE HUMAN CONDITION

Wilson, E.O. 2012. *The Social Conquest of Earth*. Liveright Publishing (W.W. Norton), New York, NY. 331 pp. Hardcover, \$29.50 (ISBN 978-0871404138).-- In this most recent monumental work by evolutionary science's leading interpreter, Edward O. Wilson, we are taken on an exploration, like no other, of the biological origins of the human condition and its present domination of the living world. Ideas from evolution, ecology, and ethology are used to explain the whys of advanced social systems including the 'human condition' and the forces of social evolution to answer the all encompassing questions of what *Homo sapiens* represents and where the species is going. The journey begins with an intricate analysis of how social life evolved in animals and the evolutionary basis of human sociality. Wilson's work takes us from the early development of cooperative relationships among individuals, the formation of groups and the associated increases in mental processes leading eventually to the evolution of language, tools, technology, and culture. All of this and more serves Wilson's objective to demonstrate how the development of human morality, religion, art, philosophy and science are biological in nature, as is our own social behaviour. Reading this book is mind-broadening and demanding, offering a new enlightenment on the woes of the world and humankind, and the path that *Homo sapiens* must follow to best ensure the future of the human species.

General Reviews

Allen, Carla. 2012. *Shark on the Line*. CreateSpace (an Amazon company), North Charleston, SC. 134 pp. Softcover, \$15.00 (ISBN 978-1470090845).-- A lively and entertaining book that germinated from a photograph author/reporter Carla Allen took of a massive Mako Shark caught by a local fisherman in Yarmouth, Nova Scotia. The

photo, published in the Yarmouth Vanguard newspaper, became a hit on the internet circulating worldwide. So popular, Allen decided to produce a popular book to 'feed the frenzy' about sharks. The result is '*Shark on the Line*', a small, well written and researched book that goes beyond the Yarmouth tourist-directed 'Shark Scramble' tournament held each year. It provides an overview of research on sharks, their natural history and co-existence with humans, current status, and conservation needs. The balance between shark science and people's curiosity about this fascinating group of big fish is excellent, complete with entertaining and informative fishing stories and anecdotes. Definitely a book for the general public and all ages, and especially for anyone interested in sharks or fishing!

Attenborough, David and Errol Fuller. 2012. *Drawn from Paradise: The Natural History, Art and Discovery of the Birds of Paradise with Rare Archival Art*. Harper Design, London, England. 256 pp. Hardcover, \$29.00 (ISBN 978-0062234681).—An extraordinary exposure to the spectacular visual treasures of the birds-of-paradise, native only to the remote New Guinea region, and known to the western world for a short four and a half centuries. The magnificence and beauty of this family of birds was first idolized by the natives of New Guinea and then devoured by Europeans for their rich vibrant colours and bazaar nuptial feather-plume decorations of the adult males. Little was known of the biology and life histories of the 40 species before the mid-1950s, but the breathtaking beauty of these birds has been recorded by many early artists through their detailed paintings and sketches made in the wild over centuries of time. In this unique work by Attenborough and Fuller, both long-time students of the birds-of-paradise and collectors of antiquarian artwork of the birds, more than 200 rare hand-painted colour images and sketches are presented, that together provide a grand history of the birds and their diversity, as well as details of the artists, their techniques, and the growth of knowledge about the birds themselves. This showcase volume will captivate many readers, from ornithologists, biologists, and art historians to the general public through the sheer magnificence of the bird portraits and as a treat for all animal lovers.

Balmford, Andrew. 2012. *Wild Hope: On the Front Lines of Conservation Success*. University of Chicago Press, Chicago, IL. 264 pp. Hardcover, \$25.00 (ISBN 978-0226035970).—An uplifting account of seven conservation cases of biological improvement that provides a degree of cautious optimism for the future in contrast to the normally depressing times for conservation biologists and the public at large as they are bombarded by news of continued habitat degradation and biodiversity loss worldwide. Through these diverse case studies of conservation conflicts ranging

from endangered fisheries and timber developments to chronic water shortages and habitat protection, Cambridge University zoologist Andrew Balmford dissects each successful case study and identifies certain commonalities of approach among them that might be applied widely to other environmental problems. The results, though never perfect in all cases, do reveal a strong likelihood of producing enlightened management to reduce problems between opposing interest groups in any conservation conflict – engagement by all sides is the answer. This is an important book, analytic and idea generating in content, and hopeful in direction.

