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Canadian Meteorological and Oceanographic Society

La Société canadienne de météorologie et d'océanographie

CMOS BULLETIN SCMO

August / août 2007 Vol.35 No.4

2007 CMOS Photo Contest / Concours photographique 2007 de la SCMO

First Prize / Premier prix - *Prairie Stormscape* by/par Dave Sills

Tied for second place
Deuxième prix ex-aequo
***Snow Ghost Family* by/par Steve Knott**

Tied for second place
Deuxième prix ex-aequo
***Sunset Shower* by/par Pat McCarthy**

....from the President's Desk

Friends and colleagues:

Dr. Paul Myers
CMOS President
Président de la SCMO

I hope everyone is enjoying a good summer, whether they are doing field work, catching up on research that could not be carried out during the school term or just carrying on their day to day work in atmospheric or oceanic sciences. I hope everyone who went to the recent St. John's Congress found it as good a meeting as I did. To my mind it was one of the best congresses I had ever attended, with many interesting talks in a wide variety of sessions. Although there are issues in planning for joint congresses (as well as financial implications), the breadth of scientific interaction makes them quite attractive. CMOS thus has begun tentative discussions with CGU for holding a joint meeting again in the future, possibly in 2010. If any member has thoughts on this issue, please let me (or one of the other members of the executive) know about them. Also, while we are on the subject of congresses, I should remind all members that our 2008 Congress will be in Kelowna – preparation is well under way for what should be another top-notch meeting – so plan on attending.

Although it may not seem so long ago that the executive moved to Edmonton from Halifax, we are now well into the second year. As the executive normally remains in a location for three years, to provide some continuity and ability to have face-to-face meetings (beyond the usual monthly executive teleconference), we now have to start thinking of finding a home for the executive. Since, to help provide continuity, a potential president sits on the executive as the vice-president for the year before their term, we need to have a tentative new home for the executive in place by the end of this year (2007). Therefore, I ask all members to discuss this issue within their local Centres to see if your Centre might be interested in hosting the executive. If you need more information on the work (and number of people involved), do not hesitate to contact me or any other member of the present executive. Also, for those of you in smaller Centres, one can still get involved – for example, the present treasurer, Ron Hopkinson, is actually based in Saskatchewan rather than Alberta.

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Volume 35 No.4
August 2007 — Août 2007

Inside / En Bref

Article

CMOS 41st Annual Congress
41e Congrès annuel de la SCMO

Our regular sections / Nos chroniques régulières

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CMOS Bulletin SCMO
"at the service of its members / au service de ses membres"

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Cover page : The World expects confirmation of global warming first and strongest in the polar regions of our planet (IPCC, 2004, ACIA, 2005). Technologically and scientifically advanced nations have a unique responsibility to understand the nature and impacts of these changes in order to prepare appropriate policies for adaptation. Observations indicate that the Arctic Ocean and its peripheral seas are presently warming. The extent of Arctic sea ice has shrunk at an average annual rate of about 70,000 km^2 per year since 1979 (Barber et al. 2005). Five of the minimum extent years having occurred since 1998 (Serreze et al. 2006), with 2005 being the minimum on instrumental record. The Circumpolar Flaw Lead (CFL) system study is designed to examine how changes in the physical system affect biological processes. We propose a study with three integrated components: a) a field program, b) an Observatory, and c) a modelling effort. This triumvirate will integrate a series of testable hypotheses designed to examine the importance of climate processes in changing the nature of the flaw lead system in the Northern Hemisphere and the effect these changes will have on the marine ecosystem, contaminant transport, carbon fluxes, and the exchange of greenhouse gases across the ocean-sea ice-atmosphere (OSA) interface. The project calls for the new Canadian Research Icebreaker (NGCC *Amundsen*) to over-winter within the Banks Island flaw lead, thereby supporting a large Canadian-led international effort to understand how climate variability/change affects marine physical-biological coupling within this system as part of Canada's contribution to the International Polar Year (IPY). For more information, please read the article on **page 113**.

Page couverture: Selon le GIEC (2004) et l'ACIA (2005), on s'attend à ce que les régions polaires de notre planète fournissent la première et la plus forte confirmation du réchauffement global. Les pays développés technologiquement et scientifiquement ont la responsabilité première de comprendre la nature et les impacts de ces changements afin de développer des politiques d'adaptation. Les observations indiquent que l'océan Arctique et ses mers périphériques se réchauffent en ce moment. L'étendue de la glace de mer arctique a diminué au rythme moyen de 70,000 km^2 par année depuis 1979 (Barber et al. 2005). Cinq des années d'étendue minimum sont après 1998 (Serreze et al. 2006), et l'étendue minimum mesurée à l'aide d'instruments était en 2005. L'étude du système de chenaux de séparation circumpolaires (CSC) vise à examiner comment les changements dans le système physique affectent les processus biologiques. Nous proposons une étude à trois composantes intégrées:a) un programme sur le terrain, b) un observatoire, et c) un travail de modélisation.

(Suite à la page 111)

Canadian Meteorological and Oceanographic Society (CMOS)

Société canadienne de météorologie et d'océanographie (SCMO)

....from the President's desk (Continued / suite)

One issue that has been discussed a lot over this past year is how to get more students (being the future generation of our profession) involved with the Society. Our previous president, Geoff Strong, speared-headed the creation of an ad-hoc Student Committee reporting directly to CMOS Council. But I am not sure how many students know about it, so I call on students who read this to think about getting more involved so the Society can do more things that can help you with the development of your careers. I think one sign that the Society is not doing enough to involve students is the fact that there are a number of prizes, bursaries or scholarship supplements that are awarded each year that get very few (if any) applications each year. As some of these are quite significant (i.e. up to $5,000 per year for two years), it is important that they become more widely advertised. Although the Society keeps a list of atmospheric and oceanic sciences programs in Canada, it is nowhere near complete, especially with respect to smaller research groups working in other than obvious atmospheric or oceanic sciences departments. So, related to this, I ask any members associated with a university (whether students, post-docs or faculty) to contact the CMOS office and provide contact details for your group (and maybe graduate secretary) so that important information is as widely disseminated as possible.

Pour ceux d'entre vous qui avez eu l'occasion d'entendre mon premier discours en tant que président lors du banquet de la SCMO (see page 125 in this issue of the *CMOS Bulletin SCMO*), vous savez que j'ai mentionné que la Société a l'obligation de représenter tous ses membres, dans les domaines de la météorologie et de l'océanographie, partout au Canada. Une conséquence de cette obligation est que toutes les communications aux membres doivent être faites dans les deux langues officielles du pays. Présentement, quoique toutes les communications officielles doivent être disponibles en français et en anglais, il n'existe pas de telle exigence pour les soumissions individuelles. Quoique je ne pense pas que toutes les communications scientifiques doivent être traduites, je pense que les communications semi-officielles, telles que le *Mot du président*, doivent être faites dans les deux langues. Présentement, la politique en vigueur est que le président peut présenter ses communications dans la langue de son choix. Cette politique est très bien mais complique sérieusement la vie à ceux qui ne sont pas à l'aise en français. Évidemment, une traduction supplémentaire implique des coûts additionnels à la Société.

Paul Myers,
CMOS President / Président de la SCMO

Page couverture: **(Suite de la page 110)**

Ce triumvirat intégrera une série d'hypothèses vérifiables visant à examiner l'influence des processus climatiques sur la natrure du système des chenaux de séparation dans l'hémisphère nord et l'effet que ces changements auront sur l'écosystème marin, le transport des contaminants, les flux de carbone ainsi que l'échange des gaz de serre à travers l'interface océan-glace de mer-atmosphère. Le projet demande que le nouveau brise-glace de recherche (NGCC *Amundsen*) passe l'hiver au sein du chenal de séparation des iles Bank et supporte ainsi une grande initiative internationale dirigée par le Cadada visant à comprendre comment les changements et la variabilité climatiques affectent le couplage physico-biologique marin dans ce système, ce qui ferait partie de la contribution du Canada à l'année polaire internationale. Pour en apprendre plus, prière de lire l'article en **page 113.**

Letters to the Editor

Date: 6 July 2007

Subject: Book Review

Having read the interesting review of *"The Arctic Climate System*", written by Charles Schafer, in the June edition of the *CMOS Bulletin SCMO* (Vol.35, No.3, pp. 94-96) but being daunted by the price of the book, I was able to easily obtain a copy of the publication via the Ottawa Public Library's access to the Inter Library Loan system for the very small cost of $2. The book was obtained from the Wilfrid Laurier University Library. I am passing on this information in case of any queries regarding the availability of the book.

Having read almost all the book and with my background knowledge of weather and climate in the Arctic, I have to say that it is very sound, easy to understand and a commendable book, and that the review done by Charles Schafer in the Bulletin is also very good and helpful for potential readers.

Pat Spearey
CMOS Member, Ottawa Centre

Date: 8 July 2007

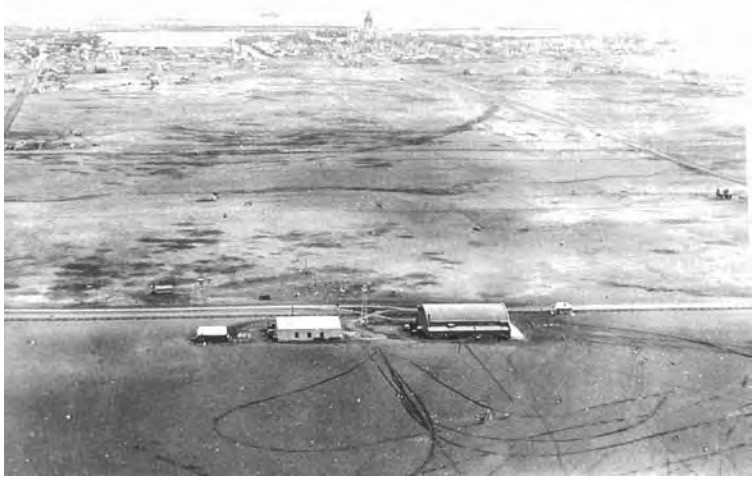
Subject: Weatherman Roy Dahl – **100** years old on May 28, 2007

In May, we had a special celebration at our church, Lakeview United in Regina, when we marked Roy Dahl's 100th birthday. During the luncheon speeches, it was identified that Roy had been a weatherman as one of his careers. Roy had told me a little about his weather career on previous occasions so he and I always had a special connection. However, I thought that I should ask Roy for a few more details and write them up to share with our meteorological community as I doubt if there are many, if any, other meteorologists of his vintage still alive.

Roy was teaching school at Milden Saskatchewan in 1937. He had a Bachelor of Science degree in mathematics and history from the University of Saskatchewan. He noted a job

advertisement in the Saskatoon Star Phoenix and applied. Sometime later, he received notification from the meteorological headquarters in Toronto to appear for an interview at the University of Saskatchewan. He traveled into Saskatoon with a colleague, Jeff Quine, who also had an interview and had been Roy's roommate at the U of S in 1929. They were both interviewed by D.C. Archibald. Roy recalls that he was asked just a few questions. First, what types of clouds were around that day? Roy said he didn't know a thing about clouds but did recall some of his grade eight science and guessed cumulus. It was summer and it turned out his guess was correct! Next he was asked about the wind direction and he thought about it and realized that their car had overheated battling the wind into Saskatoon. Again, he made an educated guess that the wind was opposing their direction of travel from the west. Finally he was asked if he could type, to which he was able to respond affirmatively, having taken touch-typing as part of a business course.

He didn't hear anything more until February 1, 1938 when he received a wire from Toronto to report for duty at the Regina Weather Office on February 5. He resigned his teaching position and made his way to Regina. He recounts meeting Earling Anderson whom he had known previously at the University of Saskatchewan. Earling introduced him to weather observing by having him observe the height of the clouds using a theodolite and running out across the field until the light was immediately above him, counting steps all the way.



View of the hangar at the Regina airport in 1938 looking east with the Saskatchewan legislative building and Wascana Lake in the distance. The arrow marks the entrance to the weather office. The little house to the right of the hanger was rented by Roy during the war for his wife and daughter while he was in Portage la Prairie.

The Regina Weather Office had opened in October 1937 with Earling Anderson as the first person there. Thereafter, he was followed by Don McGeary and then Roy. A fourth staff member joined them shortly but Roy couldn't recall his name. The original purpose of the office was to support pilot training for TransCanada Airlines but, when war broke out in 1939, each of them was sent to Toronto for further training and then assigned to air force training bases. They were replaced by female observers. Roy recounts that just before he was "sent out" he set up a weather office in Estevan with several female observers.

His first posting was at Weyburn where the RCAF was training Royal Air Force Cadets. Then he was posted to North Battleford where they were training Royal Air Force Cadets from India. Finally he was posted to Portage la Prairie for the training of RCAF pilots for the duration of the war. Roy's job during the war was weather forecasting and providing meteorological training to the pilot trainees.

After the war he was assigned to Ferry Command but he did not like the rotating shift work and so applied on a job with the provincial government and left the weather service. First he worked as Director of Vital Statistics and then with the Department of Natural Resources as Director of its Petroleum and Natural Gas Lands Division. Roy retired from the provincial government in 1972 but he continued to be active in the community. He sings with the Shriners WaWa Chanters who sang at his birthday celebration – Roy was the only one who didn't need his music! Roy attends church regularly, even during an ice storm when many others did not venture outdoors. He still drives his car – just to church on Sunday mornings. He uses a cane or a walker but for his venerable age, he is remarkably well and his memory is still sharp.

By *Ron Hopkinson* (Saskatchewan Centre), written from notes made while talking to Roy in his high rise apartment and waiting for the July 1 fireworks to begin – July 1, 2007. Roy's career in meteorology ended before I was born! Jeff Quine went on to become a meteorologist too and I recall hearing him on noon hour weather broadcasts on CKCK radio when I was growing up in Regina.

Happy Birthday Roy, from all the CMOS Community !!!

The International Polar Year: Circumpolar Flaw Lead (CFL) System Study

by David Barber[1], G. Stern[2] and J. Deming[3]

Introduction

The World expects confirmation of global warming first and strongest in the polar regions of our planet (IPCC 2004, ACIA 2005). Technologically and scientifically advanced nations have a unique responsibility to understand the nature and impacts of these changes. Observations indicate that the Arctic Ocean and its peripheral seas are presently warming. The extent of Arctic sea ice has shrunk at an average annual rate of 34,000 km^2 per year since 1979 (Parkinson et al. 1999). Five of the minimum extent years have occurred since 1998 (Serreze et al. 2000), with 2005 being **the** minimum on instrumental record. The thickness of the multiyear ice has also decreased by about forty percent over the past thirty years (Lui et al. 2004). Recent studies have also documented variations in the Northern Annular Mode and associated surface atmospheric pressure fields (Thompson and Wallace 1998). The resulting strengthening of westerly winds has increased the influx of warm Atlantic water into the Arctic basin (e.g., Polyakov et al. 2005), deflected eastward the freshwater plumes of the several large rivers (e.g., Carmack et al. 2005), and increased the export of sea ice through the transpolar drift (e.g., Kwok et al. 2001). The freshwater on the continental shelves normally forms a shield between the ice and the underlying warm Atlantic water. The eastward advection of this shield has allowed contact between the ice and the invading Atlantic waters enhancing sea-ice melt (Dmitrenko et al. 2003). In the Canada Basin the Beaufort Sea Gyre is also thought to be a significant element in the reduction of sea ice and formation of the circumpolar flaw lead (CFL). Recent results (Lukovich and Barber 2005) show that the reversal of the Beaufort Gyre, triggered by increased cyclogenesis over the Canada Basin (Zhang et al. 2003), has increased in frequency since 1990, thereby affecting both sea ice dynamic and thermodynamic processes in the region. The need to understand the complexities of sea-ice response to changing oceanic and atmospheric forcing, and the subsequent response of the marine ecosystem to this change, provides a key motivating principle for the International Polar Year (IPY) and for the CFL system study.

The circumpolar flaw lead (CFL) is a perennial characteristic of the central Arctic (Fig 1). The CFL system is formed when the central pack (which is mobile) moves away from coastal fast ice, opening a flaw lead which occurs throughout the winter season, forming first in the fall and continuing as thin ice areas in the winter season. The flaw lead is circumpolar, with recurrent and interconnected polynyas occurring in the Norwegian, Icelandic, North American and Siberian sectors (Fig. 1) of the circumpolar arctic (Barber and Massom 2006). Due to a reduced ice cover these regions are exceedingly sensitive to physical forcing from both the atmosphere and ocean and provide a unique laboratory from which we can gain insights into the changing polar marine ecosystem.

