

FISHBYTES

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North American economists hold forum at UBC

by Ann Shriver¹ and U. Rashid Sumaila

From May 25-27, 2005, the North American Association of Fisheries Economists (NAAFE) held its third biennial Forum at the University of British Columbia's Gage Conference Centre. The Forum was organized by U. Rashid Sumaila of the Fisheries Centre, in collaboration with NAAFE President Jon Sutinen, of the University of Rhode Island. The combination of exciting themes, an innovative debate session, interesting pre- and post-Forum events (see boxes on pp. 4 and 5) and the beauty and attraction of Vancouver all worked together to ensure that we doubled the number

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of participants compared to the attendance at the second biennial Forum.

The third Forum was opened by the Dean of UBC's Faculty of Graduate Studies, Frieda Granot, who welcomed 130 participants from 14 countries and stressed the need to balance economic and conservation goals by bringing stakeholders together. Rashid Sumaila then set

F **E** forth the theme of the Forum: *Ensuring fisheries benefits to all generations*. Sixty-seven papers would be presented in all, which would help to clarify what we mean by fisheries benefits; what tools we have available to ensure their continuation; define the obstacles we face; and set forth new ideas to deal with these obstacles.

In early sessions of the Forum, UBC's Dr Tony Scott received an award (pictured below) on the occasion of the 50th anniversary of the publication of his seminal article "The Fishery: The Objectives of Sole Ownership," which provided some of the earliest building blocks of the science.



NAAFE president, Jon Sutinen (left), presents an award to Tony Scott on the occasion of the 50th anniversary of the publication of his seminal article "The Fishery: The Objectives of Sole Ownership". Photo by Lee Anderson.

need to develop a new political economics of fishery management, building on public choice theory, to improve the design of fishery governance institutions

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A sample of the wide range of topics touched on in Forum presentations would include fisheries governance, policy, politics and ITQs, ecosystem issues, valuation, biodiversity, rights-based fisheries (including co-management, quotas, and communities), natural capital, seafood trade, marketing and labeling, restructuring management, buyback programs, illegal and unreported fishing, subsistence fishing, spatial decision-making, measuring performance, restoration, marine protected areas, efficiency and productivity, and aquaculture (see Book of Abstracts: www.feru.org).

A high point of the Forum was the debate between Jim Wilen of the University of California, Davis, and Daniel Pauly of UBC's Fisheries Centre on how to ensure fisheries benefits for all generations from their perspectives. Pauly described the urgent situation faced in today's fisheries,

focusing on drastically reduced stock levels particularly of large predator species and declining catch levels, and emphasized the necessity of establishing large reserves to allow the recovery of damaged marine ecologies. Wilen, on the other hand, assessed the failure of fishery management in terms of failed property rights systems, which lead to perverse incentives, overcapitalization and political manipulation. Correcting incentives through a strengthening of property rights, he stressed, is our best hope of conserving fish stocks for the future (see p. 4 box).

In a plenary session, Eric Wickham, Executive Director of the Canadian Sablefish Association, shared with participants his intimate knowledge of British Columbian fisheries management. Wickham's main point was that fishermen and women are better positioned to manage their fisheries than others.

He used the experience of the management of British Columbian sablefish to argue for the management of fisheries using individual vessel quotas.

Colin Clark, author of *Mathematical Bioeconomics*, gave the Forum wrap-up. His wrap-up started with a list of the topics he had expected to be covered before the Forum started. He then compared his expectations with reality. He concluded that the Forum had met his expectations reasonably well. However, one area he would have loved to hear more about was the economics of restoration of overfished marine ecosystems and how discounting of future flows may serve as a barrier to restoration efforts.

Finally, the tight schedule of the Forum notwithstanding, we found time to talk informally, network and have fun during the coffee breaks, lunches, the Forum banquet and the post-Forum tour (see p. 5 box). 

New graduate travel scholarship

We are very pleased to announce a new travel scholarship for Fisheries Centre graduate students. The award is due to a generous donation from the Pacific Fishery Biologists (PFB), an organisation chartered in 1936 to "promote fisheries science through research, cooperation and the free exchange of ideas". The PFB recently disbanded and donated US\$3750 to the Fisheries Centre, which was one of three units to receive funds from the group.