Banerjee, Subhanker (ed.). 2012. Arctic Voices: Resistance at the Tipping Point. Seven Stories Press, New York, NY. 550 pp. Hardcover, \$39.95 (ISBN 978-1609803858).—Here is a collection of first-person narratives that express concerns on the future welfare of arctic environments by addressing issues ranging from non-renewable resource developments to the direct and indirect impacts of climate change. Although the focus is on recent happenings in Arctic Alaska and parts of the Yukon, the central message of the need for conservation and wise decision-making can be applied to all northern regions including Arctic Canada, Greenland, Iceland, Norway, and northern Russia. More than 30 contributions by scientists, biologists, anthropologists, indigenous peoples, conservationists and natural history writers lament both recent on-going environmental changes in the Arctic – e.g., lessening sea ice, thawing permafrost, rising sea levels, more extreme weather, pollution -- brought about by human activities and those likely to occur in the near future from expanding industrial developments in the far north. This anthology is a timely reminder to everyone of the fragility of arctic systems and the extent of the damage that can be inflicted upon this remarkable region if safeguards and limits are not established and enforced. Editor and activist Banerjee Subhanker is to be thanked for producing this important and original work.

Bolster, W. Jeffrey. 2012. The Mortal Sea: Fishing the Atlantic in the Age of Sail. Harvard University Press (Belknap Press), Cambridge, MA. 416 pp. Hardcover, \$29.95 (ISBN 978-0674047655).—Historian and professional seafarer Jeffrey Bolster produces a comprehensive and insightful history of the Atlantic Ocean and the devastating human impact inflicted upon it during the last half millennium. Through a careful blending of early history, marine biology, and ecological assessment, Bolster traces the story of Atlantic overfishing and fish-stock depletion in European seas, the discovery of eastern North America with its incredibly rich fishing grounds from the Grand Banks of Newfoundland to Cape Cod, to the advent of in-

dustrialized fishing at the turn of the twentieth century. He provides the evidence to show the ‘quiet’ catastrophe that was taking place from overharvesting the sea for centuries, long before industrialization, that has led to the present widespread fishery collapse in the northwest Atlantic and elsewhere. This erudite review of the ‘catastrophic’ changes that have taken place in the North Atlantic over the last 400+ years should be interpreted as a challenge to learn from the past and execute whatever is necessary to help restore the ‘exhausted seas’ of the world. *The Mortal Sea* delivers a message of extreme importance – a ‘call to arms’ for common sense and the elimination of the destructive impact of unsustainable commercial fisheries on marine ecosystems!

Gehrman, Elizabeth. 2012. Rare Birds: The Extraordinary Tale of the Bermuda Petrel and the Man Who Brought It Back from Extinction. Beacon Press, Boston, MA. 256 pp. Hardcover, \$32.00 (ISBN 978-0807010761).—‘*Rare Birds*’ is a special book that tells the inspiring story of how one person, David Wingate, saved a seabird species believed to be extinct for centuries, the Bermuda Petrel or Cahow (*Pterodroma cahow*). In 1951, a teenage Wingate accompanied two professional ornithologists on a search for the legendary bird in the rocky-cliff habitat it was known to have occupied in the past. Quite unexpectedly, they discovered one breeding pair, a find that startled ornithological circles and made headlines around the world. But the find also imbedded a passion for conservation in the youngest member of the discovery team who went on to become Bermuda’s chief naturalist and caretaker of the seven nesting pairs that were ultimately found. Wingate has devoted his life to the Cahow and its struggle for survival, and after six decades of dedicated work to protect and restore nesting habitat for the birds, the population has increased to 100 pairs. David Wingate has fulfilled his dream and provided an incredible example of what can be done by a single person to save threatened and endangered species – an inspiration to all of us. Buy the book, read the story, and then ‘salute’ both the endemic Bermuda Petrel for its persistence in surviving despite the heavy persecution by the country’s first settlers and the bird’s ‘guardian angel’, David Wingate.

