

# FISHBYTES

THE NEWSLETTER OF THE FISHERIES CENTRE – UNIVERSITY OF BRITISH COLUMBIA  
VOLUME 10 ISSUE 5 SEPTEMBER/OCTOBER 2004

## Mysterious communications from the deep win infamous prize

by Ben Wilson

The phone rings and the man on the line announces that he's Marc Abrahams ringing from Harvard. He goes on "You may consider this good news or perhaps you won't. Our board has selected your work for this year's biology prize. Would you like to accept it? I'll understand if you don't, people take this news in different ways."

The events that precipitated this call began in the summer of 2000 at the Bamfield Marine Science Centre, one night at about 3 am. It was quiet in the lab; in fact it was very quiet. Just me sitting



in the dark by a tank containing ten restful herring. The lights were out, all unnecessary electronics were off, even the phone was unplugged. I was poised to play the unsuspecting herring the calls of a hunting killer whale when instead the air was filled with a loud rasping noise. A five second burst of ticking sounds not unlike someone blowing a raspberry.

I thought it was a practical joke and dashed for the light-switch. Had my lab-mates been hiding somewhere behind one of the benches? No, we (the fish and me) were alone. So began a spiral of increasingly weird experiments. At the end of it, my co-authors

(Prof. Lawrence Dill and Dr Robert Batty) and I knew that herring produce burst pulse sounds; they produce them at night; if you give a dead fish a squeeze you get a sound much like that produced by a live one and fish in a tank produce these sounds in disproportion to the density of fish around them - the more fish the more sounds per fish. After another round of experiments which involved a hyperbaric chamber, some wire netting and a trip to Scotland, we also figured out that the sounds were produced by ejecting air from the swim bladder via a thin tube opening at the anal pore. An admittedly unusual mechanism for sound production but given the other weird and wondrous ways that fish make sounds, only a little out of the ordinary. We wrote up our findings and sent them off for publication.

About this time last year our paper came out and by then I was working on the Behaviour@Sea Project at the Fisheries Centre. Mary-Anne Lea and I were tracking sea lions off the coast of southeast Alaska. One afternoon the ship's satellite phone rang. It was a chap called Dave Barry - I'd never heard of him - he said he was a reporter and had seen our paper. "Would I mind answering some questions?" So of course I did, what scientist wouldn't? The

*Continued on page 2 - herring*

### In this issue...

Ben Wilson wins Ig Nobel Prize

Two new fisheries books

Fisheries Centre party

Conferences and meetings

Another wedding!

And, as always, lots of News and Notes!

# New Book:

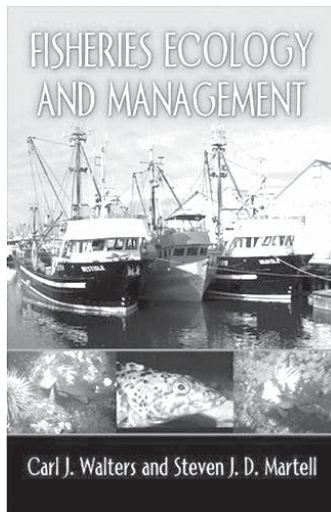
## *Fisheries Ecology and Management*

A new fisheries management book by Faculty members, Carl Walters and Steve Martell, has just been published by Princeton University Press.

Quantitative modeling methods have become a central tool in the management of harvested fish populations. The book examines how these modeling methods work, why they sometimes fail, and how they might be improved by incorporating larger ecological interactions.

***Fisheries Ecology and Management*** provides a broad introduction to the concepts and quantitative models needed to successfully manage fisheries.

The authors develop models that account for key ecological dynamics such as trophic interactions,



in relation to changes in abundance, then finding ways to implement such strategies in terms of monitoring and regulatory procedures. The book provides a general framework for developing assessment models in

food webs, multi-species dynamics, risk-avoidance behavior, habitat selection and density-dependence. Fisheries policy development is treated as a two-stage process, first identifying strategies for varying harvest

terms of state-observation dynamics hypotheses, and points out that most fisheries assessment failures have been due to inappropriate observation model hypotheses rather than faulty models for ecological dynamics.

The book promises to become an important contribution to the field of fisheries science. To quote: "Walters and Martell 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." - Jeffrey Hutchings, Dalhousie University.