The gift will be used to fund travel, to the value of CAD\$625, for graduate students who will be presenting a paper or a poster at a conference. Students will be able to apply for the award by writing a letter to the awards committee (to be announced) and attaching an

abstract of their contribution. Successful applicants will be required to write a report on the conference for *FishBytes*. Selection criteria are still to be determined and will be announced in a future issue of *FishBytes*, as will any recipients of the award. The Fisheries Centre will continue to award the scholarship until the funds are exhausted.

Until it was disbanded, there were over 600 members of the Pacific Fishery Biologists organisation, with members coming from the states of Alaska, Washington, Oregon and California, and from British Columbia and the Yukon Territories. The Fisheries Centre would like to sincerely thank the organisation and its membership for this generous gift. 

Cecil and Kathleen Morrow Scholarship

Fisheries Centre graduate students: It's time to put in your applications for the Cecil and Kathleen Morrow Scholarship. This scholarship is the result of a generous endowment by Cecil B. Morrow, awarded annually to the student with the best academic travel proposal for research work using techniques developed at the Fisheries Centre. Preference will normally be given to work involving international travel. A budget is not required, but the work should be able to be completed without the need for additional resources. Proposals should be no longer than 1000 words. Submit your proposal to Janice Doyle (j.doyle@fisheries.ubc.ca) no later than September 23, 2005. See also: www.fisheries.ubc.ca/grad/morrow.php.

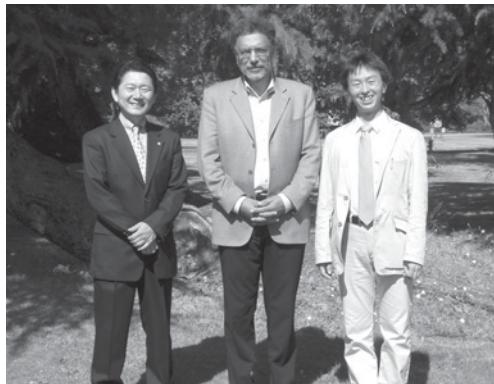
Daniel Pauly wins 2005 Cosmos Prize

Please join us in congratulating Fisheries Centre Director, Professor Daniel Pauly, for being awarded the prestigious 2005 International Cosmos Prize by the Expo'90 Foundation of Japan.

The prize is awarded annually to an individual or organization for research work that is recognized as contributing to a significant understanding of the relationships among living organisms; the interdependence of life and the global environment; and the common nature integrating these inter-relationships. The work should be characterized by a global perspective which tries to illuminate the relationships between diverse phenomena, in keeping with the concepts and principle of "The Harmonious Coexistence of Nature and Mankind." The "Cosmos" prize was named after the cosmos daisy flower, which was in full bloom at the time of the closing of Expo'90. The name also means "universe in harmony" (Kosmos), which matches the theme of Expo '90: The Harmonious Coexistence of Nature and Mankind.

The research work of prize-winners is evaluated according to the following standards:

- 1) The body of work should show an inclusive and integrated methodology and approach, in contrast to analytic and reductive methodologies.
- 2) The research must be based on a global perspective. If the focus is on a particular phenomenon or specific area, it must have universal significance and applicability.
- 3) The research should offer a long-term vision which leads to further developments, rather than solutions to limited problems.



Daniel Pauly with Mr S. Mitani (left) and Mr T. Oda (right) from the board of directors for the Cosmos Award, following the official announcement of the winner.

Photo by Geoff Gilliard.

Only one prize is presented per year, to an individual or a team, and prizewinners are awarded a commendation, a medallion and a monetary prize of 40 million yen (approximately CAD\$436, 000).

The prize has been previously awarded to: Julia C. Lillo (2004); Peter H. Raven (2003); The Charles Darwin Research Station (2002); Anne W. Spira (2001); Sir David Attenborough (2000); Wu Zheng-Yi (1999); Jared M. Diamond (1998); Richard Dawkins (1997); George B. Schaller (1996); Tatuo Kira (1995); Jacques F. Barrau (1994); and Sir Ghillean Prance (1993).