Johnson, William S. and Dennis M. Allen. 2012. Zooplankton of the Atlantic and Gulf Coasts: A Guide to Their Identification and Ecology, Second Edition. Johns Hopkins University Press, Baltimore, MD. 452 pp. Softcover, \$50.00 (ISBN 978-1421406183).-- Already a classic, this updated edition of Johnson and Allen’s ‘*Zooplankton of the Atlantic and Gulf Coasts*’ is a must-have for professionals and students of marine biology and oceanography. In addition to the details provided earlier on

the intriguing world of zooplankton including aspects of morphology, behaviour, and vivid descriptions with illustrations and tips for identifying the most common species likely to be encountered, the revised edition provides a wealth of new information. More focus is placed on species diversity, habitat usage, and ecological roles of zooplankton along with their history and environmental responses. In addition, the combination of life cycle descriptions and drawings of more than 340 taxa with details of each including distribution, habits and ecology provide an information-packed review supported by a number of appendices (collection and preservation techniques and procedures) and comprehensive reference lists of articles and books for readers desiring more detail. Overall, a valuable and up-to-date sourcebook of information on east coast Atlantic and Gulf of Mexico zooplankton.

Orenstein, Ronald. 2012. Turtles, Tortoises and Terrapins: A Natural History. Firefly Books, Buffalo, NY. 448 pp. Hardcover, \$59.95 (ISBN 978-1770851191).—A revised and expanded new edition that updates readers on the discoveries of the latest researches of this fascinating group of ancient reptiles. As in the first edition, zoologist and conservationist Orenstein provides a wealth of information on turtles, tortoises and terrapins worldwide including their evolution, life histories, amazing adaptations, and present status. This new edition reports the findings from recent researches including details on taxonomy and origins of the turtle, current status of species populations and major threats, along with outlines of conservation actions underway to safeguard the many species close to extinction. The 250 colour photographs (many new additions) combined with numerous maps, the informative text, and bibliography make for an excellent reference source for anyone interested in these long-time survivors and their future welfare.

Paterson, Andy. 2012. Pelagic Birds of the North Atlantic: An Identification Guide. New Holland Publishers, London, England. 32 pp. Softcover, \$15.00 (ISBN 978-1780092287). – Want to go birding on the open North Atlantic? Well, here is the perfect guide to have on hand to help with the identification of all the pelagic species likely to be encountered. This new guide, spiral bound and printed on waterproof paper to withstand the rigors of ocean voyages, presents details of the 56 major seabird species -- from albatrosses, petrels, shearwaters through to skuas, jaegers, gulls, terns, and the auks -- occupying the North Atlantic from the Caribbean and Cape Verde islands north to the Arctic. The 272 b&w illustrations presented provide the plumage types of each species making identification easy under most at-sea conditions. Overall, a useful guide for any serious seabird watcher or mariner cruising North Atlantic waters.

Ralchlen, Fredric. 2012. Waves. MIT Press, Cambridge, MA. 248 pp. Softcover, \$11.95 (ISBN 978-0262518239). — Want a thorough overview of ocean waves that is concise and readable? Well, this impressive book ‘Waves’ by Professor Fredric Ralchlen will likely more than meet your needs. It treats all the basics, from the evolution of waves offshore to their effects along coastlines including extreme forms such as hurricanes and tsunamis to the physics and mechanics of wind-wave generation and how waves travel, rise, break, and many other transformations. The science of waves is presented in a manner easily understood by the non-scientist as well as the marine professional with the descriptions always informative and often gripping. The complicated Sun-Earth-Moon combinations that create daily and predictable high and low tides are explained with ease, as are the histories of tsunamis, hurricanes, and storm surges along with their principal causes such as earthquakes, volcanoes, and landslides. This is a book for anyone who views the sea and ponders over its astonishing variability and power – ‘Waves’ will doubtless provide the answers!