*Fisheries Ecology and Management* is available at Amazon.com and from Princeton University Press <http://pup.princeton.edu/titles/7913.html>.



### *Herring -Continued from page 1*

next day the phone rang again, then again and again. Dave Barry turned out to have quite a following and now our boat, in remote Alaska, was the focus of the world's press. We called into a snowy windswept port to pick up supplies and there on the dock was a film crew! It turns out that a fish ejecting air from the swimbladder via a tube near the anus, to the world's press at least, is near enough a fart and therefore hot news. A feature made even more exciting by the possibility that the fish might be using these sounds to communicate. They slathered down the satellite phone like starved dogs.

All the attention lasted a couple of weeks before thankfully dying down to just the occasional inquiry from publishers of children's books, ichthyologists and the US Navy. That was before our mystery caller from Harvard introduced himself. Marc Abrahams, it turns out, is the director of the Ig Nobel committee and they

had chosen our study as joint winners of the 2004 Biology prize. Let me just be clear about this, "Ig Nobel" not "Nobel". These awards are the young tear-away brother of the lofty Scandinavian honours. They are given out to studies "that first make you laugh and then make you think" at a raucous ceremony held annually at Harvard. This year they were also augmented with an all-Canadian version in Montreal. As a result, the world's media have once more been frothing at the mouth, desperate for information on fish anatomy, behaviour and their implications for herring conservation. If there is any kind of moral to this tale it's when you're working late in the lab, go home before midnight or all hell might break loose!

**Ben Wilson** is a researcher based at the Marine Mammal Research Unit and about to take up a new faculty position as Principal Investigator with the Scottish Association for Marine Science.

### Reference

Wilson, B., Robert S. Batty and Lawrence M. Dill, 2003. Pacific and Atlantic Herring Produce Burst Pulse Sounds *Biology Letters*, 271:S95-S97.

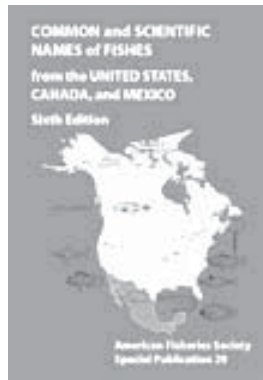
### **Rashid Sumaila honorary member of UBC Food Co-op**

Rashid Sumaila has been selected by the UBC Food Co-op to be included in its list of Honorary Members. The Co-op's board of directors were asked to nominate people who they felt had "been a significant inspiration to youth or students" and could "inspire youth to change the world". Dr Sumaila joins a diverse list of honorary members, including William Rees (School of Community and Regional Planning and FC Assoc. Faculty), Moura Quayle (Dean of the Faculty of Agricultural Sciences) and Kurt Grimm (Earth and Ocean Sciences). For more information about the UBC Food Co-op, a non-profit group committed to providing organic and fair-trade foods for student budgets: [www.ubcfoodcoop.ca](http://www.ubcfoodcoop.ca).

# Book Review: Common and Scientific Names of Fishes from the United States, Canada, and Mexico

by **Kátia M. F. Freire**

The sixth edition of the book "Common and scientific names of fishes from the United States, Canada, and Mexico" was recently published by the American Fisheries Society as Special Publication 29. As the title makes clear, the major change in relation to the fifth edition of 1991 is the inclusion of fishes from Mexico and their corresponding Spanish names. French names for those species occurring in Quebec were also added. A total of 3,694 fish species (down to a depth of 200 m) are presented in this new publication, a substantial increase from the 2,428 species presented in 1991. Most of the added species are from Mexican waters, although some newly described species, mainly from Californian waters, were added to the list. On the other hand, some species names were eliminated as they referred to synonyms. The basic structure of the previous edition was kept, although some minor arrangements were made to accommodate Spanish and French names of both fish families and species



and an introduction in all three languages. One of the objectives of this list is to provide a unique common name for each fish species occurring in the region, in accordance with some principles listed in the book. These were not changed from the previous edition, although some discussion took

place at the meeting of the Committee of Names of Fishes that I had the opportunity to attend. One extra advantage for the users of such a list is the availability of the sixth edition in the form of a CD, facilitating the searching process for those dealing with a great number of species. This book is a significant contribution to society (both lay and academic), built on more than 50 years of work. It represents a reliable source of fish occurrence and correspondence between common and

scientific names. It helps to keep us updated with new changes in scientific nomenclature, and also set official common names used as reference by diverse sectors of society. Hopefully, this volume will inspire other countries to follow the same route in trying to set official names and avoiding the consequences (e.g., on catch statistics) of having a diverse range of common names for the same species and the same common name shared amongst species, as occurs in Brazil<sup>2</sup>.