Oceanographically, the high ice production in the flaw lead system contributes significantly to brine fluxes from the continental shelves into the deep basins (Martin et al. 1993). These fluxes in turn drive biogeochemical fluxes on and off the continental shelves and control many aspects of gas and mass fluxes across the ocean/sea-ice/atmosphere (OSA) interface (MacDonald et al. 1991). Meteorologically, we expect that the flaw lead system plays a central role in the steering of cyclones within the Arctic and that the connection to the central pack likely portends a large scale teleconnection to hemispheric scale pressure patterns such as the Arctic Oscillation (e.g., Barber and Hanesiak 2004, Dmitrenko et al. 2003). Biologically, the CFL preconditions the shelves to become the most productive portions of the Arctic marine ecosystem, with the early availability of light and increased availability of nutrients through advection and upwelling at the shelf break. Early use of the CFL by apex preditors such as birds, beluga, bowhead and polar bears, and traditional use by Inuit and northern aboriginals around the world, attest to this elevated production. We expect ecosystem-wide enhancements to productivity in these areas, sustained for longer periods through the annual cycle. Biogeochemically, the CFL is productive due to rapid ice growth in the winter. This growth enhances surface (and basal) fluxes of salts within the young sea ice and plays a significant role in carbon exchange across the OSA interface.

The Circumpolar Flaw Lead System Study involves over 200 collaborators from 15 different countries.

[1] University of Manitoba, lead scientist.

[2] Fisheries and Oceans Canada, co-lead scientist.

[3] University of Washington, co-lead scientist.

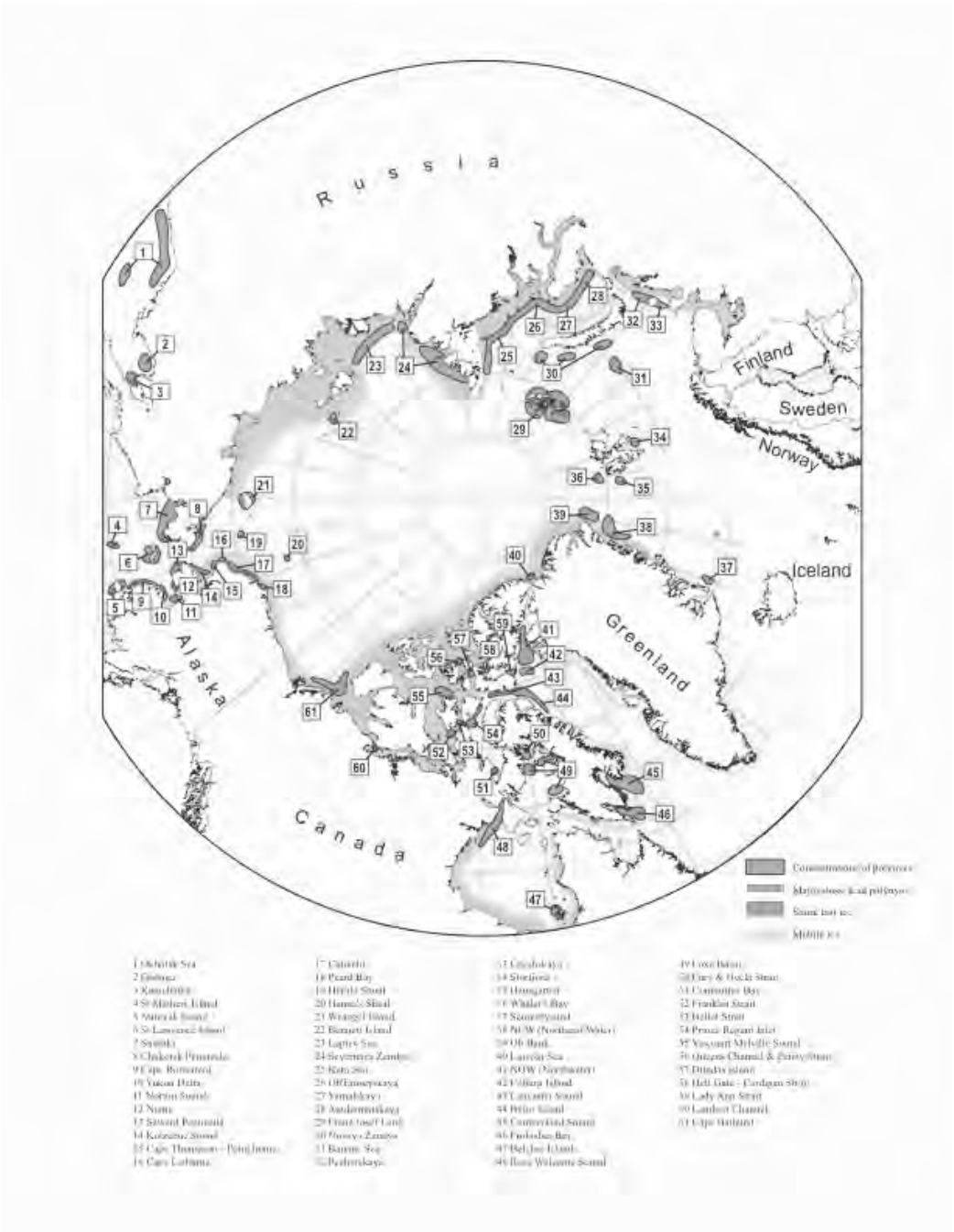


Figure 1. Collection of flaw leads comprising the Circumpolar Flaw Lead (CFL) system (light orange, major shore-lead polynyas). Also shown are all other known polynyas in the northern hemisphere (adapted from Barber and Massom 2006).

Study Area and Sampling Strategy

Although the CFL is hemispheric, we propose to focus on the Canadian component near Banks Island, NT (Fig. 2). The study area is typified by the recurrent thin ice/open water in the flaw lead and adjacent formation of fast ice greater than 150 cm in winter thickness. We discovered an ideal location for the CFL study while conducting the CASES program. A detailed summary of the setting is provided in the 'additional pages' of the full CFL proposal. Ice thickness (flaw lead) in the mid-winter ranges from open water to greater than 30 cm, making this an ideal location to study physical-biological coupling. The field study would require the over-wintering of the *Amundsen* beginning in October 2007 and continuing to August 2008. Surveys of the flaw lead would be conducted as ice forms from the northern limit of the pack ice and from the landfast ice in the south. Details of the typical growth cycle are well known and have been published elsewhere (Barber and Hanesiak 2004). The size of the study area would decrease as the ice encroaches on the flaw lead until January when the ship would enter into the landfast ice located immediately adjacent to the flaw lead, south of Banks Island (Fig. 2). An ice camp would be established using the infrastructure of parcols, snow machines, snowcat, and related essentials from the *Amundsen* pool of equipment. Temporal measurements will be emphasized at the ice camp while

spatial measurements will be emphasized during the flaw lead sampling via the *Amundsen*. On weekly intervals we propose to take the *Amundsen* from her 'landfast harbour' and conduct a 1-2 day survey of the evolving flaw lead system. The extent of the survey would be determined by the extent of the flaw lead but is expected to range between 10,000 km^2 (January) and 80,000 km^2 (June). A corridor between the ice camp and the flaw lead would be maintained by the icebreaker; since no 'stamuki' form in this region, the ship navigation would be relatively simple. A fuel barge would be moored near the fast-ice camp for refuelling of the *Amundsen*. Once melt ponds form (likely in mid-June), the ice camp would be disassembled and the study would proceed with continuous sampling from the *Amundsen* through the end of July 2008.

Science Objectives

We propose a study with three integrated components: a) A field program, b) An Observatory, and c) A modelling effort. This triumvirate will integrate a series of testable hypotheses designed to examine the importance of climate processes in changing the nature of the flaw lead system in the northern hemisphere and the effect of these changes on the marine ecosystem, contaminant transport, carbon fluxes, and the exchange of greenhouses gases across the OSA interface. We are particularly interested in the effects that changes in the flaw lead system may have on physical-biological coupling at the local to hemispheric scale and consequently how these processes affect the transport and fate of contaminants in the Arctic. The CFL project will contrast and compare the early opening (late closing) of the flaw lead, against that of the adjacent fast ice. This effort will focus on the oceanic and atmospheric forcing of the ice cover in these two regions and describe how these physical processes moderate biological function within the Arctic marine ecosystem. The science teams will collaborate on addressing a pair of interconnected hypotheses:

1) Climate variability affects the timing and extent of the flaw lead system through predictable oceanic and atmospheric controls: as climate changes (warms), these forcing will result in increased ecosystem productivity and carbon cycling.

2) Climate variability affects the adjacent fast-ice ecosystem by controlling the timing of snow precipitation and formation/decay of sea ice which in turn dictates the contributions of epontic versus pelagic production to carbon cycling: as climate changes (warms), this balance will shift to pelagic processes.

We will develop a unique dataset of the physical controls on marine ecosystem productivity in the circumpolar flaw lead system, use these data to improve physically-based models of atmospheric, sea-ice and oceanic processes, and then develop improved modelling approaches that couple biological and physical processes to predict ecosystem response in a changing Arctic. The legacy of this IPY project will include environmental 'observatories' that will be maintained in this region through ArcticNet. We will also archive the data from this project in the Canadian Cryospheric Information Network (CCIN) and other national data bases, according to international involvement.

We structure our work into the following interdisciplinary science teams:1) Physical oceanography; 2) Ocean/sea-ice/atmosphere processes; 3) Light, nutrients and primary productivity; 4) Pelagic and benthic foodwebs; 5) Marine mammals and sea birds; 6) Gas fluxes; 7) Carbon fluxes; 8) Contaminants and paleoclimate reconstructions; 9) Physical-biological modelling; and 10) Engaging Communities. We are planning for ten principal investigators within each of the ten research teams. Of these, half are expected to be Canadian and half from eleven different countries (Denmark, France, Germany, Japan, Norway, Poland, Russia, Spain, Sweden, UK and USA) collaborating in the study. We are also proposing to fund forty graduate students from Canada and ten graduate students from Russia, with other countries supporting another fifty students, funded by our international partners. The project is coordinated through the Pan-Arctic Marine Ecosystem (PAN-AME) cluster at the international level of IPY. It is also linked with Democles and iAOOS clusters of IPY. Funding for this project is being sought through NSERC and the federal IPY program in Canada. Foreign collaborators will bring existing funds to the project.

Involvement of Inuit

Based on our previous experiences, it is clear that our local Inuit partners have significant knowledge, energy and motivation to contribute to a study such as the IPY– CFL. Member of the Hunters and Trappers Committees (HTCs) will be engaged early in the planning process of CFL through public meetings to be held in the communities of Sachs Harbour, Hollman Island, Paulatuk and Tuktoyaktuk. These communities are already involved with collaborative work through a Community Based Monitoring (CBM) Program which is funded separately and has been running annually since 2004. A social sciences team (within CFL) will engage communities through the CBM program to engage Inuit through traditional and contemporary knowledge of the CFL region. A principal focus of this work will be to examine both climate change impacts and adaptation specific to this region of the Canadian Arctic. In collaboration with the Inuit Circumpolar Conference (ICC) and Fisheries and Oceans Canada, we also plan to hold a Circumarctic Climate Change Impacts and Adaptation Conference (C^3IAC) aboard the *Amundsen* in March 2008. At this workshop we will engage western science and Inuit perspectives of the challenges facing Inuit peoples due to climate change and explore ways in which northern peoples can begin to adapt to these challenges.

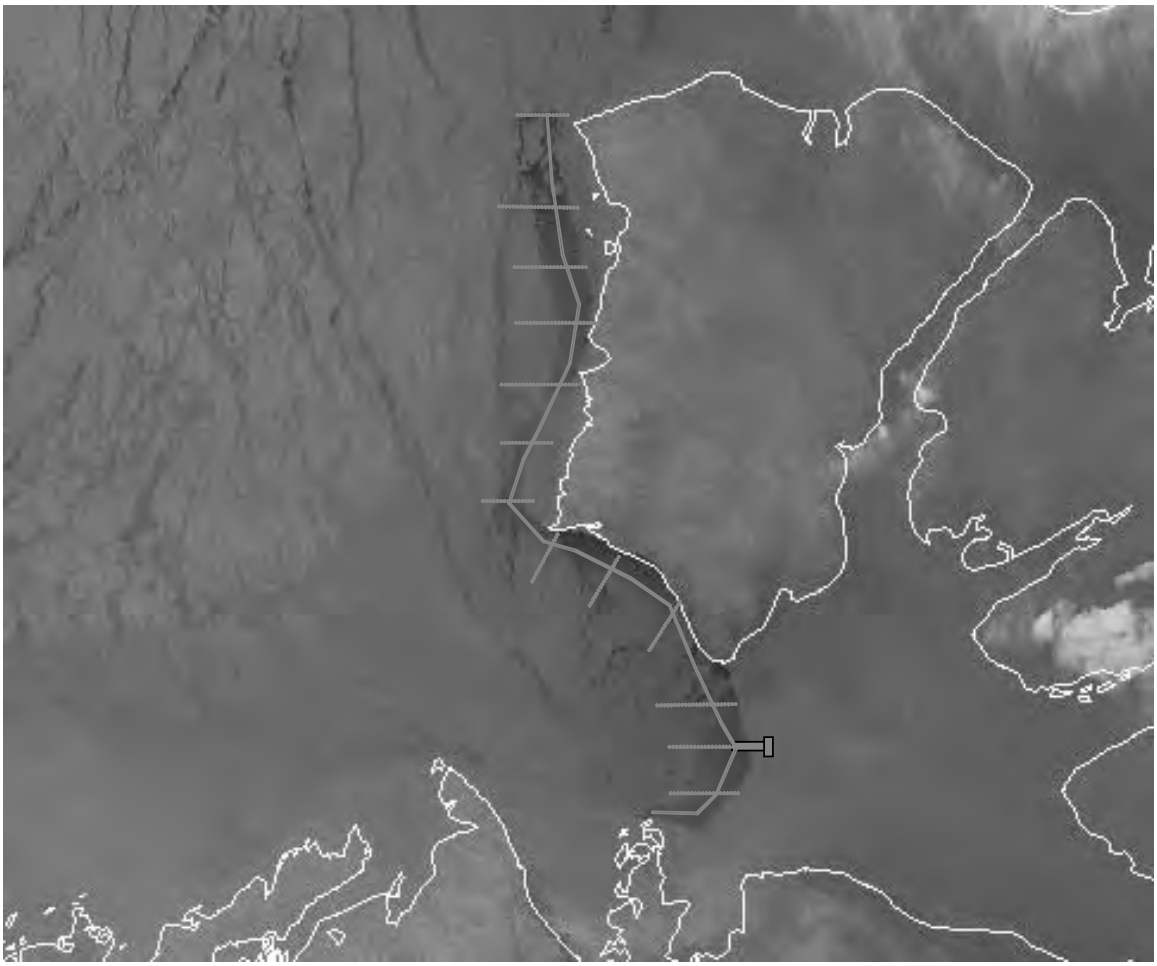


Figure 2. CFL project area in the western Canadian High Arctic, showing the location of the fast-ice and flaw-lead sampling areas. Extent of the transects will be ice-dependent. Helicopter flights, satellite download to the *Amundsen* and weather maps are used for flaw lead sample planning. The CFL study is planned to run from April 2006 to March 2010. The field program will be conducted between 01 November 2007 and 01 August 2008, with the fast-ice camp from 01 January 2007 and 15 June 2008.

Outreach and Communications

The International Schools on Board program will develop and deliver an intensive exploration of the science being conducted aboard the *Amundsen* both for schools and for individuals lucky enough to be selected to participate in the field program. Students from the 11 partnering countries (including northerners) will be selected by school divisions to participate in the field activities of the CFL and their schools will follow a select few as they integrate themselves into the science of the CFL. The concept has been tested (during CASES) and is now operating as a national program as part of ArcticNet. The concept of the 'International' Schools on Board (iS/B) is to expand this model from a national program to one that engages the international community in outreach to highlight our northern peoples, northern science and our emerging leadership role in circumarctic affairs. Our team has extensive experience in how to encourage and engage the media in polar science. We have extensive contacts in printed, radio and television and will engage with these media outlets to communicate the science of the CFL. We intend to set aside two berths on the *Amundsen* for media on each leg and will solicit national and international media outlets to take advantage of these berths. We will also focus specific media attention around the Circumarctic Climate Change Impacts and Adaptation Conference (C^3IAC) and the International Schools on Board elements of the CFL proposal. We have also partnered with the World Federation of Science Journalists to host an IPY media symposium aboard the *Amundsen* where fourteen journalists from around the world will be invited to spend five days immersed in the science of the CFL system study with a particular emphasis on how traditional knowledge and western science integrate to examine aspects of Arctic climate change and adaptation.

Source: CNC/SCOR Canadian Ocean Science Newsletter, No. 29, May 2007. Reproduced here with the authorization of the authors and the editor of the Newsletter.

2006 Patterson Medals Award Presentation

St. John's, Newfoundland and Labrador, May 30, 2007 – The Patterson Distinguished Service Medal, first presented in 1954, is considered the pre-eminent award recognizing outstanding work in meteorology by residents of Canada. This award is named in honour of Dr. John Patterson, a meteorologist who was Director and Controller of the Meteorological Service of Canada from 1929 to 1946, a crucial period in the development of Canada's weather service. This year, there were two medals presented at the 41st CMOS Annual Congress held in St. John's, Newfoundland and Labrador.