Rieser, Alison. 2012. The Case of the Green Turtle: An Uncensored History of a Conservation Icon. Johns Hopkins University Press, Baltimore, MD. 338 pp. Hardcover, \$45.00 (ISBN 978-1421405797).—This volume is destined to become a classic, not only to sea turtle biologists and turtle enthusiasts at large, but also to readers interested in the politics and policy issues of conservation biology on an international scale and the interplay between different interest groups. The focus is on the history and present status of a single species – the Green Turtle (*Chelonia mydas*) – a species that became endangered due to overexploitation throughout its range from the unrelenting demand for turtle products, especially green turtle soup. Alison Rieser, professor of ocean policy, provides a scholarly overview of events that have taken place from the rapid growth of a commercial industry for sea turtle flesh and eggs through the 1940s and 1950s to the recognition of a species in trouble and deserving of worldwide protection. The early conservation efforts initiated by Archie Carr are reviewed in detail followed by an outline of the dramatic shift in public attitudes that occurred and the short-lived controversial venture to create and manage Green Turtle farms. The widespread efforts made to conserve and protect the species over the last few decades have allowed some recovery, though great concern remains as turtle numbers approach the level that protection under the Endangered Species Act terminates. Overall, this book provides an important summary of the plight of the Green Turtle and the complexity of the politics to save it.

FROM THE BIO ARCHIVES: The Oral Histories: Lloyd Dickie*

by Paul Boudreau and Andy Sherin

Lloyd Dickie clearly remembers his very first day at Bedford Institute of Oceanography (BIO) in 1965. He arrived as a new Director in the Atlantic Oceanographic Group (AOG) from Saint Andrew's Biological Station to an isolated stand-alone building on the shores of Bedford Basin. The BIO had only one building with four floors, populated with a few guys "that were really 'gung-ho' to do something in oceanography. I came in and I thought, I wonder where I should go? So I wandered around, but couldn't find anybody that knew where I should be." Eventually, Lloyd was told by someone, to pick an office, any empty office. He chose a long laboratory room on the third floor and reviewed the situation: "I was facing south looking down the harbour and all these windows - it was a wonderful view! I dragged in a table, then a chair and sat down, and the *Bluenose* came sailing up the harbour in full sail. I could just feel this flood of patriotism, or something, come over me. I really know why I'm here! It was a wonderful thing."

Lloyd's interest in the oceans began very naturally on the shores on the Minas Basin in his boyhood home of Kingsport, Nova Scotia. Fishing for shad with his father on the constantly moving waters of the bay sparked the question "How do you know where to set the nets?" He would spend the rest of his professional career addressing that question.

In fact, Lloyd remembers meeting A.G. Huntsman as a teenager: Dr. Huntsman "made a point of going around to interview all the fisherman who fished salmon. So he appeared in my father's house one day and that visit was the first intimation I ever had that there was a thing called 'fisheries science'. No one in the village ever went to university". Lloyd went on to receive a BSc degree from Acadia University, a MSc from Yale University, and a PhD from the University of Toronto. After his doctorate, he started his fisheries career at the St. Andrew's Biological Station in New Brunswick.

Lloyd found early success in his research. In the early 1960s he co-authored three papers on mathematical models on energy dynamics with Jyri Paloheimo entitled 'The Food and Growth of Fishes'. The papers went on to become citation classics. They described a general equation for the growth of fish in relation to their food supply developed from experimental data. The authors were quoted in 1984 (CCJ Number 16, April 1984) as saying: "Our ambition, both of us being young at the time, was

nothing short of finding a rationale for fisheries management away from the prevailing single species models." In his BIO interview, he commented on the papers by saying: "Mostly they were cited because people either disagreed with them or didn't understand them, or both." In a short time, Lloyd had made his name in the fisheries research and worked with other scientists whose names are features at BIO, such as Needler, Huntsman, Hayes and Hart.