1. Nelson, J. S., E. J. Crossman, H. Espinosa-Pérez, L. T. Findley, C. R. Gilbert, R. N. Lea & J. D. Williams (2004). *Common and scientific names of fishes from the United States, Canada, and Mexico*. American Fisheries Society, Special Publication 29, Bethesda, Maryland: 386 p.

2. Freire, K.M.F. & D. Pauly (2003). What's in there? Common names of Brazilian marine fishes. *Fisheries Centre Research Reports* 11(1): 439-444.



## Myers speaks in Vancouver

by **Robert Ahrens**

Bearing warnings of the impact of overexploitation by fisheries at a global scale Professor Ransom Myers (Department of Biology, Dalhousie University) addressed the Vancouver Institute on October 16<sup>th</sup> 2004. Presenting a myriad of analyses covering a broad geographical range and suite of species, he contrasted present day stock abundances with those of roughly fifty years ago. Professor Myers' message was clear: exploitation by fisheries on a global scale has resulted in an alarming reduction in species abundance, particularly larger pelagic species and sharks. Not only

are such reductions a cause for concern in themselves, Myers also presented evidence of dramatic changes in ecosystem structure as a result. The day prior to the event the Fisheries Centre also had the pleasure of a lecture in which Professor Myers presented in more detail the methodologies utilized for dealing with such large analyses, as well as details of some of the current work he is pursuing.

For more information, see <http://as01.ucis.dal.ca/ramweb/content.php?lang=en&i=1&sub=0~myers/>

## Aquaculture Award

**Dr Ed Donaldson**, Research Scientist Emeritus at DFO's West Vancouver Laboratory and Adjunct Faculty member at the Fisheries Centre, was awarded the Aquaculture Association of Canada 2004 Research Award of Excellence on October 20, 2004, at the Society's Annual Meeting at the Chateau Frontenac in Quebec City. This prestigious award was given: "In recognition of his exceptional research contribution and commitment to aquaculture research and industry development". Further details are provided at the Aquaculture Association of Canada web site under "awards" "2004 Research Award of Excellence": [www.aquacultureassociation.ca](http://www.aquacultureassociation.ca)

# Fisheries Centre welcome party

The *Sea Around Us* project's Sherman Lai had his camera out at this year's annual welcome party, held on September 7 at the home of Fisheries Centre Director, Daniel Pauly and Mrs Sandra Pauly. We thought we would take this opportunity to put some faces to the many names appearing in these newsletters throughout the year.



Dean of the Faculty of Graduate Studies Frieda Granot with hosts, Sandra, Daniel and Angela Pauly.



Ken Ashley, of the BC Fisheries Research and Development Section with Carl Walters, Carl's wife Sandy Buckingham and Fisheries Centre Faculty member Steve Martell.

Graduate students Marivic Pajaro, William Cheung and wife Vicki, Jonathon Anticamara and Yajie Liu.



Jordan Rosenfeld of the BC Fisheries Research and Development Section and Sea Around Us Faculty member Villy Christensen.



Sandy Buckingham, Villy Christensen and graduate students, Heather Keith, Michael Melnychuk and Louisa Wood.



Former student and Marine Mammal Research Unit Researcher, Andrea Coombs with partner Graham Wallace, former research assistant at MMRU's Open Water Research site.

Project Seahorse's Angela McCue, with Madeleine MacIvor (Acting Director of the First Nations House of Learning), Tim Michel (Science Faculty's First Nations Co-ordinator) and the Fisheries Centre's Nigel Haggan.



New graduate students, Megan Moody, Tiphaine Du Dot, Pamela Lestenkof and Ahmed Khan.



# Fisheries Centre welcome party



New graduate student, Line Bang Christensen, with Daniel Pauly.