On behalf of David Grimes, Assistant Deputy Minister, Meteorological Service of Canada, the medals were presented by Charles Lin, Director General, Atmospheric Science and Technology Directorate, Science and Technology Branch, to two individuals who, throughout their careers, have provided distinguished service to meteorology in Canada, **George Boer** and **John Falkingham**.

Geprge Boer receiving the Patterson Medal from Chales Lin

In his over 35 year career at Environment Canada, George Boer, a senior researcher at the Canadian Centre for Climate Modelling and Analysis in Victoria, has made fundamental contributions to meteorology. His work has continued to assert the understanding of climate variability and change, climate sensitivity and climate predictability. Most recently George has been making important contributions in the area of carbon cycle modeling and the terrestrial ecosystem. George is a highly respected researcher both nationally and internationally in the development and application of global climate models. He has had a prolific publications record of his work that includes over fifty papers and book chapters in the last decade alone.

Most outstandingly, George has contributed to the development of the Canadian global climate model, a product widely recognized as one of the top climate models in the world and is used extensively in the UN's Intergovernmental Panel on Climate Change (IPCC) assessments. His work has contributed to the stature of Environment Canada, Canada as a whole and to the international climate research community. In addition to this, George has served as a mentor to many scientists now working in both the government and academic sectors.

John Falkingham has served in several key positions at the Canadian Ice Service (CIS) over his career that has spanned decades. He is considered the father of the modern ice service, having steered it into its transformation from paper to electronics, aircraft to satellite operations. John continues to strive at combining superlative science, the best technology and capable people to deliver excellence in ice information services to mariners, policy-makers and the inquiring public. Through his leadership, the CIS has evolved, becoming acknowledged as a world-wide leader in ice forecasting.

John was also the mainstay of the Canadian-United States Joint Ice Working Group for decades and oversaw its evolution into the more formal North American Ice Service (NAIS). NAIS is noted as the most advanced of any Canada-US meteorological partnership. At a time when funding for Arctic science was difficult to find, with John's encouragement, the CIS promoted sea ice remote sensing research with University professors and students. Today these earlier partnerships continue and this research now receives better funding through initiatives like Arcticnet and the International Polar Year.

Présentation des médailles Patterson 2006

St-Jean, Terre-Neuve et Labrador, le 30 mai 2007 – La médaille pour services distingués de Patterson, qui a été décernée pour la toute première fois en 1954, est considérée comme le prix le plus important pour la reconnaissance du travail exceptionnel réalisé en météorologie par des Canadiens. Le prix a été créé en l'honneur de M. John Patterson, un météorologue qui a été directeur et contrôleur du Service météorologique du Canada de 1929 à 1946, un période importante dans le développement du service météorologique du Canada. Cette année, deux médailles ont été présentées au 41e congrès annuel de la SCMO tenu à St-Jean, Terre-Neuve et Labrador.

Au nom de David Grimes, Sous-ministre adjoint, Service météorologique du Canada, Charles Lin, Directeur général, Science et technologie atmosphériques, a présenté les médailles à deux personnes qui ont fournis au cours de leur carrière des services exceptionnels à la météorologie canadienne: **George Boer** et **John Falkingham**.

George Boer jouit d'une grande réputation, tant à l'échelle nationale qu'à l'échelle internationale, dans le domaine du développement et de l'application des modèles climatiques globaux. Un grand nombre de ses travaux ont été publiés : ils ont fait l'objet de plus de 50 articles et chapitres de manuels seulement au cours des dix dernières années. En plus de 35 ans de carrière à Environnement Canada, il a grandement contribué à accroître notre compréhension de la variabilité et des changements climatiques, de la sensibilité et de la prévisibilité du climat, et plus récemment, il a beaucoup apporté au domaine de la modélisation du cycle du carbone

et de l'écosystème terrestre.

George s'est particulièrement distingué en participant au développement du Modèle climatique global canadien, un produit qui est largement reconnu comme étant l'un des meilleurs modèles climatiques au monde et qui est grandement utilisé lors des évaluations faites par le Groupe d'experts intergouvernemental sur l'évolution du climat (GIEC) de l'ONU. Ses travaux ont contribué au prestige d'Environnement Canada, du Canada tout entier et de la communauté internationale de la recherche sur le climat. Par surcroît, George a servi de mentor à bien des scientifiques qui travaillent aujourd'hui tant pour le gouvernement que pour le milieu universitaire.

Au cours de sa carrière, qui s'est étendue sur des décennies, John Falkingham a occupé plusieurs postes clés au sein du Service canadien des glaces (SCG). On le considère comme le père du service des glaces moderne, lui qui l'a incité à abandonner le papier au profit de l'électronique, et les avions au profit des satellites. John continue de mettre tout en œuvre pour offrir aux marins, aux responsables des politiques et au public intéressé ce qu'il y a de mieux dans le domaine des services d'information sur les glaces en tirant profit de travaux scientifiques de grande qualité, de la meilleure technologie et d'un personnel compétent.

John Falkingham recevant la médaille Patterson des mains de Charles Lin

Pendant des dizaines d'années, John a aussi été le pilier du Groupe de travail conjoint Canada-États-Unis sur les glaces et a supervisé son évolution jusqu'à ce qu'il atteigne son statut plus officiel de Service des glaces de l'Amérique du Nord (SGAN). Le SGAN est reconnu comme étant le plus avancé de tous les partenariats entre le Canada et les États-Unis. À une époque où il était difficile de trouver du financement pour les sciences de l'Arctique, et sous les pressions de John, le SGC a encouragé la recherche sur la télédétection des glaces de mer auprès des professeurs et des étudiants. Grâce à ces anciens partenariats, les scientifiques canadiens sont devenus des chefs de file dans le domaine de la recherche sur la télédétection des glaces de mer. Cette notoriété leur permet aujourd'hui d'obtenir de meilleurs financements pour leurs travaux grâce à des initiatives comme ArcticNet et l'Année polaire internationale.

Parsons Medal Award Presentation

The Department of Fisheries and Oceans (DFO) established the Timothy R. Parsons Medal to recognize excellence in Canadian ocean sciences. The Timothy R. Parsons medal is awarded to a scientist for distinguished accomplishments in multidisciplinary facets of ocean sciences either during their lifetime or for a recent outstanding achievement, while working for Canadian institutions for the benefit of Canadian science.


Dr. Savithri Narayanan announcing the 2007 Parsons' Medal Winner in St. John's, NL, on May 30, 2007.

The award commemorates Dr. Tim Parsons for his distinguished career as a researcher with the Fisheries Research Board of Canada, a university professor, mentor, and broadly read author and now, in retirement, still working, mentoring and publishing!

In his legacy, DFO is pleased to announce that the recipient of the 2007 Timothy R. Parsons Award is **Dr. Carl John Walters**, a professor at the University of British Columbia. In the absence of Dr. Wendy Watson-Wright, Assistant Deputy Minister, the announcement was made by Dr. Savithri Narayanan, Director General, Ocean Sciences and Canadian Hydrographic Service, DFO, on May 30, 2007, in St. John's, Newfoundland and Labrador.

Dr. Walters was selected for his career-long contributions, integrating mathematics, fisheries and ecosystem science. He uses mathematical modeling and computer simulation techniques to better understand the dynamics of exploited marine and freshwater ecosystems.

His ideas and research in the development of "adaptive management " strategies and his mathematical models and computer simulations, such as ECOSIM, have made significant contributions and informed management and policy decisions for the sustainable harvest of fisheries resources, globally.

It is interesting to note that Carl's career path in fisheries biology was first influenced by his grandfather, who ran a fish hatchery in the foothills of Albuquerque, New Mexico. His later pursuit of mathematical solutions to inform management strategies and policy decisions for sustainable fisheries and ecosystems was influenced early in life through his involvement with water conflict and policy issues in the desert valley along the border of his native New Mexico and California.

From left to right: Drs. Tim Parsons, Wendy Watson-Wright and Carl Walters during the presentation at the UBC Fisheries Centre in Vancouver, June 7, 2007. Photo courtesy of John Corry.

Carl earned a Bachelors degree in Fisheries Biology from Humboldt State College (in northern California) and his M.Sc. and Ph.D. in Fisheries Science from Colorado State University, studying alpine lake ecosystems. During this time he also worked for the California Department of Fish & Game and the Colorado Game, Fish and Parks Department.

Carl's first appointment was to the University of British Columbia in 1969, He received tenure in 1974, and rose through the ranks of Associate Professor, and then full Professor in 1982. He is currently head of the Quantitative Modeling Group at the UBC Fisheries Centre. Incidentally, the Fisheries Centre promotes multidisciplinary studies of aquatic ecosystems and broad-based collaboration with maritime communities, government, NGOs and other partners.

Carl's main research work is on the theory of harvesting in natural resource management, with a primary interest in the basic problem of how to behave adaptively in the face of extreme uncertainty.

He is one of the main developers of the ecosystem simulation program known as **Ecosim**, which is being used to test ideas about organization of trophic interactions in marine systems, and the implications of these interactions for sustainable harvesting theory. His research spans many species and fisheries stocks, in both marine and fresh water ecosystems, including alpine, north Pacific, and Gulf Stream waters. He has conducted notable research on North American salmon stocks. One keynote speech he gave was entitled: *"Where have all the Coho gone?*"

Dr. Walters also spends the fall semester each year as an Eminent Scholar at the University of Florida, Department of Fisheries and Aquatic Sciences. There, he conducts research on harvesting strategies and sustainability of various sport and commercial fisheries. Sport fishing, in particular, is very important to the Florida economy and commercial harvests have impact on the sustainability of the ecosystems. He also teaches, mentors graduate students, and, of course, … fishes...

Carl also spent two winters in residence as the "Mote Eminent Scholar" dividing his time between Florida State University in Tallahassee and the Mote Marine Lab just offshore Sarasota. During this period he did field work and advised graduate students. His research included net sampling fish populations in local creeks and canals, and population analyses of Florida game fish. He even got nailed through the wrist by a manta ray!

Dr. Walters has certainly made an impact with significant publications. He has written over 150 articles and three books, in use as university text books and the basis of several courses. The now classic "Adaptive Management of Renewable Resources" was first published in 1986 and reprinted in 2002. Dr. Walters is the author, with Ray Hilborn, of "Quantitative Fisheries Stock Assessment" of which the reviewers said: "*This is the first textbook to capture the spirit of the new fisheries management, in that it is driven by a recognition of the dynamic nature of fish populations and the application of computers and systems analysis to fisheries problems. It contains detailed numerical methods for the formulation of harvesting strategies*."

More recently, Dr. Walters along with Dr. Martel, published "Fisheries Ecology and Management", said to be: "*the next major contribution to the field of fisheries science. Walters and Martel provide fresh and non-intuitive perspectives on a variety of issues. Their merciless slaughtering of cherished sacred cows is supported by sound scholarship, and cogent, well-reasoned arguments. This will become a landmark work*."

Dr. Walters also has an outstanding record in the fifth criterion of the Parsons Medal, which is program, disciplinary, and interdisciplinary leadership activities. He gives workshops regionally and internationally, and is the associate editor of a diverse range of journals from applied mathematics to environmental management, software development, to fisheries and aquatic sciences.

The final criterion of the Parsons Medal is leadership. Dr. Walters has received national and international recognition for his contributions and leadership. He became a Fellow of the Royal Society of Canada (1998), and in 1991, he was named a Fellow with the Pew Institute for Ocean Science, in partnership with the University of Miami Rosenstiel School of Marine and Atmospheric Sciences. As a Pew Fellow, he tested multi-species ecosystem models for experimental management approaches to support ecosystem-scale harvest policies.

This past year, Fisheries scientists at Simon Fraser University have named their newest research vessel after UBC Fisheries Centre faculty member Prof. Carl Walters. A 10-metre, welded-aluminum vessel built in Port Alberni, the CJ Walters, carries a remotely-operated mini-sub, equipped with global positioning system instruments and advanced acoustic systems for seabed habitat mapping and fish tracking. It is a highly versatile platform, for conducting marine research from shallow waters down to 2000 feet. Dr. Sean Cox, Assistant Professor in the SFU School of Resource and Environmental Management, says he decided to name the boat the CJ Walters for two reasons: 1) "*To acknowledge Carl's*

contributions to fisheries science; and 2) Because the boat is ideally suited to the types of innovative, small-scale fisheries field work that Carl really enjoys".

Also in 2006, Carl was awarded the prestigious Volvo Environmental Prize, presented by the Swedish Minister of Industry and the CEO of Volvo, for his outstanding work in Marine Biology. It was the first time the prize was awarded in fisheries science. The Volvo Environment Prize is awarded for "*Outstanding innovations or discoveries scientific, socio-economic, or technological which have direct or indirect significance in the environmental field and are of global or regional importance*". Carl's citation reads "*for his brilliant analyses of fishery stocks and harvest management and his seminal writings about adaptive management now widely used by ecologists, other scientists and managers throughout the world*".

Dr. Walters contributions, ideas, publications and leadership, are evident through his body of work and activities. What epitomizes his character and commitment to students and young scientists can be expressed in his own words - - from the thank-you speech Carl delivered on behalf of the three Volvo laureats where he spoke about the value of mentorship in developing the careers of himself, and his colleagues, Dr. Hilborn and Dr. Pauly, and about how important it was for established scientists to mentor younger scientists and teachers as they start careers in the same fields, giving them confidence and opportunities to look beyond traditional theories and techniques.

Présentation de la médaille Parsons

Le ministère des Pêches et des Océans (MPO) a créé la médaille Timothy R. Parsons afin de souligner l'excellence dans le domaine des sciences de la mer au Canada. Cette médaille sera remise à des scientifiques qui se distinguent dans un domaine multidisciplinaire lié aux sciences de la mer et ayant œuvré au sein d'une institution canadienne, afin de reconnaître l'ensemble de leur carrière ou une réalisation exceptionnelle récente au profit de la science canadienne.

La médaille a été nommée en l'honneur de M. Timothy Parsons, qui a mené une carrière extraordinaire en océanographie, aussi bien au Canada qu'à l'étranger. M. Parsons est présentement professeur émérite à l'Université de la Colombie-Britannique et chercheur honoraire à l'Institut des sciences de la mer de Sidney, en Colombie-Britannique. Au cours de sa carrière, il a mis au point une nouvelle approche écosystémique intégrant des données océanographiques pour la gestion des pêches.

Cette année, la médaille a été octroyée au **Dr. Carl Walters**. L'annonce a été faite lors du 41^{e} Congrès de la Société canadienne de météorologie et d'océanographie tenu à St-Jean, Terreneuve et Labrador. En l'absence de Mme Wendy Watson-Wright, sous-ministre adjointe, Mme Savi Narayanan, Directrice-générale, Sciences océaniques et Service hydrographique du Canada, en a fait l'annonce lors de la cérémonie annuelle tenue le 30 mai 2007.

Autant écologiste que mathématicien, Carl J. Walters a mis à l'épreuve de nouvelles théories et pratiques écologiques et une nouvelle approche de gestion (à l'aide de systèmes informatiques de pointe dont il a lui-même contribué à la conception) qui occupent aujourd'hui une place centrale dans un domaine multidisciplinaire en expansion: la science de l'environnement aquatique et océanique.

Dr. Savithri Narayanan annonçant le récipiendaire de la médaille Parsons pour 2007 à St-Jean, NL, le 30 mai 2007.

M. Walters est considéré comme le créateur de la théorie et de la pratique de la gestion adaptative, laquelle représente une révolution dans l'étude statistique, mathématique et empirique des systèmes dynamiques complexes. Son approche a donné naissance à Ecosim, un cadre de modélisation utilisé partout dans le monde pour prédire les modifications dans les écosystèmes qui découlent des changements dans les pêches et les milieux marins.

Il a mis ses recherches à l'essai dans des études de cas portant entre autres sur la Grande Barrière d'Australie, les Everglades de Floride et la pêche au saumon rouge dans le fleuve Fraser de Colombie-Britannique. Il a travaillé sur la prédiction des patrons des interactions trophiques dans les écosystèmes aquatiques (ce qui est généralement appelé foraging arena theory) et sur la théorie et la pratique de l'évaluation des stocks.

Carl J. Walters est professeur à l'Université de Colombie-Britannique (UBC) depuis 1969 et a récemment été élu membre de la Société royale du Canada. En 2006, en compagnie de deux autres membres du Fisheries Centre de la UBC – Daniel Pauly, Ph. D., et Ray Hilborn, Ph. D. –, il a reçu le Volvo Environment Prize, un prix accordé pour des "innovations ou découvertes scientifiques, socioéconomiques ou technologiques remarquables qui ont une pertinence directe ou indirecte sur l'environnement et revêtent une importance mondiale ou régionale".