In the mid-1960s, Ronald Hayes of Fisheries Research Board (FRB) was putting together a biological counterpart to the Department of Mines and Technical Surveys lab established by van Steenburgh at BIO. He approached Lloyd to come back to Nova Scotia and set up this new lab specifically to explore the field of marine ecosystems. Lloyd was easily convinced.

Lloyd told the story of the AOG - which would eventually become the Marine Ecology Laboratory (MEL): "It was fantastic to build MEL from the ground up. Ron Hayes had given me a very clear mandate. He wanted a group...to study the processes underlying marine production. At that time, we knew almost nothing about the basic production leading to biological production and fisheries in the whole sea. When you have a grand idea like that, it gives you all sorts of possibilities, ... and you realize you need people. I looked around and I'd find people looking for something to do and were interested in this idea of a new laboratory. Vivien Srivastava was one of the first people I hired. She was certainly one of the first women to actually work at BIO in a scientific capacity, perhaps the first. Kate Krank came shortly after that."

In his interview, Lloyd described bringing together the expertise and research interests of scientists like Vivien, Ron Trites, Trevor Platt, Bob Platford, Doug Loring and others to focus on developing a model on the marine environment in St. Margaret's Bay. He recalled the story: "St. Margaret's Bay became our laboratory. It had fish and it had lots of zooplankton, but the big thing was it had this huge water flux. We recognized that we had a very big problem to undertake which was the productivity of the East Coast fisheries. Bill Sutcliffe, Ray Sheldon and Annand Prakash had already started to look at the Gulf of St. Lawrence, and so we got the idea that - my gosh, the Gulf of St. Lawrence is the basic driving system for productivity of the entire East Coast. We tried to sell the idea of a major project to the government, but to make a long story short, it failed. However, it really did have an impact on the future research we did. It had actually sharpened our perception of some of the things

that did need to be done. I think one of the most important contributions of MEL was looking at the distributive properties and looking at the ecosystem, not as a homogeneous one, but one that had many little bits and pieces—that is individual fish, schools of fish, species within species distributions, or as communities, and so on.”

Lloyd was always exploring ways to advance the science of the oceans. Once MEL was well established, he chose to explore options for working at a university and left BIO in 1974. He accepted multiple positions at Dalhousie University: Chairman of the Department of Oceanography, Director of the Institute of Environmental Studies, and Acting Director of the Government Studies Program, as well as being a full-time professor. Lloyd recalls: “I had no idea of what was involved in taking these three or four jobs on at one time! It was a big undertaking ... a lot bigger than I thought, so after about a year, I was reduced to a certain job I could do. But it was pretty thrilling, especially for a little while.” He was a very influential chairman of the Department of Oceanography from 1974 to 1977.

Upon returning to BIO in 1978, Lloyd focused on a couple of research areas including: the development of an echo sounder for estimating size and distribution of groundfish with Dick Dowd, the relative role of environment and genetics on mussel production with Ken Freeman, as well as continuing to work on the theory and modeling of population energetics with Steve Kerr, Paul Boudreau and others.

In the BIO interview, Lloyd describes the demise of the MEL: “I felt a lot of good things had been done in our system (FRB), but there were many people who felt there ought to be more control. I don’t remember the date, but I know that one day in the early 1980s I came over to BIO from Dalhousie University and it had been determined that they were going to erase MEL. I remember leading a whole bunch of people out with black arm bands on in protest” on 1 April 1987.

Near the end of the interview, Lloyd discussed the impact of all the changes since the time of the FRB: “This whole re-ordering of the general government system is an honest attempt to try to bring together the methods of observation, modelling and the need for it. It had an impact on changing our point of view; it really did have a major impact on breaking down the barrier between oceanographic sciences and the actual needs in the pollution line, for example. I don’t have any sense of regrets or criticisms about events at BIO. I think we were doing as well as one could try to do. I think we knew an

awful lot more by 1988, or 1990, than we had known before. And that not only meant science, but sort of the place that science held in society. I think we were a little clearer about how we needed to be used more practically, as well as follow our own noses. And so I think that that 25 years had been worth a generation of maturation ... as a scientific outfit as well as people, so it wasn’t a bad adventure, actually.”