The Cosmos Prize Committee published the following reasons for awarding this year's prize to Dr Pauly:

- For alerting the public to the fact that over-fishing in the seas around the globe is bringing about a crisis to marine resources.
- For stressing the necessity for humans to devise measures for the sustainable use of fishery resources, from the perspective of marine ecology;
- For his work on simple length-based methods of stock assessment for use

in tropical fisheries;

- For his central role in the creation and development of FishBase;
- For the idea of "Fishing down marine food webs";
- For contributions to the development of Ecopath;
- For his work as Principal Investigator of the *Sea Around Us* project, which is devoted to the research, studies and policy proposals concerning marine resource management;
- For promoting the need to consider not only one single fish species, but entire marine ecosystems in fisheries management;
- For his many publications regarding the impact of human fishing activities on marine ecosystems.

The Cosmos Prize Committee concluded that, by pursuing the relationship between fishing and marine ecosystems in an inclusive manner, Dr Pauly has made outstanding achievements in the field of research into marine ecosystems and resources.

"I think it's very important that a major Japanese prize would go to someone who has worked fearlessly on the problem of overfishing," says Nancy Knowlton, a marine biologist at the University of California, San Diego, and a member of the screening committee.

Dr Pauly will travel to Japan in October 2005 to accept the prize, to present a commemorative lecture and to participate in a symposium in his honour. Please join us in congratulating him on this recognition of his life's achievements.

For more information about the Cosmos Prize and previous winners, see www.expo-cosmos.or.jp/menu_e.html.



NAAFE Forum highlights

Pre-Forum workshop

by Colette Wabnitz, UBC Fisheries Centre

The *Sea Around Us* project funded and organized a Global Fish Trade pre-Forum workshop with the broad purpose of evaluating the relationship between global fish trade and food security of fishing communities through economic, ecological and social perspectives. Four presentations were given by: (i) Wilf Swartz, who highlighted the history of Japanese fish acquisition strategies; (ii) Ussif Rashid Sumaila and Jackie Alder, on subsidies, fishing access agreements, and food security; (iii) Vlad Kaczynski, on the Illegal, Unreported and Unregulated (IUU) seafood trade in West Africa; and (iv) Frank Asche, on the role of aquaculture in fish trade and food security. A highlight of the workshop was the launching of the new *Sea Around Us* project/ Fisheries Economics Research Unit ex-vessel price database by Ussif Rashid Sumaila, Stephanie McWhinnie and Dale Marsden. Analysis using the new price database revealed that time, country, and species information may be used to help predict fish prices. To conclude, Hon. David Anderson, Ted McDorman, Cathy Roheim Wessell, Daniel Pauly and Vlad Kaczynski engaged in a panel discussion highlighting key issues and approaches to understanding the impact of global fish trade on food security.

Presentations from the workshop can be downloaded from: www.fisheries.ubc.ca/ru/feru/events/nnafe_summary.htm

And in this corner...

by Dale Marsden, UBC Fisheries Centre

One of the high points of the NAAFE Forum for many attendees was a debate between Jim Wilen and Daniel Pauly. The debaters were asked to discuss the theme of the Forum, "ensuring fisheries benefits to all generations", from the perspective of their respective disciplines. Representing economics was Jim Wilen, a Professor in the Department of Agricultural and Resource Economics at the University of California, Davis. Daniel Pauly, the Director of the UBC Fisheries Centre, represented the perspective of biology and ecology. Susan Hanna, from Oregon State University, served as moderator. The debate began with a 30-minute presentation by each of the two participants, with each giving their perspective on some of the problems with fisheries and how to solve these problems. Each participant was then asked to answer a number of questions that had been prepared in advance by the other debater and, in some cases, the debaters had some back-and-forth discussion of their answers to these questions. The range of the discussion was remarkably broad, ranging from "fishing down marine food webs" and jellyfish fisheries in Newfoundland, through monkeys and their perceptions of fairness, to the pros and cons of advocacy by social and natural scientists. The conversation highlighted some differences between the two disciplines, but many observers were surprised by the amount of common ground that was uncovered. Unlike some debates, this one was not at all like the boxing match alluded to in the headline; rather, it was an encouraging indication of how much fisheries economists and biologists have in common, and how the tools available in each discipline can complement and strengthen each other, rather than competing or working at cross-purposes. A recording of the debate is available at <http://oregonstate.edu/Dept/IIFET/NAAFE/2005debate recordings.html>.



Jim Wilen (left) and Daniel Pauly during the debate, Photos by Ann Shriver.