CMOS Prizes and Awards announced at the 41st Annual Banquet

Delta Hotel, St. John's, Newfoundland and Labrador
May 31st, 2007

President's Prize
may be awarded each year to a member or members of the Society for a recent paper or book of special merit in the fields of meteorology or oceanography. The paper must have been accepted for publication in ATMOSPHERE-OCEAN, the *CMOS Bulletin SCMO* or another refereed journal.

Awarded for 2006 to **Howard Freeland,** for his outstanding leadership in the development of a global array of drifting Argo floats documented in his paper, co-authored with Patrick Cummins, "*Argo: A new tool for environmental monitoring and assessment of the world's oceans, an example from the N.E. Pacific*", published in *Progress in Oceanography*, 2005, vol. 64, pp. 31-44.

Also awarded in 2006 to **Andrew John Weaver** for his pioneering work in earth system climate modelling and in particular for the article he co-authored in *ATMOSPHERE-OCEAN* entitled "*The UVic Earth System Climate Model: Model description, climatology and application to past, present and future climates*". This paper has already been cited more than 90 times.

Tully Medal in Oceanography
may be awarded each year to a person whose scientific contributions have had a significant impact on Canadian oceanography.

Awarded for 2006 to **Simon J. Prinsenberg** for his long history of research and development advances in the Arctic and sub-Arctic oceans. In particular, his outstanding ability to conceive of new instruments required to perform unique measurements in these harsh environments has led to breakthroughs in our understanding of both oceanic and glacial processes that influence the northern environment.

Andrew Thomson Prize in Applied Meteorology
may be awarded each year to a member or members of the Society for an outstanding contribution to the application of meteorology in Canada.

Awarded for 2006 to **Amir Shabbar** for his important contributions to applied meteorology in Canada, through his many papers on the seasonal variability of Canadian climate, especially the effects due to the El Niño-Southern Oscillation and the North Atlantic Oscillation, and his development of a statistical model for the seasonal prediction of Canadian climate.

Rube Hornstein Medal in Operational Meteorology
may be awarded each year to an individual for providing outstanding operational meteorological service in its broadest sense, but excluding the publication of research papers as a factor, unless that research has already been incorporated into the day-to-day performance of operational duties. The work for which the medal is granted may be cumulative over a period of years or may be a single notable achievement.

Awarded for 2006 to **Owen S. Lange** for his dedicated and excellent contributions to operational marine meteorology and the west coast marine community. Owen's background as a world traveled marine meteorologist combined with his extensive contacts with BC marine clients resulted in the creation of a number of important reference materials including *The Wind Came All Ways (1998)*, CD-ROM entitled *Coastal Weather for British Columbia Mariners (2000)*, and *Living with Weather along the British Columbia Coast (2003)*. Owen has also proven to be an exceptional coach and mentor for young meteorologists at the Pacific Storm Prediction Centre.

The Prize in Applied Oceanography
may be awarded each year to a member or members of the Society for an outstanding contribution to the application of oceanography in Canada.

Awarded for 2006 to **Keith Thompson, Harold Ritchie, Josko Bobanovic, Natacha Bernier, Serge Desjardins, Allan MacAfee** and **George Parkes** for the development and implementation of a new operational storm surge model at MSC-Atlantic. This system, recently enhanced with tidal information to form a Storm Surge and Water Level Alert System, has already demonstrated its value with timely warnings for a number of severe coastal marine events.


Harold Ritchie & Keith Thompson

The CMOS Graduate Student Prizes
may be awarded each year for contributions of special merit by graduate students registered at a Canadian university or by Canadian graduate students registered at a foreign university. One of these prizes should be named the **Tertia MC Hughes Memorial Prize**.

The Tertia M.C. Hughes Memorial Graduate Student Prize for 2006 is awarded to **Aldona Wiacek** for her outstanding Ph.D. thesis work at the University of Toronto, entitled "*First Trace Gas Measurements Using Fourier Transform Infrared Solar Absorption Spectroscopy at the University of Toronto Atmospheric Observatory*". Her combination of careful experimental work and rigorous data analysis resulted in this instrument becoming part of the international Network for the Detection of Atmospheric Composition Change, and led to the first detection of NO in the mesosphere and lower thermosphere using a ground-based infrared spectroscopy.

CMOS Graduate Student Prizes
are awarded for 2006 to:

• **Chris Fogarty** for his pioneering work in modelling extratropical transition events in the North Atlantic, including the implementation of a vortex-insertion scheme and other innovative techniques, during his Ph.D. thesis work at Dalhousie University. Moreover, as an avid observer, he prefers to obtain his environmental information firsthand, and his infectious enthusiasm for the task invariably influences the outcome in a positive way.

• **Jeffrey Philip Lewis** for his important contributions to the improvement of physics in sea ice modelling and to surface albedo effects in deglaciation during his Ph.D. thesis work at the University of Victoria, as documented in his thesis "*Snowball earth sensitivity to sea ice and surface albedo*".

The Roger Daley Postdoctoral Publication Award
The Roger Daley Postdoctoral Publication Award, valued at $2000, is to be made annually to a candidate who, at the time of nomination, is working in Canada in a non-permanent position as a postdoctoral fellow or research associate, and is within five years of having received a doctoral degree. The award is to be based on the excellence of a publication in the fields of meteorology or oceanography that has appeared, or is in press, at the time of nomination. The first award is to be made in 2005, and the awards will continue as long as the fund established by Mrs. Daley, together with other contributions solicited through CMOS, will permit.

Awarded in 2006 to **Jordan Tyler Dawe,** University of Washington, Seattle, Washington, USA, for his outstanding contribution to ocean dynamics and modelling by showing the importance of including ocean currents when calculating the wind momentum transfer to the ocean. His paper, co-authored with his doctoral supervisor, Luanne Thompson, entitled "*Effect of ocean surface currents on wind stress, heat flux, and wind power input to the ocean*" was published in the Geophysical Research Letters, 2006, Volume 33, CiteID L09604.

The CMOS / Weather Network / Météomédia Scholarship
(offered to a Canadian female student enrolled in the 3rd or 4th year of an atmospheric science degree program at a Canadian university and with career aspirations as a forecast meteorologist, on-air meteorologist or meteorological briefer. It consists of a cheque for $1500. The scholarship is funded by an annual donation from, Pelmorex Inc., the parent company of The Weather Network and Météomédia.

Is awarded for 2006 to **Marianne Stoesser** for academic excellence.

The CMOS Weather Research House NSERC Scholarship Supplement
(Provides a supplement of $5000 to a holder of an NSERC Postgraduate Scholarship or Canada Graduate Scholarship. It is renewable for a second year provided the Scholarship continues to be held)

Awarded to **Dmitry Vyushin** for academic excellence.

The previous year's winner, **Betty Ann Croft,** Dalhousie University, continues to hold her NSERC scholarship and hence she will also receive a cheque for $5000.

The CMOS SCOR/DFO NSERC Scholarship Supplement
Provides a supplement of $5000 to a holder of an NSERC Postgraduate Scholarship or Canada Graduate Scholarship. It is renewable for a second year provided the Scholarship continues to be held.

Awarded for 2006 to **Jessica E. Pilarczyk** for academic excellence.

The previous year's winner, **James Munroe,** University of Alberta, continues to hold his NSERC scholarship and hence he will also receive a cheque for $5000.

Neil J. Campbell Medal for Exceptional Volunteer Service
may be awarded each year to a member who has provided exceptional service to CMOS as a volunteer. The award may be made for an exceptional contribution in a single year or for contributions over an extended period. The contribution should have resulted in an important advancement for CMOS and/or its aims, nationally or locally.

Awarded for 2006 to **Dorothy Neale** for her dedication and her meticulous editorial and administrative skill, all applied in support of so many executives and members alike during her years in the CMOS National Office, and for her role as an "ambassador" to and for the Society at the CMOS Congress booths.

CMOS Citation
may be awarded each year to an individual, group or organization which has, in the previous year, made some outstanding contribution towards promoting public awareness of meteorology or oceanography in Canada.

Two are awarded for 2006 to:

• **Eric William Danielson** for his engaging description of Cape Breton weather, fed by his intimate knowledge of the region as depicted in his book: "Cape Breton Weather Watching". With a self-image as a teacher first and foremost, Bill has a wide range of scientific interests and continues to express his passion and delight in the natural world through his writing and research.

• **Caroline Qing Cheng** for the improvements she made as a volunteer to the web submission module for CMOS Abstracts, which significantly reduces the organizational efforts needed for CMOS congresses.

CMOS Fellow

The title of CMOS Fellow is conferred on **Andrew John Weaver** for significant leadership in the field of global climate research from the dynamics of oceanic circulation to leading the development of the University of Victoria's Earth System Climate model and for his outreach on behalf of climate research to the wider community whether it be business, media or schools.

The title of CMOS Fellow is conferred on **R. Grant Ingram** for his leadership in linking physical and biological oceanography, and his wide-ranging service and research contributions to Arctic oceanography.

The title of CMOS Fellow is conferred on **Roland Stull** for contributions to university teaching in atmospheric science at all levels and contributions to research in boundary-layer meteorology and regional scale weather forecasting in complex terrain.

The title of CMOS Fellow is conferred on **R. Allyn Clarke** for major contributions to the physical oceanography of the North Atlantic and to global climate studies through research, management and leadership at both national and international levels.

CMOS Undergraduate Scholarships
(Provides $500 for students in their penultimate year of studies to support their final year).

are awarded to:

- **Samantha McKay**, Mc Master University;
- **Jenni Vanos**, University of Guelph.

Campbell Scientific (Canada) Corp. Best Student Poster Prize

Was presented by Claude Labine to **Erin Evans** from McGill University. Her poster was "*Low Accumulation Precipitation Events at Locations across the Prairies during the 1999-2005 Drought*".

CMOS 41st Congress - St. John's, NL

St. John's NL, June 1, 2007: The 41st CMOS Congress wrapped up a successful week of meetings. This Congress was a joint meeting including members of the Canadian Geophysical Union (CGU) and the American Meteorological Society (AMS). Over 900 scientists and delegates from the three groups attended. During the week, several awards and prizes were presented.

The CMOS Prizes and Awards were presented during the Congress Banquet on May 31. The names and details of all the prize winners are shown above. In addition, two major non-CMOS awards were presented during a special luncheon on May 30. **Carl J. Walters** of UBC won the *Parsons Medal* for excellence in oceanography, and there were two recipients of the *Patterson Medal* for meteorology, namely **George Boer** of Victoria and **John Falkingham** from Ottawa.

On the evening of May 30, a large crowd of both delegates and the general public attended two public lectures at the St. John's Convention Centre. **Bruce Whiffen** spoke on Newfoundland severe weather events and **Dr. Warren Washington** presented the most recent evidence that unprecedented global climate change is under way and is being caused by human actions. Dr. Washington is an eminent American scientist and an author of the recent IPCC report.

Many of the Congress science sessions also confirmed global climate change with excellent presentations on glacial melting, sea level rise, sea ice melting and temperature increase.

Reported by Bob Jones
CMOS Webmaster

Next CMOS Congress

The next CMOS Congress will be held in Kelowna, British Columbia, May 26-30, 2008. The selected theme is "*Water, Weather and Climate: Science Informing Decisions*". It will be held at the Grand Okanagan Lakefront Resort and Conference Centre. Please book these important dates on your 2008 agenda.

Prochain congrès de la SCMO

Le prochain congrès de la SCMO se tiendra à Kelowna, Colombie-Britannique du 26 au 30 mai 2008. Le thème choisi est "*Eau, météo et climat: la science comme outil de décision*". Il se tiendra au Grand Okanagan Lakefront Resort and Conference Centre. Prière d'inscrire ces dates importantes à votre agenda pour 2008.

Paul Myers' Short Speech on Becoming CMOS President

Greetings, Bonjour,

Pour commencer, je voudrais dire un grand merci à Geoff Strong pour tout le travail et les efforts fournis durant la dernière année alors qu'il était Président de la SCMO. J'espère que je pourrai donner autant de temps et d'efforts que Geoff a donné. Aussi, c'est juste maintenant que je réalise que je suis le président de la SCMO et que je dois essayer de donner les mêmes efforts que les présidents de la SCMO ont su donner dans les années passées. Puisqu'il y a beaucoup de présentations ce soir, j'espère que ma présentation sera brève. Mais il'y a quelque mots que je voudrais vous dire. La première chose est que la SCMO et une organisation nationale et doit servir tous les membres, dans tous les centres, dans toutes les provinces. Si nous ne pouvons pas faire cela, il ne sera pas possible d'affirmer que la SCMO et une société nationale. So, for any members, especially in smaller centres, or if in a place without a formal CMOS centre, if you think CMOS can do something for you, contact a member of the executive to see if we can do something to help you.

I make these statements about membership because it is important for CMOS to be thought of as a worthwhile organization for people in our fields to became and remain members, as it is only with a sufficient membership base that the Society will have a sufficient voice, as well as funds and resources to become a more active player in matters relevant to our members. As well, for CMOS to be active in the future, it is important that we attract new members, especially post-docs and students (both graduate and undergraduate) who will hopefully be with the Society for many years into the future. Thus we need to find out what our Society does or can do that will make us more attractive and relevant to the next generation of scientists, meteorologists and oceanographers. CMOS has set up an ad-hoc student committee that is represented on our national council, but I don't know how many students know about it. Students (and post-docs) who are interested in the Society are encouraged to get involved – besides maybe being able to get the Society more responsive to student issues, it is a great opportunity for you to meet future colleagues, learn how scientific societies work, learn about funding issues in our field, etc. – all things you will want/need to learn through your career. It doesn't have to be nationally, it could be locally in your Centre. And we ask each Centre to try to get student involvement in your executive and your events. Finally, and although maybe not easy, we ask Centres to consider how they can get more involved with students, maybe through their local universities, to potentially attract people to our field who don't really know about it.

And I think this last is an issue of broad importance to our Society. As a physical oceanographer from a prairie centre, I encounter lots of surprise that I exist, as well as complete lack of understanding of what I do in many cases – i.e. comments like, you are an oceanographer, you must scuba dive with the fish like Jacques Cousteau. I don't think it is just 'prairie oceanographers' that encounter this issue. This has become clear during the recent discussions of climate change and some of the statements made by individuals, especially politicians. Even more generally, I would say many Canadians don't even really understand what a weather forecast really tells them, never mind how it was produced and its inherent reliability over time. I'm sure that the fact our field(s) is a quantitative branch of physics based on fluid mechanics, not some hocus-pokus art, would come as a surprise to many people. With this climate, it is not a surprise that our members are not listened to and given the same respect as members of other scientific fields. And that we are continually under extreme pressure to justify our science and its funding, even though we as a field provide tremendous service and value to Canada and Canadians. How do we deal with this? I don't have the answers but it is something I think we all need to think about.

For membership, I also think we need to stretch out to colleagues in related fields. This congress is good with its links to CGU and AMS – I have no problem saying that this has been one of the best CMOS congresses I have ever been involved with – and which I think speaks of more links with other organizations like CGU in the future, which others like Geoff have spoken of. But more than that, I think we need to reach out to colleagues in related disciplines – for example, for me personally, I would like to see stronger links with other areas of marine sciences (such as chemical or paleoceanography, for example) and get more of those people involved in CMOS. Also, because ice and snow play major roles in impacting both the atmosphere and ocean, I would like to see more integration between the Canadian cryospheric community and CMOS.

In conclusion, I wish everyone a good year. I again say, if you think CMOS can help you, contact the executive at any time, although if your response is not immediate, remember that all CMOS executive positions are volunteer.

Foreword

The time has now come for me to retire as President and pass over the reins to our new President, Dr. Paul Myers, Oceanographer at the University of Alberta. However, I must not leave without first thanking our Executive for the past year, most of whom will continue in that role for Paul. We all know that chain can only be as strong as its weakest link, and I can tell you that we have no weak links on this particular Executive chain.

I would like to thank you all individually, but I'd be sure to make a mess of it that way, and in similar instances, I've been prone to put my thoughts in verse. I certainly would not go so far as calling this drivel poetry, but I will take this one last President's prerogative and try such verse. But please do not ask me anything about the mechanics of this verse once I'm finished because I have no clue there. I call this:

President's Ode to CMOS Executive

I must confess I'm hesitant
and wonder why I'm president
of Canadian Meteorological,
and also Oceanographical,
So-ci-ety I'm told.

The position changes every year,
You never know enough I fear,
Unless one starts their own rampage,
Too little known to cause damage,
Besides I'm getting old.

Chairing meetings, many meetings,
Sometimes day-dream such dark fleetings,
Wishing to do something great,
For C-MOS but by then too late,
To make your mark so bold.

Your memory later will it seem,
Remind you of so fine a team
That kept you working like a mule,
Just so you would not make a fool,
Of you, because it will unfold.

So don't be shy, just step right up,
And give your time and fill your cup
You won't regret your time as chair
Just pick your group and volunteer
For C-MOS good as gold.