In answer to the questions about his most important contribution to science, Lloyd answered that it had started in the 1960s with the publication ‘*Food and the Growth of Fishes*’ and the understanding of the distributive elements in things. The publication of the book in 2001 ‘*The Biomass Spectrum: A Predator-Prey Theory of Aquatic Production*’ with Steve Kerr was: “An attempt to show how production processes might work in real populations. The book was satisfying because it was a kind of summary of what ... MEL had been trying to do.”

“I have never had any regrets. I am so sorry that the simple environment that I grew up in, that was so great and satisfied me so much, isn’t really available to people anymore because we’re at a new stage of doing things. Back then we had a ball. I also felt it was worthwhile. I feel that today we don’t leave quite enough room to encourage the visionary, as done in earlier days. We didn’t leave quite enough room for the right level of practicality. I have a feeling that government hasn’t really learned; it tends to bounce between one and the other. Back in 1965 the stage was visionary, and everything was wonderful. In this day and age, everything is ‘going to hell’, and what are we going to do about it? The world is, in fact, a hell of a lot better, even pollution-wise, than it was when I started. There’s been a very big improvement just applying the small things we now know. And right now, I think that the role of government is quite proper in learning to do finer and finer management, at a better and better, and far more practical level. I regret, for example, that we didn’t manage to carry our ‘stuff’ to a practical enough level so that it really could have helped anticipate the problems of the cod of Newfoundland. We failed to take what we already knew and properly apply it. In any case, I think that area is something we still have to work a lot at.”

Lloyd recalls Bill Sutcliffe remarking about BIO “I think that God said let there be oceanography in Canada, and here it is!” Lloyd is just so pleased that he was able to play a part in the BIO story.

*In 2003 a series of interviews with BIO luminaries was conducted. This article is the first of series using these interviews.

From the Editor's Keyboard: Wow! What a party! The BIO 50th anniversary Gala celebration was spectacular. What talent and just not with the musicians but the recognition of so many (30) teams with the Crystal Awards. It was marvellous to see so many old hands, especially the original staff members. I didn't arrive on the scene until 1971, but I had the pleasure of working with some of them. The year 2012 was remarkable, a conclusion easily supported by going back to previous issues of *VoicePipe* when the BIO Expo and numerous monthly public lectures were highlighted. But this brings us to the

present and looking ahead to the future. Bosko Loncarevic in his address at the Gala remarked about the eager young people who will continue to build BIO's reputation. However, it will not be without its challenges of course, which Yolande Grisé's article points out. Lloyd Dickie in his interview back in 2003 said the "government hasn't really learned, it tends to bounce between one and the other." Most importantly, BIO must not forget what has brought us this far, a community of scientists, engineers, technicians and support staff working together, doing science, innovating and finding solutions. *Andy Sherin*



ABOUT THE BIO-OCEANS ASSOCIATION

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

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

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

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**IN MEMORIAM:
NICK STUIFBERGEN, 1938 – 2012**

by Steve Grant and Mike Eaton



It is with great sadness that we learned of the passing of Nick Stuijbergen on 15 November 2012, at the Dartmouth General Hospital. Nick was born in Paarl, South Africa, and moved to the Netherlands with his parents and three siblings at the age of 12. After high school, he studied surveying at

the University of Utrecht and moved to Canada shortly after to join the Polar Continental Shelf Project (PCSP). To quote Mike Eaton: "Nick must have studied thoroughly because soon after his arrival in Canada, he conducted surveys in the Arctic, the St. Lawrence River, and other locations, and developed a very good reputation. So in the early 1970s when I had the opportunity to recruit a small BIO Navigation Group for the Canadian Hydrographic Service (CHS) I knew I needed Nick's expertise to make sense of our studies of the accuracy of our marine navigation systems, particularly an important system called Loran. Fortunately, CHS agreed to move Nick from Burlington to BIO. There he fulfilled my expectations. Analysed by Nick, the results of our Loran observations on land and at sea (in particular at the critical land/sea interface) made the Canadian positioning grid more accurate than that of the parent Loran organisation, the US Coast Guard."