Graduate student Mary Cashman with Project Seahorse's Angela McCue.

Director of the Marine Mammal Research Unit, Andrew Trites with new students Tiphaine Du Dot and Pamela Lestenkof.



Graduate students, Sarah Foster (l) and Dawit Tesfamichael with Rossalyn Day (right), sister of CephBase's Catriona Day.



Director of Project Seahorse, Amanda Vincent (second from left) with Theresa Godin, Marvin Rosenau and Ken Ashley, from BC Fisheries Research and Development Section.



Bob Hunt (Project Seahorse), Dale Marsden (grad student), Keith Martin Smith (Project Seahorse), Robyn Forrest (grad student), Irina Fainberg and Adrian Kitchingman (SAUP).

Graduate student Nathan Taylor (centre) and researchers from the Marine Mammal Research Unit: Arliss Winship and Sylvie Gu enette.



... And photographer, Sherman Lai takes a break from taking pictures!



# Paris and its Jardin des Plantes, or The 2004 annual meeting of the FishBase Consortium

by Brajgeet Bhathal and Daniel Pauly

The FishBase Consortium, which supervises the further development of FishBase (which just reached 14 million 'hits per month!') had its latest meeting on September 1-3, 2004, in beautiful Paris (where an aunt of the first author happens to live). This made her stay there particularly agreeable, especially as the meeting took place at a building of Muséum National d'Histoire Naturelle (MNHN) that could be reached only by walking through the *Jardin des Plantes*, originally created for the French kings. The members of the Consortium represented were the MNHN (represented by Dr Nicolas Bailly, who had defended his PhD thesis the day before...), the FAO (Rome, Italy), the Africa Museum (Tervuren, Belgium), the Swedish Museum of Natural History (Stockholm, Sweden), the WorldFish Centre (Penang, Malaysia) and the Fisheries Centre. Dr Cornelia Nauen, of the European Commission in Brussels, an early and strong supporter of FishBase, also attended.

The meeting was chaired by Nicolas Bailly, who replaced the outgoing Consortium Chair, a clearly much-relieved Daniel Pauly, and this was well run, especially as Bailly had much help from his wife, Deng Palomares.

The meeting had three components: 1) a one day presentation of progress reports by the Consortium members; 2) a one day mini-symposium on biodiversity database inspired by FishBase; and 3) a one day discussion of work plans.

The first thing that the Consortium did, though, was discuss and unanimously accept the application of the School of Biology (Laboratory of Ichthyology, Aristotle University of Thessaloniki, Greece) to join the



Consortium members at the Paris meeting, including members mentioned in the text: Brajgeet Bhathal, Deng Palomares and Nicolas Bailly (front row, second, third and fourth from left); Rainer Froese (middle row, between Palomares and Bailly); and 'Kostas' Stergiou (third from right).

FishBase Consortium as a new member. Not only that, but Dr 'Kostas' Stergiou, who has long collaborated with the FishBase group, and who led the 3-person delegation from Thessaloniki, was elected vice chair for the year 2004-2005, and thus will become chair in September, 2005, at the next Consortium meeting (which will be held in Thessaloniki).

The Fisheries Centre report was jointly presented by Daniel Pauly, Deng Palomares and Brajgeet Bhathal. Pauly's contribution highlighted the many deep links between FishBase and the website of the *Sea Around Us* project (see [www.seaaroundus.org](http://www.seaaroundus.org)), which emphasizes marine fisheries and their underlying biodiversity and ecosystems. Palomares reported on the FishBase-inspired biodiversity databases initiated by the *Sea Around Us*, notably on sea cucumbers (which she started), sea turtles and other marine reptiles (by Colette Wabnitz), and marine mammals (by Kristin Kaschner). Bhathal presented the work she did on assembling common names on Indian fishes and making

them available in various Indian scripts through FishBase (this work is documented, at least in part, in the issue of March 2004 of the *Sea Around Us* Newsletter, which was distributed to the meeting participants). The mini-symposium on FishBase-inspired databases was both interesting and disappointing. It was interesting because it is quite clear that lots of our taxonomic colleagues have now understood

that they must make their knowledge available to a wider audience than has so far been the case, and use the web to do that. But the presentations were also disappointing because the same errors continue to be made, which will prevent these databases from enjoying a success comparable to that of FishBase (e.g. not providing access to the data via common names or 'national lists', forcing visitors to register – or even enter passwords – before being able to see the data, not acknowledging inputs from third parties, etc.). Clearly, we still have a long way to go.