At meetings, meetings every week,
And Kochtubajda, oh what cheek,
Sends new agendas that would make one wary
All because he's Corresponding Secretary,
Why not use agendas that are old.

And then our Treasurer, he's fine,
Ron Hopkinson, he holds the line
On spending even though I pleaded,
Just a few bucks really needed,
To buy my way from all that winter cold.

Recording Secretary Hume,
Sometimes records too much our room.
I didn't mean for you to write it in
When I said "by the lard tunderin".
Spoken off the record rolled.

And then our president of vice,
A heart of gold, oh no, it's ice.
Paul Myers, oceanographer you see,
And sometimes yes he goes to sea,
Collecting ocean data, new, not old.

Let me not pass nor let me overlook
One person like a chess-game rook,
Who moved about all year, kept me on-track,
And filled in everything I lacked
Susan Past-president and heart of gold.

Then there are Officers-at-Large,
Filling in for others on recharge,
There's Neil, and Fraser, lately Shannon,
Firing away like loaded cannon,
Their opinions are much-valued so I'm told.

And lost in Ottawa back-boardrooms is the real
CMOS team for whom I strongly feel
I speak of Ian and Lise and Bob and Bill and by the way,
Don't you forget Richard, Uri, Dorothy, and Paul-André.
The ones who do the real work for our fold.

So now alas, I must be now content,
My time that I feel was so well ill-spent,
And now replaced with new ideas and fliers,
An oceanographer they call Paul Myers,
While, I like falling bowling pins, get bowled.

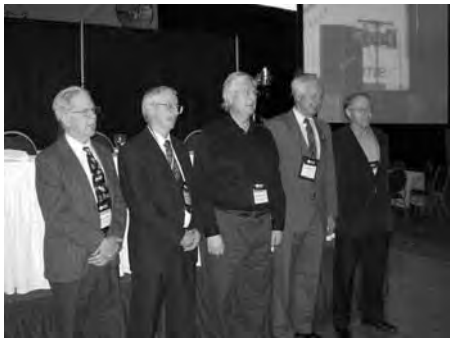
But Paul, advice, and no guffaw,
Let's talk about our team in Ottawa,
Who work as though there never was an end,
When all is said and done, they're your best friend,
Reliance you can count on good as gold.

Geoff Strong's swan song,
As CMOS President, 2006-07

31 May 2007

41st CMOS Congress Photo Memories
Souvenirs photographiques du 41e Congrès de la SCMO






Photos legend (from left to right, top to bottom). 1. **Jim Bruce** working in the busy internet room. 2. Quick view of the registration desk. 3. Well attended posters session. 4. Happy group of meteorologists after the banquet, Steve Lambert, Geoff Strong, Bill Burrows, Oscar Koren and Rick Lawford. 5. From St. John's to Kelowna, local organizers, **Fraser Davidson** and **Kent Johnson**. 6. **Gordon McBean** congratulating **Howard Freeland** for the President's prize. 7. **Paul Myers** (Incoming President), **Geoff Strong** (Outgoing President) and **Susan Woodbury** (Past President). 8. **Uri Schwarz** and **Dorothy Neale** minding the CMOS Booth. 9. When oceanography meets meteorology, **Neil Campbell** and **Geoff Strong**.

Photos courtesy of the Editor, *CMOS Bulletin SCMO*, May 2007.

Second Annual CMOS Photo Contest

And the prizes go to . . .

✦ First place ($100) – Dave Sills, "*Prairie Stormscape*"

✦ Tied for Second place ($50) – Steve Knott, "*Snow Ghost Family"*

✦ Tied for Second place ($50) – Pat McCarthy, "*Sunset Shower*"

Prairie Stormscape

First place winner, Dave Sills, is a severe weather scientist with Environment Canada in Toronto. He has a life-long interest in storms and weather and enjoys creative photography. He has been photographing storms with an artistic eye in parts of Canada, the United States and even Australia over the past two decades. Dave was the second place winner in last year's photo contest.

Prairie Stormscape was taken on July 18, 2006, during a storm-chasing trip with the University of Manitoba on the Canadian Prairies. A cluster of storms had erupted to east of a location near Churchbridge, Saskatchewan, and gradually merged so that one giant cirrus anvil was formed. The photograph was taken facing roughly northeast using a weather-beaten Nikon EM with a 28 mm lens and Kodak Ultra 400 film.

Why a particular photograph seems to 'work' always interests Dave. He thinks this one succeeds because of its simple colour scheme, shapes and lines, the cumulus in the middle-ground adding interest and depth, and finally because it evokes the open spaces and big skies of the Canadian Prairies.

Snow Ghost Family

Tied second place winner, Steve Knott, is currently working as a severe weather meteorologist with Environment Canada in Edmonton. His career has taken him primarily to the Canadian Prairies having worked stints in Winnipeg, Saskatoon and Edmonton. Steve also worked as a meteorologist course instructor in Toronto from 1987 to 1993 which was overall an enjoyable experience as it allowed him to meet and get to know many excellent people within the Meteorological Service of Canada (MSC). Steve also enjoys sports and being outdoors, especially hiking, camping or snowboarding in the mountains.

Snow Ghost Family was taken Sunday afternoon, February 5, 2006 at Big White ski resort in B.C. Big White is situated on the edge of the Monashee Mountains, 56 km from Kelowna. The previous day provided a blustery day of skiing in blizzard-like conditions. By Sunday the snow had stopped, providing some excellent powder conditions. By afternoon the sun had come out illuminating a surreal mountain landscape of snow ghosts as far as the eye could see. This picture was taken just prior to the camera batteries dying.

Sunset Shower

Tied second place winner, Pat McCarthy, is a meteorologist and severe weather program supervisor with the Meteorological Service of Canada. He works at the Prairie and Arctic Storm Prediction Centre in Winnipeg. Pat has been an avid weather photographer for over 25 years. Originally from Edmonton, he has spent most of his life living in the Canadian Prairies. The big skies and diverse weather have given him many opportunities to capture the majesty of our atmosphere.

Sunset Shower was taken while on vacation at Elk Island National Park east of Edmonton. Another beautiful prairie sunset was expected and Pat set up his camera on the shore of one of the park's picturesque lakes. The calm winds left a mirror-like surface on the water. After taking a number of pictures, a developing thundershower began to form across the lake. The sun was close to setting and reddish glow began to highlight the falling rain beneath the cloud-base. About a dozen other campers raced up beside him with cameras in hand to capture the scene. As if on cue, a flock of geese swam across the scene before them. This picture captures that breath-taking moment.

Pat took the photo with his new Pentax 6.1 MP digital SLR using an old 28-80 mm lens. Pat took about 50 photos using various settings while capturing the changing light during the sunset. Because it gives you instant feedback, digital is the way to go as far as Pat's concerned.

About the contest

Entrants to our second photo contest included 11 very talented photographers who submitted 27 pictures. Thanks are extended to Richard Asselin, Dov Bensimon, Eric Danielson, Steve Knott, Pat McCarthy, Jason Noble, Brad Power, Xin Qiu, George Robertson, Dave Sills and Andrew Weaver for their delightful submissions.

For this year's contest, voting took place both on-line and at the CMOS booth at the St. John's Congress, May 28 to June 1. On-line voting was available for a month between mid-May and mid-June. Photos were displayed on the CMOS web site and 5" by 7" prints were also available at the booth. Ballots were provided in both French and English. Voting was anonymous, that is, people voted for the picture without knowing the photographer's name. The point system we used to count the ballots unexpectedly produced an exact tie for second place, so it was decided to give two second place prizes. The above placement is simply alphabetical.

Many thanks go to those people who assisted with this year's contest. In particular Susan Woodbury and Dorothy Neale who actively encouraged people to sit down and vote at the booth.

Keep your cameras at the ready. Plans are under way for the 3rd Annual Photo Contest to celebrate the artistic and creative talents of CMOS members.

Bob Jones
CMOS Webmaster

Note from the Editor: the three winning photos are shown on the inside front cover page of this issue of the *CMOS Bulletin SCMO*.

Note du rédacteur: les trois photos gagnantes sont présentées sur la page couverture avant intérieure de ce numéro du *CMOS Bulletin SCMO*.

Dr. Ransom Myers

1952 — 2007

One of Dalhousie's brightest lights, Dr.Ransom Myers, passed away in Halifax on March 27, 2007, at the age of 54. Ram, as he was known, captured the world's attention time and time again with breakthrough research on declining fish populations. He focussed much of his attention on models of extinction, which is a growing concern in the marine environment.

As Dalhousie's inaugural Killam Chair in Ocean Studies, he was widely respected around the globe as a leading world-class ocean researcher. Last year, *Fortune Magazine* named him the only Canadian on a list of the "Top Ten People to Watch" in the world over the next 75 years. His work was featured on the cover of *Time* magazine and the *New York Times* ("above the fold") and he testified at the U.S. Senate Commerce Committee Hearing on Overfishing and at the House of Commons Standing Committee on Fisheries and Oceans. He was also in *Who's Who* in Canada.

Dr. Ransom Myers

Dr. Myers received his B.Sc. in Physics from Rice University and his M.Sc. in Mathematics and Ph.D. in Biology from Dalhousie University. He published more than 100 refereed scientific publications in diverse fields of aquatic ecology. His influential work on the causes for the collapse of fish stocks, particularly cod in Eastern Canada, has been well documented.

The Dalhousie community is enriched for having known and worked with him. Dr. Myers' achievements will long be recognized by his colleagues and his many friends, the world over. The entire Dalhousie family is deeply saddened by the passing of an outstanding colleague and friend and our hearts are with his family today and in the days ahead.

Donations in Dr. Myers' name can be made to the Ecology Action Centre (902-429-2202) or the Nova Scotia Nature Trust (902-425-5263).

Dr. George L. Pickard

1913 — 2007

George Pickard died recently after a short illness; he was 94. He directed the Institute of Oceanography at UBC for many years and was a major player in the development of ocean sciences in western Canada. Many who took his courses, went to sea with him or studied under his direction, will remember him as a kind, no-nonsense, supremely organized and dedicated scientist, with a taste for exotic exploration.

George Lawson Pickard was born on July 5, 1913 in Cardiff, Wales. Following studies in Physics at Oxford (D.Phil.,1937), he joined the Royal Aircraft Establishment as a researcher and, later in the war, was posted to the Operational Research Section of the RAF Coastal Command. He worked on the development of improved bombsights and designed the two-spotlight technique that enabled low flying aircraft to place depth charges behind German hydroelectric dams (as shown in the movie "Dam Busters"); he was awarded the MBE for his war-time contributions. After the war, George and his family moved to Canada, joining the UBC Physics Department in 1947, where he hoped to continue his research in low-temperature physics, interrupted by the war. "We don't do that here - that's for Toronto", said Gordon Shrum, then head of UBC Physics, as he steered George towards oceanography. Following a year learning the rudiments of this new discipline at Scripps, he returned to UBC and joined the newly created Institute of Oceanography, launching a systematic study of BC's coastal fjords and building up the academic infrastructure which would eventually mature into a first rate interdisciplinary institution.

Dr. George Pickard

Pickard's books on Descriptive Physical Oceanography and (with Steve Pond) on Introductory Dynamic Oceanography were a great success and introduced a whole generation of students to the physics of the oceans. His detailed surveys of the waters of BC fjords provide an essential base line for assessing the progress of climate change. In later years, George extended his interests to the South Seas, surveying the fjords of Chile and New Zealand, making major contributions to the oceanography of the Great Barrier Reef and the Coral Sea.

George Pickard was a Fellow of the Royal Society of Canada and a recipient of CMOS's Tully Medal. His wife Lilian -- they met and married while students at Oxford -- predeceased him (in 1994); he leaves a son, Andrew, and a daughter, Ann.

Patrick Walden Nasmyth

1920 — 2007

Pat Nasmyth in 1984

Patrick Nasmyth passed away quietly at Oak Bay Lodge, 17 April, 2007. Pat was born 13 January, 1920 and lived a life full of adventure and achievement. He was an electrical engineer and worked on the development of radar during the war and after joining the Pacific Naval Laboratory (PNL) of the Defence Research Board (DRB) he took educational leave and obtained his PhD from UBC. He was transferred to DRB headquarters in Ottawa where he served as the Director of Scientific Services for the RCN and Director of Physical Research, DRB. He was later posted to Washington, D.C. as a Defence Research Member of the Canadian Joint Staff. He rejoined PNL in the early 70s and later the Department of Fisheries and Oceans' Institute of Ocean Sciences at Pat Bay, BC where he was appointed the Chief Oceanographer of the Institute. While with the Defence Research Board in Ottawa, he was selected to be the navigator for "Operation Musk Ox", a small Canadian Army force of highly trained men and hand-picked observers from other countries. Their mission was to cross the barren lands and assess equipment for winter war conditions in the Arctic. It was an 81-day trip in high-powered 4½ ton snowmobiles originally intended for the invasion of Norway. The operation began at Churchill, Manitoba and crossed the barren lands to Cambridge Bay, down the Mackenzie River valley and finally ended at Edmonton. A long journey in freezing mid-winter conditions in 1946, some 1,150 miles in all. Pat also served as the chief engineer on the CNAV *Cancolim*, a Defence Research Board research vessel that carried out oceanographic and hydrographic surveys in the Beaufort Sea and Amundsen Gulf in 1951 and 1952. He was an ardent sailor and could turn his hand to cabinet-making and carpentry and could fix anything and everything. He was a good friend to all and was a truly gentle and thoughtful man who approached life with a quiet sense of curiosity and creativity. He was a devoted husband and father and leaves behind his loving wife, Mim, and his two sons, Paul and Guy, his grandson, Patrick, and his brother Pan. He was predeceased by his daughter, Andrea, and two grand daughters, Arin and Katy McFadden, who were killed in a tragic motor car accident. He will be missed every day.

Neil J. Campbell

Grant Ingram

1945 — 2007

Dr. Grant Ingram at the CMOS Congress in St. John's, NL, in May 2007

Grant Ingram passed away while leaving his UBC office on the evening of June 13, 2007. Grant was a warm and very decent human being as well as a major figure internationally, at UBC and within Earth and Ocean Sciences at UBC -- he will be sorely missed. Heartfelt sympathies go first to Grant's wife, Helen Burt, and their family, and to the many UBC students and colleagues whose lives have been touched so marvelously by Grant since he arrived at UBC in 1997. Grant's scholarly contributions to the world of earth and ocean sciences, along with truly remarkable administrative service to the university, are accomplishments that bring tremendous pride to all who have known him.

Grant was a distinguished physical oceanographer, and this scholarly work was a constant backdrop to the service he performed in the community, initially as founding Principal of St. John's College, as Dean of Science Pro Tem, Associate Dean, Strategic Planning and Research in the Faculty of Science and most recently as Principal of the College for Interdisciplinary Studies. He was instrumental in establishing large mutidisciplinary research programs studying the influence of physical processes on biological productivity in the ocean.

Grant was named 2006 Fellow of The Oceanographical Society for "*insightful studies of physical processes and physical/biological coupling in extreme polar regions and for untiring service to the oceanographic community*" and 2006 Fellow of the Canadian Meteorological and Oceanographic Society for *"leadership in linking physical and biological oceanography, and his wide-ranging service and research contributions to Arctic oceanography*." Never has the world more needed his expertise in Arctic waters at a time of dramatic climate change, the focus of his most recent research.

Grant had a passion for music, reading, writing, good food, wine and, of course, the ocean. He was a man of great passion and 'joie de vivre' and was loved and cherished by many friends. He was a devoted father and raised a loving family with his first wife, Bea, in Montréal. He encouraged his three children, Jonathan, Sara and Kate, to fulfill their dreams with integrity. He recently became a grandfather to Sienna. Grant and his wife, Helen, loved to travel and have spent many happy weeks in Villefranche-sur-Mer in France.

Before joining the UBC community, Grant had been Chair of the Institute of Oceanography and Professor in the Department of Atmospheric and Oceanic Sciences at McGill, from where he attained his BSc and MSc prior to his PhD in the joint program of the Massachusetts Institute of Technology and Woods Hole Oceanographic Institution. He will be truly missed by his former colleagues at McGill.

Hendrik (Hans) Teunissen

1945 — 2007

With considerable sadness, we note the passing of Hans Teunissen. Hans was born on 8 April 1945 and passed away due to sudden heart attack on 11 June 2007. He will be sorely missed by his wife Jackie, family and many colleagues and friends around the world. I was fortunate to know Hans from his early days in Downsview in the 1970s when he joined the Meteorological Research Branch after completing his Ph.D. at the University of Toronto Institute of Aerospace Studies. His PhD involved using models in a multi-jet wind tunnel to simulate boundary layer turbulence and measuring data related to aircraft performance along landing/take-off flight paths. To rationalize his objectives he prepared a review that was published as a UTIAS Tech. Note that was just what everyone needed; a useful reference of the salient properties of the atmospheric boundary layer. It was also illustrative of his penchant for details and accuracy. Hans was a superb scientist and produced many papers on boundary flow both over natural terrain and in the wind tunnel. He ran the MSC boundary layer wind tunnel program as well as several field measurement programs. He later worked for Phil Merilees in the office of the Director-General Research. In recognition of his research and leadership in meteorological-aviation issues, Hans was elected a Fellow of the Canadian Aeronautics and Space Institute.