NAAFE Forum highlights

Tribute to Tony Scott

by Gordon Munro, UBC Fisheries Centre and Department of Economics

On behalf of NAAFE, I paid tribute to Tony Scott on the 50th anniversary of the publication of his famous article, "The Fishery: The Objectives of Sole Ownership", which appeared in the April 1955 issue of the *Journal of Political Economy*. Tony has been my professional colleague for over 40 years. Before that, Tony was one of my undergraduate professors. Tony's article was the first to show that the economics of fisheries management necessarily requires the application of the economist's theories of capital and investment. Fishery resources should be seen as assets to be managed for the benefit of this, and of future, generations. While present day fisheries economists accept Tony's point without question, the article, when it appeared in 1955, was well ahead of its time. Tony's article did not arise out of a vacuum. The year 2005 not only marks the 50th anniversary of Tony's JPE article, it marks, as well, the 50th anniversary of the publication of Tony's book, *Natural Resources: The Economics of Conservation*. The central theme in Tony's book is that natural resource economics, in all of its applications, renewable and non-renewable, is first and foremost an application of the theories of capital and investment. Tony's book was the first to place the whole of natural resource economics on a clear capital-theoretic foundation. NAAFE should, therefore, honour Tony, not just for his pioneering work in the economics of fisheries, but also for his pioneering work in natural resource economics as a whole.

Post-Forum workshop

by Chris Anderson, University of Rhode Island

A diverse group of 15 faculty and students, representatives of government and NGOs, Americans, Canadians and Europeans met with the author for the post-Forum workshop on Using Experimental Methods in Fisheries Economics. In economic experiments, human subjects play the role of the economic agents (e.g., fishermen, processors, council members) interacting under the rules being studied, and those who operate more profitably are paid more for participating. This differential payment aligns the subjects' incentives with that of the agents being modeled, supporting external validity. After a demonstration experiment, in which workshop participants were traders in a market for a fictitious commodity, the workshop included a discussion of the experimental design process and how and why laboratory economic experiments can inform researchers about the principles, which govern the broader world. In addition to traditional uses such as testing theoretical models and comparing and refining economic institutions, experiments can be used to demonstrate economic principles to stakeholders and policy makers; and for hands-on experiences under alternative management regimes. The final hour of the workshop was spent identifying research questions which may be best addressed experimentally and yielded a number of good ideas for research and outreach projects.

Post-Forum tour to Steveston

by Louise Teh, UBC Fisheries Centre

On Friday May 27, twenty-five Forum delegates boarded a coach to Steveston, a historical and picturesque fishing village, approximately 45 minutes from UBC. Our first stop was the Gulf of Georgia Cannery National Historic Site, where we were met by Mark Sakai, manager of the Cannery and Ed Zyblut of the Gulf of Georgia Historic Site Society. The Cannery was built in 1894 and is one of British Columbia's few remaining intact canneries. We split into two groups for a guided tour of the cannery museum, which took us through exhibits detailing the history of the West Coast fishing industry, including a salmon canning line. There was also a special exhibition documenting the history of the Japanese fishing community in B.C. After the guided tour, we headed to the docks outside the Cannery to enjoy the sunshine. Mark and Ed filled us in with more information about British Columbia's fishing history and the West Coast fishing industry. Then it was time to head for our second destination, the Britannia Heritage Shipyard, situated along the Steveston Channel, which was once a cannery before being converted into a shipyard. Active ship restoration still takes place here. We took a leisurely stroll by the channel bank and into one of the shipyards, where ship building tools and artifacts were on display, before boarding the bus and heading back to UBC.

Conflicts between agriculture and salmon in the eastern Fraser Valley

by Marvin L. Rosenau , UBC Fisheries Centre

The lower Fraser River and its many tributaries, from Hope to Sumas in the eastern Fraser Valley of British Columbia play a key role in sustaining Fraser River salmon stocks, which are amongst the greatest in the world. This is in addition to providing habitat for other important fisheries and non-fish aquatic species. Yet, for more than 100 years extensive agricultural operations in this area have resulted in substantial changes to the area's waterways through the modification of streams, wetlands and riparian areas. This in turn has substantially reduced the habitat capacity of these aquatic ecosystems. These are the authors' views in the recently released Pacific Fisheries Resource Conservation Council Background Paper entitled "Conflicts between agriculture and salmon in the eastern Fraser Valley" (Rosenau and Angelo 2005).