The decisions regarding Consortium member work plans need not concern us here. Suffice to say that next year, FishBase will contain more data on more fish from more countries, and will thus garner more hits per month than the 14 millions it just reached. Notably, Brajgeet Bhathal will be working with Dr. A. G. Ponniah of the WorldFish Center on the translation into Hindi of the FishBase search page, thus making it more accessible to a wide range of potential new users.



# Conference in honour of Professor Gordon Munro

by Ussif Rashid Sumaila

The fact that Professor Gordon Munro turned 70 this year did not go unnoticed by his peers and former students. First, in July, 2004, he was awarded the International Institute of Fisheries Economics and Trade (IIFET) Service Award for his contributions to the profession (see Fishbytes, Volume 10 Issue 4). Secondly, a group of Munro's former students and associates, led by Professor Trond Bjørndal

convened a conference in his honour at the UBC Campus in August. As a testimony to Munro's significant contribution to fisheries economics, the conference attracted participants from countries as far away as New Zealand, from the Department of Fisheries and Oceans (DFO) and from the FAO. The list of participants was so impressive that a senior DFO official described the participants as a "galaxy of stars" in fisheries economics.

The papers presented at the conference were grouped into four topics, namely, (i) capital theory and natural resources, (ii) game theory and international fisheries, (iii) property rights and fisheries management, and (iv) applied fisheries economics and management. These are all areas to which Professor Munro has made significant contributions over the last three decades. Munro's paper with Colin Clark (1975) laid the foundation for the many papers in the literature that linked fisheries to the capital theoretic literature, helping to produce important and relevant results for fisheries management. The session on capital theory covered the development of this branch of fisheries economics since the contribution of Munro and Clark.

In 1979, Professor Munro published an influential paper in the Canadian Journal of Economics with the title "The Optimal Management of Transboundary Renewable Resources".



From right: Brian Copeland (Economics Department, UBC) Gordon Munro (Economics Department and Fisheries Centre, UBC), Dan Huppert (School of Marine Affairs, University of Washington) and Rashid Sumaila (Fisheries Centre, UBC) having a discussion during coffee break

This paper inspired a line of research in the application of game theory to fisheries management, including my dissertation work, where I applied game theory and Munro's model to analyze the exploitation of Barents Sea cod by coastal and offshore trawlers. Several papers (both theoretical and applied) were presented in the session on game theory and international fisheries.

The session on property rights and fisheries management began with a presentation of the "Phases in the History of Fishing Rights" by Professor Anthony Scott, who is one of the pioneers who made UBC world-famous in the field of fisheries economics. A number of papers followed Scott's presentation, which focused on different applications of property rights in fisheries management. Finally, many applied papers were presented, several of which were applica-

tions of some of the theories and concepts developed by Munro and his collaborators over the years. More information on the presentations at the conference can be obtained at [www.feru.org](http://www.feru.org) or [www.econ.ubc.ca/gmconf/gmannoun.htm](http://www.econ.ubc.ca/gmconf/gmannoun.htm).

The conference ended with a banquet at the Fairmont Hotel Vancouver. This provided participants the opportunity not only to enjoy a great dinner together, but also to share humorous stories about the interaction between Professor Munro and his colleagues and former students.

Selected papers presented at the conference, plus additional invited papers, will be published in a *festschrift* in honour of Munro, to be edited by the conference conveners: Trond Bjørndal, Daniel Gordon, Ragnar Arnason and Ussif Rashid Sumaila.



## Larkin Lecture 2005

Please mark your calendars for the Seventh Larkin Lecture\*: **Thursday, 17 March 2005**, 5 pm, UBC Biological Sciences room 2000.

**Dr Jon G. Sutinen**  
**Professor, Department of Environmental & Natural Resource Economics**  
**The University of Rhode Island**

will present

**"Blue Water Crime & Conservation: Controlling the Pirates in Marine Fisheries"**

Dr. Sutinen will also present the FISH 500 weekly seminar on **Friday, 18 March 2005**, 11 am (rm 122, Lower Mall Research Station, UBC). The Larkin Lecture and seminar are open to all.