Hans always wanted to work in Europe and his opportunity came when he joined the World Meteorological Organization in Geneva in July 1997 as a Seconded Expert from the MSC. He served with both the World Climate Research Programme and the Global Climate Observing System Secretariat (GCOS). He was nominated Senior Scientific Officer in June 2003 in the GCOS Secretariat and was to retire in July 2007.

Dr. Hendrik Teunissen
Photo provided by Bob Jones

Professor Dave Surry, a fellow graduate student and long-term friend of Hans notes one of his best memories with Hans was a trip to Aachen in 1978, when they were both getting interested in wine tasting. After the conference, they went on a week-long trip with the German Wine Academy. That was when Hans found his true forte. He had the taste buds to match his prodigious memory, and it became a life-long avocation. Among his many honours related to wine was his recent completion of the Sommelier accreditation in France.

Hans has been a CMOS member since the '70s and was always a great supporter. He spoke at National Congresses and at several Centres.

As Leslie Malone noted, Hans was a "*colourful, spiky, smart, passionate and special person - truly unique*". And Bruce Angle said "*in many ways Hans was the heart and soul of GCOS, its centre of gravity*". I had dinner with Hans and Jackie in their home in Geneva on June 6, just before his tragic death. He showed me around their home, that he and Jackie were still completing, with the usual great enthusiasm and pride that Hans had in all things he did. He talked about the trips and others things they would do after his retirement in July. We will all miss him and we honour his contributions to our field and his example for life.

Gordon McBean

Fred G. Barber

1921 — 2007

Frederick George Barber died peacefully in hospital on April 27, 2007. Survived by his wife of 63 years. Dorothy (Davies); son, Fred (Brenda); daughters, Eleanor (Hal) Harris, Beverly (Ray) Fortier; 12 grandchildren; 7 great-grandchildren, sister, Eleanor (Harry) Hinkelman and numerous nieces and nephews. Predeceased by his sister, Betty Bryant. Fred's early research efforts were with the Pacific Oceanographic Group in the 1950s. He moved east and spent much of his career with DFO's Marine Environmental Data Service (MEDS) in Ottawa. Fred's research interests included physical oceanography and ship surveys in Hecate Strait and the Amundsen Gulf in the western Arctic, research on salmon/coastal waters interactions, studies of the heat budget of the Hudson Bay and tracing environmental damage connected with the sinking on the east coast of the Irving Whale in 1970. For several years, Fred Barber was the Editor of the Marine Sciences Manuscript Report Series in which several Canadian and foreign scientists published their early work.

Fred Barber in 2005
Photo courtesy of John Minaker

Fred will also be remembered among us for having organized many pizza lunches where he would bring his own can of anchovies as an appetizer to share among his many friends. He was also a wine amateur. He would taste his *Mouton-Cadet* just about every Saturday night. Fred also crossed the country many times bringing Dorothy in his car to the West Coast. There, they would spend, together and with many friends, many days of happiness. After his retirement, Fred and Dorothy moved definitely to the West Coast, enjoying the mild climate of Sidney. Many of us had the opportunity to visit them in their lovely home, sharing with Fred old memories.

Neil J. Campbell and Paul-André Bolduc

Bequests and Charitable Donations to CMOS

Did you know that CMOS is a registered charity and able to issue receipts for donations made to the Society? There are already several ways for CMOS Members to make charitable donations to CMOS and receive a consequent tax receipt.

Donations to named funds
Donations are in fact the main source of revenue for **CMOS scholarships**, for the **Roger Daley Postdoctoral Publication Award** and for the **CMOS Development Fund**. Every year we issue a call for such donations to be made along with the renewal of membership, but in fact CMOS can accept donations to any of these funds at any time during the year. While on the web, click on the appropriate link to obtain a convenient **Donations Form**.

Your donations make it possible every year for CMOS to offer scholarship supplements to postgraduate students holding NSERC fellowships and scholarships to undergraduates. They also sustain the Tertia M C Hughes Graduate Student Award and the Roger Daley Postdoctoral Publication Award and they allow CMOS, through its Development Fund, to develop its influence and visibility through co-sponsorship of meetings organized by other groups, support to science fairs, and other development projects approved by Council.

One-time substantial Donations and Bequests
Members should not feel that these existing funds are the only avenue for donations to CMOS. If you would like to expand CMOS's activities through a substantial donation or bequest, we would be pleased to discuss your idea. Just send us a note or an e-mail and we will contact you to make an arrangement that suits you.

If CMOS receives a large bequest or gift that is to be used to fund a project over a period of years, the donor needs to explicitly tell CMOS that this is their intention for these funds. This is particularly true when the donor wishes to give a substantial gift to endow a scholarship or prize in perpetuity.

Gifts of Cash
Make a difference today, either to existing CMOS programs noted above or through new dedicated initiatives determined by donors, and receive a tax receipt for your gift.

RRSPs and RRIFs
Secure two futures: yours and that of CMOS. Enjoy your savings in life, tax-protect your estate and create a legacy by designating CMOS as the beneficiary of some portion of your RRSP/RRIF portfolio. The gift will bypass the probate process, yielding a tax receipt for the full value of the investment.

Stocks and Securities
Be tax-smart. Donate publicly traded stocks and securities and receive a tax receipt for the full appreciated value. You will not be subject to capital gains tax on gifts made since May 2, 2006. The receipt value is based on the closing trading price on the day that CMOS receives the shares.

Life Insurance
Modify an existing life insurance policy or take out a new one to support CMOS. Gifts of life insurance are made by transferring ownership and beneficiary status of an existing or new policy to CMOS. You will receive a tax receipt for the cash-surrender value of the policy at the time of the transfer and for all premiums paid after the date of transfer. You may also simply name CMOS as the beneficiary of your policy, and your estate will receive a tax receipt equal to the death benefit proceeds paid to CMOS.

Charitable Remainder Trusts and Gifts of Residual Interest
Arrange a trust gift today using cash, bonds, securities, real estate or another tangible asset, and continue to use the property or receive the interest income for the rest of your life. A receipt based on the net present value of the trust is available when the trust is established.

Bequests (Gifts via your will)
Feel good about your gift now, but give it later. When you make a bequest, your estate is eligible for a tax receipt of up to 100 per cent of your net income in the year of death and the preceding year.

Seek Financial Advice
The above guidance is general in nature and does not constitute legal nor financial advice. There is no substitute for professional advice based on the particular circumstances of individual CMOS members. When it comes to estate planning and/or financial advice CMOS strongly encourages that members seek professional advice before deciding on a course of action. Should you wish further information on possibilities with respect to making substantive contributions to CMOS, particularly with respect to initiating new programs, members are encouraged to contact the CMOS Executive Director at exec-dir@cmos.ca to review options.

Recognition of Donors
Each year since 2004 CMOS has published in the *Annual Review* the names of its donors in four categories:

- Benefactors ($1000 or more),
- Patrons ($250 to $999),
- Sponsors ($100 to $249),
- Donors ($10 to $99).

If you would like your name to appear in this list, consider making a donation now or along with your membership renewal. You will gain a little bit of recognition, perhaps encourage others to donate, reduce your taxes and have the satisfaction of having contributed to an important program of your Society. If you would prefer not to have your name appear in the list, your wishes will be respected.

Donations Form
If you wish to make a donation, you can obtain the Donations Form at:

http://www.cmos.ca/donationse.html

Legs et dons de bienfaisance à la SCMO

Saviez-vous que la SCMO est un organisme de bienfaisance enregistré et qu'il peut émettre des reçus pour les dons faits à la Société? Il existe déjà plusieurs manières de faire un don à la Société et de recevoir subséquemment un reçu d'impôt.

Dons à des fonds désignés
En fait, les dons sont la principale source de revenus pour les bourses d'études de la SCMO, le Prix Roger Daley remis pour une publication postdoctorale et pour le fonds de développement de la SCMO. Chaque année, nous faisons un appel pour de tels dons à faire en même temps que le renouvellement de l'adhésion mais, en fait, la SCMO peut accepter des dons pour ces fonds à tout moment de l'année.

Chaque année, vos dons permettent à la SCMO d'offrir des suppléments de bourses d'études à des étudiants aux études supérieures détenant des bourses de recherche du CRSNG, ainsi que des bourses d'études aux étudiants du premier cycle. Ils assurent aussi la viabilité du Prix commémoratif Tertia M C Hughes pour étudiants diplômés et du Prix Roger Daley pour une publication postdoctorale. Ils permettent à la SCMO d'accroître son influence et sa visibilité grâce aux co-commandites de réunions organisées par d'autres groupes, au soutien à des expos-sciences et à d'autres projets de développement approuvés par le conseil d'administration.

Legs et dons substantiels ponctuels
Les membres ne doivent pas penser que ces fonds existants représentent les seules façons de faire des dons à la SCMO. Si vous souhaitez que la SCMO élargisse ses activités par l'intermédiaire d'un legs ou d'un don substantiel, nous serons ravis de discuter de vos idées. Il suffit de nous envoyer une note ou un courriel et nous communiquerons avec vous afin de procéder comme il vous conviendra le mieux.

Si la SCMO reçoit un legs important ou un don devant être utilisé pour financer un projet sur plusieurs années, le donateur doit dire explicitement à la SCMO qu'il s'agit bien de son intention en ce qui concerne ces fonds. Et ceci particulièrement lorsque le donateur souhaite offrir un don substantiel pour la dotation d'une bourse d'études ou d'un prix à perpétuité.

Dons en argent comptant
Faites une différence aujourd'hui, soit pour l'un des programmes de la SCMO décrits ci-dessus, soit par l'intermédiaire de nouvelles initiatives dédiées, déterminées par les donateurs, et recevez un reçu fiscal pour votre don.

REER et FERR
Protégez deux futurs : le vôtre et celui de la SCMO. Profitez de votre épargne pendant votre vie, protégez votre patrimoine des impôts et créez un héritage en nommant la SCMO comme bénéficiaire d'une partie de votre portefeuille de REER/FERR. Le don évitera la procédure d'homologation produisant un reçu fiscal de la valeur totale de l'investissement.

Actions et valeurs mobilières
Soyez futé. Faites le don d'actions et de valeurs mobilières négociées sur les marchés publics et recevez un reçu fiscal de la valeur fixée totale. Vos gains en capital ne seront pas imposables sur des dons faits depuis le 2 mai 2006. La valeur du reçu est basée sur le cours de clôture des actions le jour où la SCMO les reçoit.

Assurance-vie
Modifiez une police d'assurance-vie existante ou prenez-en une nouvelle afin de soutenir la SCMO. Vous pouvez faire don d'une assurance-vie en transférant les statuts de propriétaire et de bénéficiaire d'une nouvelle police ou d'une police existante à la SCMO. Vous recevrez un reçu fiscal de la valeur de rachat au comptant de la police au moment du transfert et pour toutes les primes payées après la date de transfert. Vous pouvez aussi simplement nommer la SCMO comme bénéficiaire de votre police et de votre succession recevra un reçu fiscal équivalant aux indemnités en cas de décès payées à la SCMO.

Fiducies de rentes avec droit réversible à une œuvre de bienfaisance et dons à intérêts résiduels
Faites don d'une fiducie aujourd'hui en utilisant de l'argent comptant, des obligations, des valeurs mobilières, des biens-fonds ou tout autre bien matériel et continuez d'utiliser vos biens ou de recevoir des revenus d'intérêts pour le restant de vos jours. Un reçu basé sur la valeur actualisée nette de la fiducie est disponible lorsque la fiducie est établie.

Legs (dons testamentaires)
Soyez satisfait de votre don maintenant, mais donnez le plus tard. Lorsque vous faites un legs, votre succession est admissible à un reçu fiscal dont la valeur peut aller jusqu'à 100 % de votre revenu net pour l'année du décès et l'année précédente.

Consultez un conseiller financier
Les conseils ci-dessus sont de nature générale et ne constituent ni des conseils légaux, ni des conseils financiers. Rien ne remplace les conseils d'un professionnel basés sur les circonstances particulières à chaque membre de la SCMO. En ce qui concerne toute planification successorale ou conseil financier, la SCMO encourage chacun de ses membres à consulter un professionnel avant de prendre une décision. Pour obtenir de plus amples renseignements concernant les possibilités de contributions substantielles à la SCMO, particulièrement en ce qui concerne le lancement de nouveaux programmes, nous encourageons nos membres à communiquer avec le directeur exécutif de la SCMO à exec-dir@cmos.ca afin d'examiner vos options.

Reconnaissance des donateurs
Depuis 2004, la SCMO a publié chaque année dans sa *Revue annuelle* les noms de ses donateurs dans quatre catégories :

- Bienfaiteurs (1000 $ ou plus);
- Protecteurs (250 $ à 999 $);
- Parrains (100 $ à 249 $);
- Donateurs (10 $ à 99 $).

Si vous souhaitez que votre nom figure sur cette liste, pensez à faire un don maintenant ou lors du renouvellement de votre adhésion. Vous gagnerez ainsi un peu de reconnaissance, vous encouragerez peut-être d'autres personnes à donner, réduirez vos impôts et aurez la satisfaction d'avoir contribué à un important programme de votre Société. Si vous préférez que votre nom n'apparaisse pas sur la liste, nous respecterons votre choix. Les dons peuvent être faits par n'importe qui, en tout temps et de différentes manières. Envoyez-nous simplement un mémo ou un courriel et nous communiquerons avec vous pour conclure une entente qui vous conviendra.

Formulaire de dons
Si vous voulez faire un don, utilisez le formulaire de dons que vous trouverez à:

http://www.cmos.ca/donationse.html

New Service for ATMOSPHERE-OCEAN

To serve you better, A-O online (from 2002 to now) is now hosted by MetaPress, offering many new and exciting services. All articles, starting from 1978 continue to be available on the CMOS server at:

https://www1.cmos.ca/subscriptions/subscript_login.asp .

Please register as a MetaPress user at http://cmos.metapress.com and set up a personal home page on which your preferences will be kept. Most institutional subscribers and some individuals who are already registered with any of the MetaPress sites will find that they already have access to A-O through that system. If you are a subscriber and find you do not have full access to A-O, you will need a token to initiate it. Please contact CMOS and we will send you your token (publications@cmos.ca). Thereafter, your access will be part of your personal page for as long as your subscription is in effect.

Subscription to A-O online is cheap: $15 for individuals or $110 for institutions. Do not miss it; subscribe at:

https://www1.cmos.ca/sales/sales_billing_info.asp

or contact our office.

ATMOSPHERE-OCEAN is now a member of CrossRef, an agency that maintains a database of articles identified by their DOI (Digital Object Identifier). All A-O articles published since 2002 now have a DOI. Through CrossRef, MetaPress offers links to the references listed in each article as well as forward links to papers that have already cited the article. CrossRef will also allow rapid access to A-O articles cited in other CrossRef-enabled journals.

Richard Asselin
Director of Publications

Nouveau Service pour ATMOSPHERE-OCEAN

Pour améliorer notre service, A-O en ligne (de 2002 à maintenant) est dorénavant hébergé chez MetaPress, qui vous offre plusieurs services nouveaux et excitants. Tous les articles, de 1978 à maintenant continuent d'être hébergés sur le serveur de la SCMO à:

https://www1.cmos.ca/subscriptions/subscript_login.asp.

Veuillez vous enregistrer comme usager de MetaPress à http://cmos.metapress.com et construire une page personnelle sur laquelle vos préférences seront conservées. La plupart des abonnés institutionnels et quelques individus déjà enregistrés à tout site de

MetaPress constateront qu'ils ont déjà accès à A-O sur ce système. Si vous êtes abonné et voyez que vous n'avez pas l'accès complet, vous devrez utiliser un jeton pour l'initier. Veuillez contacter la SCMO et nous vous enverrons votre jeton (publications@scmo.ca). Par la suite, l'accès fera partie de votre page personnelle tant que votre abonnement sera en force.

L'abonnement à A-O en ligne est bon marché: 15$ pour les individus ou 110$ pour les institutions. Ne le manquez pas; abonnez-vous à

https://www1.cmos.ca/french/sales/sales_billing_info.asp

ou contactez notre bureau.

ATMOSPHERE-OCEAN est maintenant membre de CrossRef, un organisme qui maintient une banque de données d'articles identifiés par leur DOI (digital object identifier). Tous les articles de A-O publiés depuis 2002 ont maintenant leur DOI. Grâce à CrossRef, MetaPress offre des liens aux citations listées dans chaque article de même que des liens vers les articles qui ont déjà cité l'article en question. CrossRef facilitera aussi l'accès aux articles de A-O cités dans d'autres revues qui sont membres de CrossRef.