When he first arrived in Canada, Nick worked with the PCSP surveying Canada's northern territories. His survey results are still being used today in preparation for Canada's UNCLOS Extended Continental Shelf submission due December 2013. Nick had his pilot's licence and loved to fly gliders. Stories persist that he also frequently 'helped' the PCSP pilots fly to-and-from the survey areas. Yet another story was that during one of his first solo flights in Ottawa, he flew into a snow squall and, in near white out conditions, dropped down so he could see the Ottawa streets and used them to find his way back to the Ottawa airport. The only problem was that the streets he picked took him directly over the Parliament buildings! Throughout his career he worked out of the Ottawa, Burlington, and Dart-

mouth offices of CHS. He was given leave to study surveying engineering at the University of New Brunswick in the early 1980s and graduated with a BSc in Engineering in 1981.

Nick worked as a hydrographer and researcher for CHS for 46 years before 'officially' retiring on 31 May 2007. But retirement hardly slowed him down, because as an Emeritus member of CHS he was a constant presence at BIO and continued to publish articles in *Lighthouse* as recently as 2010. One of Nick's last projects was as a member of a team of hydrographers and cartographers whose task it was to upgrade a number of old but otherwise high-quality British Admiralty charts of the coasts of Newfoundland and Labrador so they could be used with the Global Positioning System (GPS). As a result of his remarkable ability to adapt general mathematical principles to specific situations, he was able to develop a sophisticated map-matching procedure that compared the old Admiralty charts to modern topographic maps and by doing so 'rescued' a number of charts that would otherwise have been overlooked. The cost savings of not needing to carry out hydrographic surveys in these areas was in the millions of dollars. Nick was an employee at the opening of the Bedford Institute of Oceanography on 26 October 1962 and therefore would have been one of the Honourees at the 50th Anniversary Gala if illness had not prevented him from attending. He was awarded the Regional Distinction Award on 6 June 2003 and the team he was a member of received a Crystal Award for their achievements at the BIO 50th Anniversary celebration at 25 October 2012.

Nick was a long-time member of St. Anthony's Parish in Dartmouth where he also served as Eucharistic Minister. He also enjoyed his membership with Sears Toastmasters Club and loved to entertain members with his wide ranging knowledge of many subjects. In return, they gave him a pet nickname "the walking encyclopedia". He is survived by his loving wife of 36 years, Marcia, a sister, a brother and many nephews, nieces, grand nieces and nephews as well as aunts and uncles.

In Memoriam

Shayne Leo McQuaid, died 10 January 2013, Fisheries Habitat Officer.

Surat "Shiri" Srivastava, died 22 January 2013, Research Scientist, GSC Atlantic.

Wttewaall "Jake" van Wickenburgh, died 25 January 2013, Control Data Canada, BIO

Photo Gallery: BIO-OA Reception at Brightwood Golf and Country Club



Clockwise from top left : Garnet Roze (left), Karen Roze and Allan Ruffman; Roch Cormie and Bernie Pelletier; Iris Hardy and Tom Sephton; Dale Buckley and Carl Amos; Neil Oakley, Jim Elliot, Hal Sandstrom, and Ruth Jackson; and Hugh MacPherson and Keith Manchester.

The BIO-Oceans Association held a reception for 50th anniversary honourees, their guests, and OA members on 24 October 2012 at the Brightwood Golf and Country Club in Dartmouth, Nova Scotia. There were 180 people in attendance from as far away as British Columbia. By good authority, this was one of the largest social events held in the history of the Oceans Association.