Lowland stream floodplains are known to be associated with some of the richest freshwater fisheries on earth (Welcomme 1979; 1985). However, conversion of wetland and riparian riverine ecosystems into agricultural production is a common historical theme throughout the world (Sedeon 1984). Furthermore, while the transformation of many eastern Fraser Valley lowland areas into agricultural landscapes occurred long before comprehensive ecosystem inventories and assessments were undertaken, current evidence suggests that pre-settlement aquatic conditions of the eastern Fraser Valley were extraordinary. Examples of large-scale agriculture-related alterations include major diking and diversion projects along the Chilliwack, Fraser and Harrison rivers and their floodplains, which resulted in major losses of side-channel and wetland habitats; the draining of Sumas Lake, which caused one of the

more significant freshwater river/wetland ecosystem losses in British Columbia's history; and the channelization of numerous small, but highly-productive, streams flowing across the floodplains of the larger streams. This was accompanied by extensive losses of wetlands, native vegetation and riparian cover (Figure 1) (Orchard 1983).

In recent years, intensification of agricultural operations in British Columbia has resulted in further hydrological changes to the riparian areas of these watercourses which has had negative effects to aquatic ecosystems. Increasingly riparian cover continues to be lost due to intensification (Figure 1). Also, in order to bring new land into agricultural production, farmers still persist in clearing native lowland vegetation from floodplain areas immediately outside the dike infrastructure in the eastern Fraser Valley. Many of these areas are ephemerally flooded and either had, or retain, important aquatic and fisheries values.

Another issue associated with intensification of farming which continues to affect fish habitats in the eastern Fraser Valley relates to the maintenance of channelized-streams and constructed ditches. This includes the regular cleaning of sediments and nuisance vegetation to facilitate their draining. Local and senior government

agencies have made strides in dealing with this issue and their cooperative approach is one of the more positive aspects of fish/agriculture interactions in the eastern Fraser Valley, although still not all drainage channels are treated appropriately. For comparison, some of the communities in western Europe (e.g., Denmark) are also utilizing softer approaches to drainage management to restore their stream ecosystems impacted by agricultural activities (Madsen 1995). Nevertheless, for the eastern Fraser Valley less success has been achieved in protecting adequate riparian buffers between the cultivated portions of fields and the stream perimeters and much work remains to be done to resolve this issue.

Finally, the most significant current agricultural impact to aquatic ecosystems in the eastern Fraser Valley is the increasing development of lowland farmlands outside dikes. These areas include riparian or ephemerally flooded habitats, and they are being developed into more intensified cultivation and/or non-

Continued on page 7 - Salmon

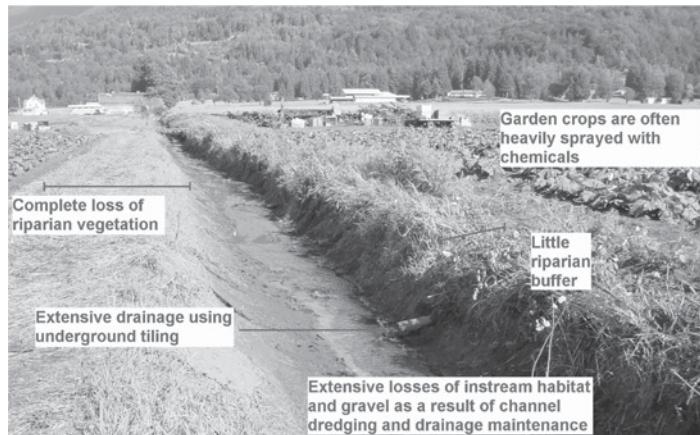


Figure 1. Highly productive eastern Fraser Valley salmonid stream after channelization, dredging, draining of associated wetlands, and removal of riparian cover by agriculture.

Salmon - Continued from page 6

agricultural, high-impact activities. The latter activities include changes in land-use designation from agricultural to industrial/commercial, urban development, or resource extraction. The sequential development of these remnant eastern Fraser Valley lowland and riparian landscapes—from natural-floodplain ecosystems to agriculture, and then from agriculture to more intensively developed landscapes—constitutes one of the greatest threats to these remaining aquatic values in the eastern Fraser Valley.

What remains of the area's fisheries values, and its lowland ecosystems, will be jeopardized and eventually lost if we fail to conserve the few remaining sensitive aquatic lands adjacent to the lower Fraser River and the riparian and instream habitats of its key tributaries including those influenced by agriculture. Thus, we must implement appropriate drainage maintenance practices, recognize and protect the key remaining riparian and lowland areas (e.g., land purchases, covenants) and embrace appropriate community planning and land-use practices if these ecosystems are to be passed on to future generations.