Richard Asselin
Directeur des publications

New Section in *ATMOSPHERE-OCEAN* Applied Research

Responding to the recommendations of an ad hoc working group to address the relative paucity of operational meteorology papers submitted to *ATMOSPHERE-OCEAN* (A-O) and to offer more opportunities for the publication of case studies performed by the large contingent of operational meteorologists, oceanographers and engineers, the Editorial Board has decided to highlight the papers that focus primarily on applied research by placing them in a separate section of the journal. The journal is planning to have two regular sections: Fundamental Research and Applied Research.

Publication of applied research is not a departure from the policy of A-O. There have been several papers focusing on the application of new or existing scientific developments published both in meteorology and oceanography since the journal's inception in 1978. Successful applications are an important contribution to knowledge because they complete the process of research. As a consequence, it is desirable that such results be published. By creating a special section, the Editorial Board wishes to provide a medium for the publication of studies which apply the science. These include, but are not restricted to, tests of theories, comparison of model results and case studies designed to discover the reason for the failure (or success) of existing theories and models. We hope this will broaden the scope of the journal and increase its interest to both readers and authors.

Authors submitting a manuscript should follow the established submission procedure (http://www.cmos.ca/aoinfoauthorse.html) and indicate in their cover letter if they would like it to be considered as a fundamental or an applied research paper. This information will be forwarded to the reviewers, but the editor will retain the right to determine the final classification. Although we are initiating a new publication category, it should be noted that the Associate Editors and reviewers will be instructed to apply the same rigorous reviewing standards to both types of manuscripts when evaluating their suitability for publication in *ATMOSPHERE-OCEAN*.

First indications are that this initiative will be well received by managers of the Meteorological Service of Canada. Nevertheless, we advise operational meteorologists planning to submit manuscripts to obtain early confirmation that their managers are willing to honour the page charges.

We look forward to receiving your submissions to *ATMOSPHERE-OCEAN*. We would also be pleased to receive your comments regarding any aspect of the production of the Society's journal.

A-O Editorial Board

Nouvelle section *dans ATMOSPHERE-OCEAN* - Recherche appliquée

Suite aux recommandations d'un groupe de travail spécial visant à augmenter le nombre d'articles en météorologie opérationnelle soumis à *ATMOSPHERE-OCEAN* (A-O), et afin d'offrir plus de débouchés pour publier les études de cas exécutées par les nombreux océanographes, météorologistes d'opérations ou ingénieurs, le Comité éditorial a décidé de mettre en valeur les articles dont l'emphase est plutôt les applications de la recherche en les plaçant dans une section séparée de la revue. La revue aura donc deux sections régulières: Recherche fondamentale et Recherche appliquée.

La publication de recherches appliquées ne constitue pas un changement de politique pour A-O. Plusieurs articles axés sur l'application de développements scientifiques nouveaux ou existants, tant en météorologie qu'en océanographie, ont été publiés depuis le début de la revue en 1978. Les applications réussies sont un apport important à la connaissance car elles complètent la recherche. Par conséquent, il est désirable que de tels résultats soient publiés. Avec la création d'une section spéciale, le Comité éditorial espère offrir une avenue pour la publication d'études d'applications scientifiques. Ceci inclut, les tests de théories, les comparaisons de résultats de modèles, les études de cas visant à découvrir les causes des faillites (ou réussites) des théories ou modèles existants, et autres. Nous espérons ainsi accroître la couverture de la revue de

même que l'intérêt des lecteurs et des auteurs.

Les auteurs qui soumettent un manuscrit doivent suivre les procédures de soumission établies (http://www.cmos.ca/aoinfoauthorsf.html) et indiquer dans leur lettre d'accompagnement si ils désirent qu'il soit considéré comme recherche fondamentale ou appliquée. Cette information sera transmise aux examinateurs mais le directeur scientifique se réserve le droit de déterminer la classification finale. Quoique nous annonçons le début d'une nouvelle catégorie d'articles, il faut noter que les rédacteurs-associés et les examinateurs seront instruits d'appliquer les mêmes standards rigoureux aux deux types de manuscrits en évaluant la pertinence de leur publication dans *ATMOSPHERE-OCEAN*.

Tout indique que cette initiative sera bien reçue par la gestion du Service Météorologique du Canada. Cependant, nous conseillons aux météorologistes d'opérations qui planifient de soumettre un article de confirmer d'avance auprès de leur supérieur que les frais d'auteurs seront pris en charge.

Nous attendons avec impatience vos soumissions à *ATMOSPHERE-OCEAN*. Il nous fera aussi plaisir de recevoir vos commentaires sur tout aspect de la production de la revue de la Société.

Le comité éditorial de A-O

A-O Abstracts Preview

Avant-première des résumés de A-O

The following three abstracts will soon be published in your ATMOPSHERE-OCEAN publication.

Les trois résumés suivants paraîtront sous peu dans votre revue ATMOSPHERE-OCEAN.

AO-809

Surface Absorbed and Top-of-Atmosphere Radiation Fluxes for the Mackenzie River Basin from Satellite Observations and a Regional Climate Model and an Evaluation of the Model

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Abstract: Both the earth-reflected shortwave and outgoing longwave radiation (OLR) fluxes at the top of the atmosphere (TOA) as well as surface-absorbed solar fluxes from Canadian Regional Climate Model (CRCM) simulations of the Mackenzie River Basin for the period March 2000 to September 2003 are compared with the radiation fluxes deduced from satellite observations. The differences between the model and satellite solar fluxes at the TOA and at the surface, which are used in this paper to evaluate the CRCM performance, have opposite biases under clear-skies and overcast conditions, suggesting that the surface albedo is underestimated while cloud albedo is overestimated. The slightly larger differences between the model and satellite fluxes at the surface compared to those at the TOA indicate the existence of a small positive atmospheric absorption bias in the model. The persistent overestimation of TOA reflected solar fluxes and underestimation of the surface-absorbed solar fluxes by the CRCM under all sky conditions are consistent with the overestimation of cloud fraction by the CRCM. This results in a larger shortwave cloud radiative forcing (CRF) both at the TOA and at the surface in the CRCM simulation. The OLR from the CRCM agrees well with the satellite observations except for persistent negative biases during the winter months under all sky conditions. Under clear skies, the OLR is slightly underestimated by the CRCM during the winter months and overestimated in the other months. Under overcast conditions the OLR is underestimated by the CRCM, suggesting an underestimation of cloud-top temperature by the CRCM. The difference between model and satellite fluxes is improved compared to previously reported results largely because of changes to the treatment of the surface in the model.

Résumé : [Traduit par la rédaction] On compare les flux de rayonnement aux courtes longueurs d'onde réfléchis par la terre de même que le flux aux grandes longueurs d'onde (RGLO) au sommet de l'atmosphère (SDA) ainsi que les flux solaires absorbés à la surface selon les simulations du modèle régional canadien du climat (MRCC) dans le bassin du fleuve Mackenzie pour la période allant de mars 2000 à septembre 2003 avec les flux de rayonnement déduits à partir des observations satellitaires. Les différences entre les flux solaires du modèle et du satellite au SDA et à la surface, que l'on utilise dans le présent article pour évaluer la performance du MRCC, ont des biais opposés dans des conditions de ciel clair et de ciel couvert, ce qui semble indiquer que l'albédo de la surface est sous-estimé alors que celui des nuages est surestimé. Les différences légèrement plus importantes entre les flux à la surface du modèle et du satellite comparativement à celles au SDA indiquent l'existence d'un faible biais positif d'absorption atmosphérique dans le modèle. La surestimation persistante des flux solaires réfléchis au SDA de même que la sous-estimation persistante des flux solaires absorbés à la surface quel que soit l'état du ciel sont en accord avec la surestimation de la fraction nuageuse par le MRCC. Ceci est à l'origine d'un plus grand forçage radiatif de courtes longueurs d'onde par les nuages tant au SDA qu'à la surface dans la simulation du MRCC. Le RGLO du MRCC s'accorde bien avec les observations satellitaires sauf pour des biais négatifs persistants durant les mois d'hiver quel que soit l'état du ciel. Par ciel clair, le RGLO est légèrement sous-estimé par le MRCC durant les mois d'hiver et surestimé durant les autres mois. Par ciel couvert, le RGLO est sous-estimé par le MRCC, ce qui porte à croire que le

MRCC sous-estime la température du sommet des nuages. La différence entre les flux du modèle et du satellite est améliorée par rapport aux résultats précédemment signalés, en grande partie à cause de changements apportés au traitement de la surface dans le modèle.

OC-282

Does the North Atlantic Oscillation Affect Hydrographic Properties on the Canadian Atlantic Continental Shelf?

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Abstract: An analysis of hydrographic data from the eastern Canadian continental shelf indicates that large-scale spatial patterns of bottom temperature and salinity respond to sustained periods of weak and strong meteorological forcing represented by the winter North Atlantic Oscillation (NAO) index. Warm, salty (cold, fresh) conditions prevail on the Newfoundland-Labrador Shelf, the eastern Scotian Shelf and the Gulf of St. Lawrence during periods of negative (positive) NAO anomalies. The opposite response is seen on the central and western Scotian Shelf and in the Gulf of Maine. Comparison of years when the NAO anomaly was positive and had the same sign for at least the two preceding years with those years when the NAO anomaly was negative and had the same sign for at least the two preceding years, shows that differences in bottom temperature and salinity, at the same location, can be up to approximately 2°C and 0.4. A plausible explanation for the pattern lies in a combination of local forcing and the highly advective nature of the oceanography that responds to NAO forcing. Greater westward transport of Labrador Slope Water along the shelf edge and subsequent on-shelf penetration of hydrographic anomalies during periods of negative NAO anomalies give rise to the dipole nature of the temperature and salinity patterns. The effects on hydrographic properties appear to be integrated over several years of meteorological forcing, again likely related to advection in the region.

Résumé: [Traduit par la rédaction] Une analyse des données hydrographiques du plateau continental de l'est du Canada indique que des configurations spatiales à grande échelle de la température et de la salinité au fond varient sous l'effet de périodes prolongées du forçage météorologique fort et faible représenté par l'indice d'oscillation nord-atlantique (NAO). Des conditions chaudes et salées (froides et douces) prévalent sur le plateau continental de Terre-Neuve–Labrador, dans l'est du plateau néo-écossais et dans le golfe du Saint-Laurent durant les périodes d'anomalie négative (positive) de NAO. La réaction inverse est observée dans le centre et l'ouest du plateau néo-écossais et dans le golfe du Maine. La comparaison des années au cours desquelles l'anomalie de la NAO était positive et avait le même signe pendant au moins les deux années précédentes, avec les années au cours desquelles l'anomalie de la NAO était négative et avait le même signe pendant au moins les deux années précédentes, montre que les différences dans la température et la salinité au fond, au même endroit, peuvent atteindre environ 2°C et 0,4. Une explication plausible de cette configuration fait intervenir une combinaison du forçage local et du caractère très advectif de la réponse océanographique au forçage de la NAO. Un plus grand transport vers l'ouest de l'eau du talus continental du Labrador le long de l'accore du plateau et la pénétration subséquente sur le plateau d'anomalies hydrographiques durant les périodes d'anomalie négative de la NAO donnent leur caractère dipolaire aux configurations de température et de salinité. Les effets sur les caractéristiques hydrographiques semblent être intégrés sur plusieurs années de forçage météorologique, encore une fois probablement lié à l'advection dans la région.

AO-807

Trend Analysis of Winter Rainfall over Southern Québec and New Brunswick (Canada)

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Abstract: Winter rainfall is a non-negligible issue for urban drainage in Canada as it can generate significant flooding, especially when it occurs at the same time as high air temperature and in the presence of an appreciable snow cover. According to climate change scenarios, it is expected that the occurrence of these events will increase in a future climate. The purpose of this paper is to perform a trend analysis on six indices related to winter rainfall (January-February) at 60 weather stations located in southern Québec and New Brunswick (Canada) in order to detect possible trends in the frequency or intensity of winter rainfall events during the twentieth century. Datasets were provided by Environment Canada and come from the Canadian Daily Rehabilitated Precipitation Database. The bootstrap-based Mann-Kendall test is used to detect possible non-stationarities in the dataset, while Sen's slope estimator is used to quantify the magnitude of the slope. Results show that 19 stations out of 60 present a significant trend (18 of them being positive) at a 5% level for the winter (January-February) total rainfall. In most cases where a trend was detected for winter rainfall there was also an increase in the number of days with rainfall (43% of the stations). These results suggest that globally, for the region under study, rainfall during January and February was more likely to occur, often resulting in a significant increase in the total rainfall during these months. Increasing trends in maximum daily rainfall during January and February were also observed for 9 stations (15% of the stations). The spatial distribution of stations where significant trends were detected is consistent with the hypothesis that trends in winter rainfall are more likely to be observed for stations located in the southern part of the region under study.

Résumé: [traduit par la rédaction] Les chutes de pluie en hiver posent un problème de drainage urbain non négligeable au Canada, car elles peuvent donner lieu à d'importantes inondations, surtout lorsqu'elles surviennent durant une période où la température de l'air est élevée et que le sol est couvert d'une couche de neige appréciable. Selon les scénarios de changement climatique, la fréquence de ces évènements devrait augmenter dans un climat futur. Le but de cet article est d'effectuer une analyse de tendance sur six indices liés aux chutes de pluie en hiver (janvier-février) à 60 stations météorologiques situées dans le sud du Québec et au Nouveau-Brunswick (Canada), afin de détecter les tendances possibles dans la fréquence ou l'intensité des évènements de chute de pluie en hiver au cours du XX^{e} siècle. Les ensembles de données ont été fournis par Environnement Canada et proviennent de la base de données reconstruites de précipitations quotidiennes canadienne. On utilise le test de Mann-Kendall, fondé sur la méthode de l'autoamorçage, pour détecter les non-stationarités possibles dans l'ensemble de données en même temps que l'estimateur de pente de Sen pour déterminer la valeur de la pente. Les résultats montrent que 19 des 60 stations affichent une tendance nette (18 d'entre elles étant positives) à un niveau de 5 % pour les chutes de pluie totales en hiver (janvier-février). Dans la plupart des cas où une tendance a été détectée dans les chutes de pluie hivernales, il y avait aussi une augmentation du nombre de jours de pluie (43 % des stations). Ces résultats donnent à penser que, dans l'ensemble, pour la région à l'étude, les chutes de pluie étaient plus probables en janvier et en février, ce qui occasionnait souvent une augmentation importante des chutes de pluie totales durant ces mois. Des tendances croissantes dans les chutes de pluie maximales en janvier et en février ont aussi été observées à 9 stations (15 % des stations). La distribution spatiale des stations où des tendances nettes ont été détectées est conforme à l'hypothèse selon laquelle il est plus probable d'observer des tendances dans les chutes de pluie en hiver aux stations situées dans la partie sud de la région à l'étude.

Next Issue *CMOS Bulletin SCMO*

Next issue of the *CMOS Bulletin SCMO* will be published in **October 2007.** Please send your articles, notes, workshop reports or news items before **September 7, 2007** to the address given on page ii. We have an **URGENT** need for your written contributions.

Prochain numéro du *CMOS Bulletin SCMO*

Le prochain numéro du *CMOS Bulletin SCMO* paraîtra en **octobre 2007.** Prière de nous faire parvenir avant le **7 septembre 2007** vos articles, notes, rapports d'atelier ou nouvelles à l'adresse indiquée à la page ii. Nous avons un besoin **URGENT** de vos contributions écrites.

Books in search of a Reviewer
Livres en quête d'un critique

Flood Risk Simulation, by F.C.B. Mascarenhas, co-authored with K. Toda, M.G. Miguez and K. Inoue, WIT Press, January 2005, ISBN 1-85312-751-5, Hardback, US$258.00.

Statistical Analysis of Environmental Space-Time Processes, by Nhu D. Le and James V. Zidek, Springer Science+Business Media Inc., 2006, ISBN 0-387-26209-1, Hardback, US$79.95.

Nonlinear Dynamics and Statistical Theories for Basic Geophysical Flows, by Andrew J. Majda and Xiaoming Wang, Cambridge University Press, 2006, pp.551, ISBN 0-521-83441-4, Hardback, US$90.00, 2 copies available.

The Equations of Oceanic Motions, by Peter Müller, Cambridge University Press, ISBN # 0-521-85513-6, 2006, Hardback, US$80.

The Chronologers' Quest: The Search for the Age of the Earth, by Patrick Wyse Jackson, Cambridge University Press, ISBN # 0-521-81332-8, Hardback, pp.291, US$30, 2 copies available.

The Gulf Stream, by Bruno Voituriez, IOC Ocean Forum Series, UNESCO publishing, ISBN# 978-92-3-103995-9, Paris, 2006, pp.223.

Solitary Waves in Fluids, Editor: R.H.J. Grimshaw, Wessex Institute of Technology Press, ISBN 978-1-84564-157-3, pp.183, Hardback, February 2007, pp.183, US$130.