\**Colleagues, family and friends established the biennial Larkin Lecture Fund to honour Dr Peter Larkin when he retired from the University of British Columbia and later, when he passed away in 1996 (see Northcote, T.D. 1996. Obituary of Peter Anthony Larkin. Rev. Fish Biol. Fish. 6: 374-7).*

## News and Notes

### Congratulations

Congratulations to **Dr Kristin Kaschner**, who successfully defended her PhD thesis "Modelling and mapping resource overlap between marine mammals and fisheries on a global scale" on September 15th, 2004 (see *Sea Around Us* Issue 24, p3). Kristin is now in Germany, working as a post-doc for the *Sea Around Us* project. She hopes to soon start work with the Federal Fisheries Institute in Hamburg.

And to **Wilf Swartz** who successfully defended his Masters thesis, "Global maps of the growth of Japanese marine fisheries and fish consumption" on September 14th. Wilf investigated Japan's impact on world's fisheries resources from a spatial perspective. He is now pursuing a career as environmental consultant in Oxford, England.

And congratulations to *Sea Around Us* research assistant, **Shawn Booth** and his new wife **Gwynne Prodan**, who were married by Shawn's father (**Dr Rev. R. Booth**) on an

Okanagan Lake beach in August. Shawn rode down the 'aisle' on his mountain bike - narrowly missing one guest - and, during the ceremony, an eagle was seen circling overhead. Guests enjoyed cedar-planked salmon, a bocce tournament and an east-coast style celtic band - a great Canadian wedding!



### Welcome

It's that time of year again, when we welcome new graduate students to the Fisheries Centre. Many are pictured on pages four and five.

**Robert Ahrens** arrived at the Fisheries Centre in a sleek, racing green E-Type jaguar some years ago. He has relinquished his lecturing duties in favour of a PhD. Excited about leaping into the world of tuna, Rob will be exploring temporal and spatial dynamics of yellowfin tuna at a global scale. He looks dashing in a smoking jacket.

**Line Bang Christensen** is an MSc student working with Daniel Pauly. She holds a BSc honours degree in Computer Science from UBC. She is particularly interested in exploring the power of GIS to manage natural resources. Her thesis will focus on global echinoderm populations and catch distributions in the context of sustainable management.

**Tiphaine Jeanniard Du Dot** has a BSc and an MSc (environmental toxicology) from the university of Bordeaux, France. She has worked as a research assistant in the marine station of Arcachon (France) and is now starting an MSc with Andrew Trites and David Rosen on nutritional stress and bioenergetic consequences on captive Steller sea lions.

**Sarah Foster** came to UBC from Montreal, Quebec. After working as a research biologist for Project Seahorse, she has started a PhD with Amanda Vincent, studying small fish species in tropical shrimp trawl bycatch. She has an MSc from Dalhousie University where she studied the effects of environment on fish development.

**Ahmed Khan** has a BSc from University of Sierra Leone, where he studied artisanal fishery development. In The Gambia, he participated in ecological assessments of shrimp farming, taught school biology and was a UN Volunteer with UNDP/FAO Gambia. He is now taking his MSc with Rashid Sumaila, on the nature and effect of global fishery subsidies.

**Pamela Lestenkof** is from St Paul Island, Alaska and obtained her BSc in Fisheries from the University of Alaska, Fairbanks. She is here to begin work on her MSc with Andrew Trites, studying Northern fur seals.

**Megan Moody** is from Bella Coola, B.C. Her BSc is from University of Victoria and she is taking her MSc with Tony Pitcher. She has studied the eulachon population decline in Central Coast BC for the past three years and is focusing her MSc studies on the reasons for its collapse.

**Erin Rechisky** has an MSc at University of Rhode Island, on movements of juvenile sandbar sharks in Delaware Bay. She has worked as a research associate at the Caribbean Marine Research Center, and now begins a PhD with Carl Walters and the Pacific Ocean Shelf Tracking (POST) Project studying juvenile salmon survival and continental shelf migration.

**FishBytes** is the newsletter of the Fisheries Centre at the University of British Columbia, and is published six times per year. Subscriptions are free of charge.

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