Waves in Oceanic and Coastal Waters, Leo H. Holthuijsen, Cambridge University Press, ISBN 978-0-521-86028-4, 2007, pp.387, Hardback, US$80, 2 copies available.

Inter-Basin Water Transfer, Case Studies from Australia, United States, Canada, China and India, Fereidoun Ghassemi and Ian White, International Hydrology Series, Cambridge University Press, ISBN 978-0-521-86969-0, Hardback, pp.435, US$165.

Numerical Modeling of Ocean Circulation, Robert B. Miller, Cambridge University Press, ISBN 978-0-521-78182-4, Hardback, pp.242, US$65.

Precipitation, Theory, Measurement and Distribution, Ian Strangeways, Cambridge University Press, ISBN 978-0-521-85117-6, Hardback, pp.290, US$130.

Radiation in the Atmosphere: A Course in Theoretical Meteorology, by Wilford Zdunkowski, Thomas Trautmann and Andreas Bott, Cambridge University Press, ISBN 978-0-521-87107-5, Hardback, 2007, US$135.00, pp.482.

Radiation in the Atmosphere: A Course in Theoretical Meteorology, by Wilford Zdunkowski, Thomas Trautmann and Andreas Bott, Cambridge University Press, ISBN 978-0-521-87107-5, Hardback, 2007, US$135.00, pp.482.

Human Impacts on Weather and Climate, by William R. Cotton and Roger A Pielke Sr., Second Edition, Cambridge University Press, ISBN 978-0-521-60056-9, Paperback, US$55.00, pp.308 + 12 colour plates.

Fishers' Knowledge in Fisheries Science and Management, Edited by Nigel Haggan, Barbara Neis and Ian G. Baird, Coastal Management Sourcebooks 4, UNESCO Publishing, ISBN 978-92-3-104029-0, 2007, Hardback, pp.437.

Marine Habitat and Cover, Their Importance for Productive Coastal Fishery Resources, John F. Caddy, Oceanographic Methodology Series, UNESCO Publishing, ISBN 978-92-3-104035-1, 2007, Hardback, pp.253.

Our Warming Planet

The atmospheric, oceanographic and cryospheric research communities are welcomed to the 2009 IAMAS, IAPSO and UCCS Joint Assembly to be held in Montréal, Québec, Canada, July 10 - 29, 2009.

Members of the National Organizing Committee are:

• Michel Béland, Environment Canada, Chair;
• Jacques Derome, McGill University, Scientific Program Coordinator;
• Pierre Dubreuil, Executive Secretary;
• Laurier Forget, National Research Council Canada, Assembly Director;
• Charles Lin, IAMAS, Environment Canada;
• Scott Munro, UCCS, University of Toronto;
• Lawrence Mysak, IAPSO, McGill University; and
• Kim Schmidt, Fisheries and Oceans Canada.

For more information, please consult www.iamas-iapso-uccs-2009-montreal.ca. Please send enquiries by e-mail at montreal2009@nrc-cnrc.gc.ca

Note from the Editor:
IAMAS: International Association of Meteorology and Atmospheric Sciences.
IAPSO: International Association for the Physical Sciences of the Oceans.
UCCS: Union Commission for the Cryospheric Sciences.

Call for Papers: OMRN 2007 National Conference

1 September is the deadline for submitting abstracts to the OMRN 2007 National Conference, scheduled for 24-27 October 2007 in Ottawa, Ontario. The annual conference of the Ocean Management Research Network (OMRN) focus on the management of Canada's coasts and oceans by integrating research and policy, social science and natural science, and the human dimension. The 2007 Conference themes are: Ocean Agenda Implementation; Canada's North and the Arctic Ocean; Impacts and Adaptations of Coastal Communities; and Canada's Oceans and Climate Change. For more information, please consult http://www.omrn-rrgo.ca/index.php?action=conference.index.

IOC Strategic Plan

The "IOC Strategic Plan for Oceanographic Data and Information Management (2008-2011)" is the draft version that was submitted for approval to the 24th Session of UNESCO's Intergovernmental Oceanographic Commission (IOC) Assembly on 19-28 June 2007. For more information, please consult http://www.iode.org/index.php?option=com_content&task=view&id=64.

IPY GeoNorth 2007

The First International Circumpolar Conference on Geospatial Sciences and Applications for the North will be held 20-24 August 2007 in Yellowknife, Northwest Territories. The conference is part of the International Polar Year (IPY). For additional information,please consult http://www.IPYGeoNorth.org.

International Produced Water Conference: Environmental Risks and Advances in Mitigation Technologies

St. John's Newfoundland, October 17-18, 2007
Delta St. John's Hotel and Conference Centre

In offshore oil and gas operations, produced water (the water produced with oil or gas from a well) accounts for the largest waste stream (in terms of volume discharged). Its discharge is continuous during oil and gas production and typically increases in volume over the lifetime of an offshore production platform.

Produced water discharge as waste into the ocean has become an environmental concern because of its potential contaminant content. Environmental risk assessments of ocean discharge of produced water have yielded different results. For example, several laboratory and field studies have shown that significant acute toxic effects cannot be detected beyond the "point of discharge" due to rapid dilution in the receiving waters. However, there is some preliminary evidence of chronic sub-lethal impacts in biota associated with the discharge of produced water from oil and gas fields within the North Sea.

To address this emerging issue, the International Produced Water Conference will be held in St. John's Newfoundland, Canada from October 17-18, 2007. Participants will include academia, government scientists and private contractors in the fields of biology, toxicology, geochemistry, organic chemistry, physical oceanography and environmental engineering. The meeting will provide a forum for production of a state-of-the-art review of scientific knowledge on the environmental risk of ocean discharge of produced water and advances in mitigation technologies.

As the composition and concentration of potential produced water contaminants may vary from one geologic formation to another, this conference will also highlight the results of recent studies in Atlantic Canada. Scientific papers presented at this conference will be published in an authoritative book following peer-review. Additional conference information is available at: http://www.ipwc.ca

Investissement majeur dans la flotte de la Garde Côtière du Canada

St. John's, T.-N.-L. – L'honorable Loyola Hearn, ministre des Pêches et des Océans, a annoncé le 12 avril dernier les détails de l'investissement dans la modernisation de la flotte de la Garde côtière canadienne (GCC).

Le budget fédéral de mars 2007 a prévu 324 millions de dollars pour l'achat et l'entretien de six nouveaux navires pour la flotte de la GCC. Ces acquisitions porteront l'investissement total du gouvernement fédéral à plus de 750 millions de dollars depuis février 2006, pour l'achat de quatre nouveaux navires hauturiers et 12 navires de patrouille semi-hauturiers. La Garde côtière a déjà dans ses cartons des plans pour l'acquisition d'un aéroglisseur.

Huit des nouveaux navires de patrouille semi-hauturiers seront polyvalents et serviront d'abord aux activités de conservation des pêches et aux tâches de protection dans les régions des Maritimes, du Québec et du Pacifique. Le reste des quatre navires semi-hauturiers constitue de nouvelles acquisitions pour la flotte et sera affecté à la sûreté du système de la voie maritime du Saint-Laurent et des Grands Lacs. Ces navires prendront part à un programme conjoint avec la Gendarmerie royale du Canada en réponse à l'engagement du gouvernement de rehausser la sécurité des côtes et des voies navigables du pays.

Trois navires de pointe spécialisés dans la recherche scientifique auront leur port d'attache respectivement dans les régions du Pacifique, des Maritimes et de Terre-Neuve tandis qu'un quatrième navire de recherche océanographique sera basé dans les Maritimes.

Dans l'ensemble, cinq des nouveaux navires constituent des ajouts à la flotte de la Garde côtière canadienne et 11 remplaceront les navires existants dont la durée utile tire à sa fin. Le renouvellement de la flotte est une entreprise qui s'étendra sur plusieurs années; c'est en août 2009 que le Canada prendra livraison du premier navire tandis qu'on a ciblé 2014 comme année de la prise de possession du dernier navire. Les nouveaux navires seront affectés dans leur région de destination attribuée par la Garde côtière au fur et à mesure qu'ils seront disponibles.

L'aéroglisseur sera basé dans la région du Québec et sera utilisé surtout pour les opérations de recherche et de sauvetage, d'entretien des aides à la navigation et de déglaçage pour la prévention des inondations et les opérations dans la voie maritime.

"Le renouvellement de la flotte de la marine civile du pays contribuera de surcroît à donner un coup de pouce à l'industrie de la construction navale, a observé le ministre Hearn, fournira un soutien additionnel et fiable en matière de recherche scientifique marine, de plus en plus importante, et contribuera à renforcer la présence du Canada".

La Garde côtière fournit des services maritimes au nom du gouvernement fédéral, y compris des opérations de recherche et de sauvetage, l'entretien des aides à la navigation, le déglaçage, l'aide au commerce maritime et une intervention environnementale efficace en pleine mer. La Garde côtière donne également son appui à ses partenaires fédéraux en assurant la sécurité le long des frontières maritimes du Canada.

Le ministre Hearn a également annoncé le redéploiement de deux brise-glace lourds de la Garde côtière. Le NGCC *Terry Fox* sera transféré de la région des Maritimes à la région de Terre-Neuve-et-Labrador en avril 2008 et le NGCC *Louis S. St-Laurent* suivra en avril 2009. Ces transferts sont effectués pour éviter des coûts additionnels d'infrastructure qui auraient été requis si les navires étaient demeurés dans la région des Maritimes. L'infrastructure est déjà en place à Terre-Neuve.

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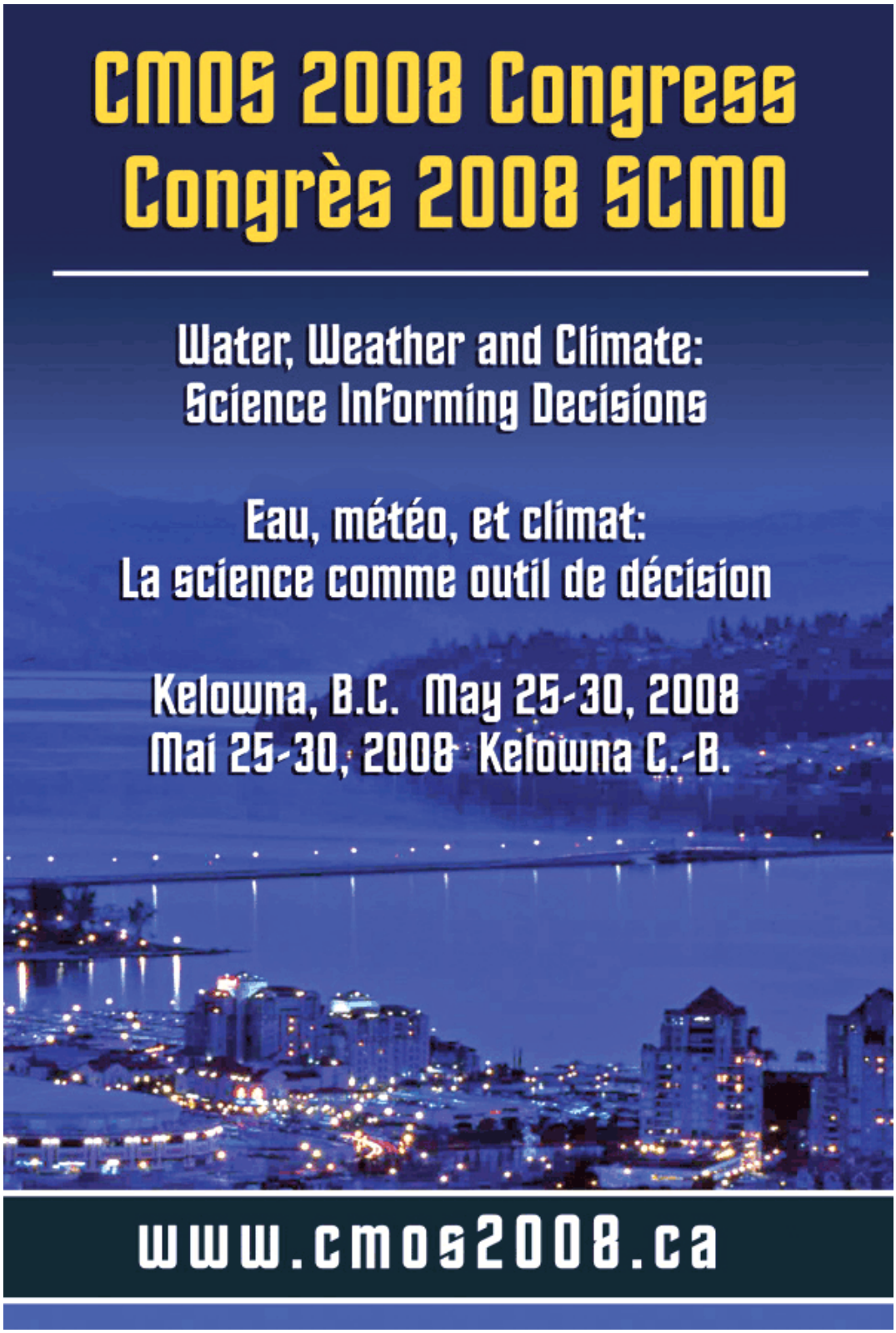
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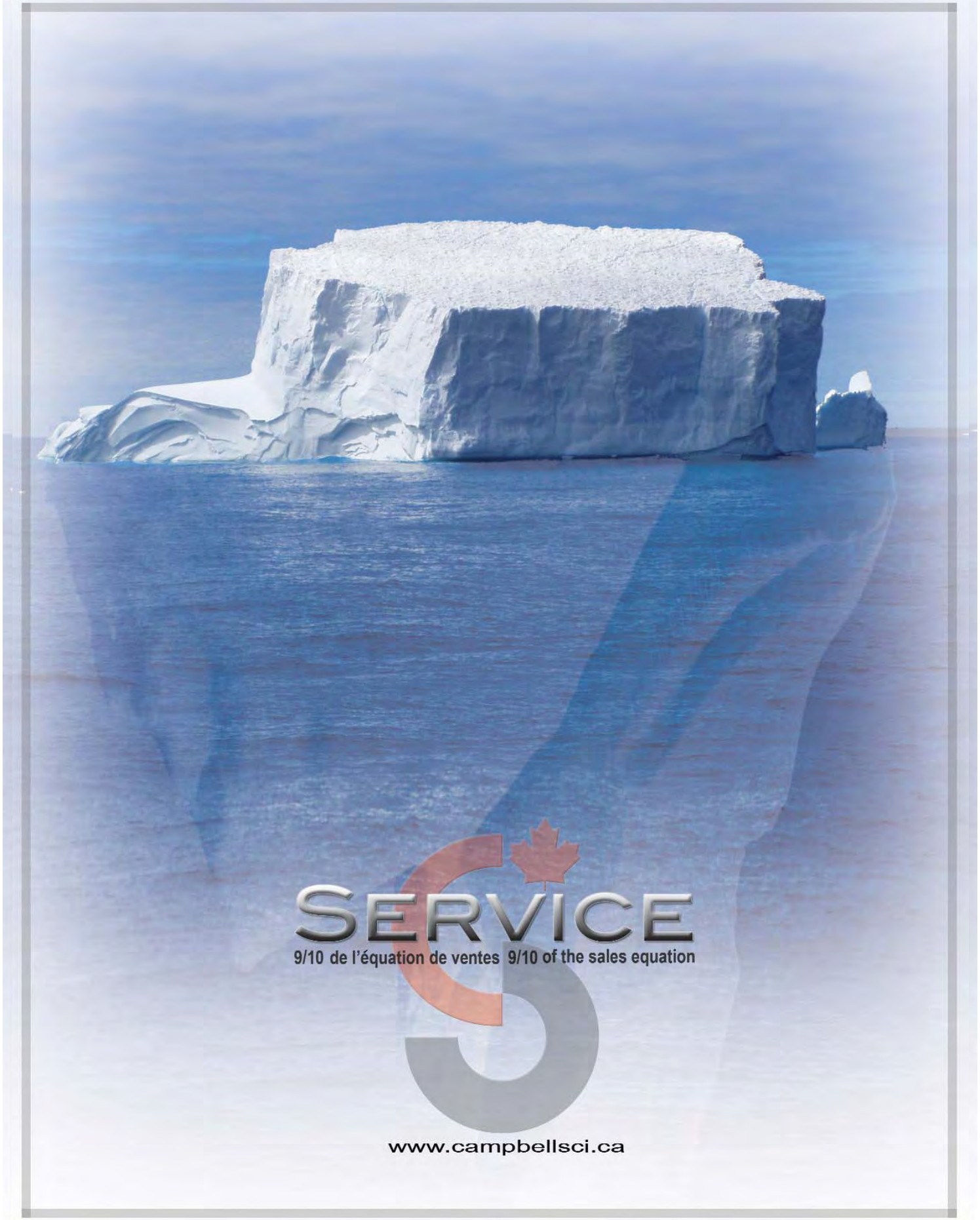
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