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Profile: Maxwell J. Dunbar (1914 -1995)

by Konstantinos Stergiou

Aristotle University of Thessaloniki

The last issue of this newsletter featured an article about the link between global distribution of capelin, FishBase and Professor Maxwell J. Dunbar (FishBytes 11-2, p.4). Readers may be interested to learn more about Professor Dunbar, one of Canada's most respected oceanographers. The information provided here is reproduced from various sources (mainly from 1, but also from 2-4).

Maxwell J. Dunbar was born in 1914 in Edinburgh, Scotland, and died in 1995 in Montreal. He studied at Oxford University (1933-1937, BA and MA), Yale University (1937-1938, Henry Fellowship) and McGill University (PhD, 1941). In 1946 he joined McGill University and, in 1963, organised the Marine Sciences Center at McGill, which later evolved into the Institute of Oceanography. In 1982, he became an Emeritus Professor and in 1988 became a member of the Climate Research Group (Department of Atmospheric and Oceanic Sciences). He was one of Canada's most respected oceanographers and received many honours during his career. He was a pioneer in Arctic oceanography and participated in (and led) many expeditions in Glacier Bay, Ungava Bay, Hudson Bay and Greenland for which he had a 'keen personal interest'. He was elected to the Royal Society of Canada in 1954 and appointed an officer of the Order of Canada in 1990.



Professor Maxwell J. Dunbar in 1984. Photo by H.I. Brownman

Maxwell Dunbar supervised some 75 graduate students and authored and co-authored many published and unpublished articles, as well as the influential monographs *Eastern Arctic Waters*⁵ and *Ecological Development in Polar Regions: A Study in Evolution*⁶. His autobiography⁷ was published just before he passed away, in 1995.

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News and Notes

Congratulations

Dr Maria Lourdes (Deng) Palomares has been awarded recognition as one of the "Outstanding Filipino Women in Fisheries and Aquatic Resources Research, Development and Industry" by the Philippine Council for Aquatic and Marine Research and Development (www.pcamrd.dost.gov.ph/index.php). The award aims to: (i) Give due recognition to the role of women in Fisheries and Aquatic Resources Research, Development and Industry (FARRDI); and (ii) Provide encouragement to other women in FARRDI by highlighting the achievements and contributions of women role models. Please join us in congratulating Deng on her award.

Dr Bob Lessard successfully defended his PhD thesis, *Conservation of woodland caribou (*Rangifer tarandus caribou*) in west-central Alberta: a simulation analysis of multi-species predator-prey systems* on June 17, 2005. Bob used spatial simulation models to explore interactions among woodland caribou, moose, wolves and their landscape, to investigate options for conserving declining caribou populations. Bob will be moving to Seattle in September, to take up a post-doctoral fellowship with Dr Ray Hilborn at the University of Washington. There he will be researching the population dynamics of Alaskan salmon.

Vasiliki Karpouzi successfully defended her Master's thesis, *Modelling and mapping trophic overlap between fisheries and the world's seabirds* on May 10, 2005. Vaso compiled data on the biology, ecology and demographic characteristics of the world's seabirds, which she used to map the foraging distribution of seabirds and to estimate spatially-explicit food consumption rates and trophic overlap between fisheries and seabirds. In the immediate future, Vaso will continue working towards improvement of the seabirds database in collaboration with the *Sea Around Us project*.

After recently being awarded her PhD, former *Project Seahorse* graduate student, **Dr Janelle Curtis**, has been

awarded a postdoctoral fellowship by the National Sciences and Engineering Research Council of Canada. Janelle will hold her fellowship at UBC's Centre for Applied Conservation Research, where her research will help define identification of critical habitat for aquatic species at risk.

Also from *Project Seahorse*, **Natalie Ban**, who is researching selection methods for Marine Protected Areas on Canada's Pacific Coast, has received grants from Canada's Mountain Equipment Co-operative and from Canada's Ocean Management Research Network.

Welcome

Mike Hawkshaw joins us from the University of Victoria, where he obtained a Bachelor's Degree in Mechanical Engineering. He was accepted to the Department of Zoology as a graduate student in May and immediately started working on his Masters degree with Carl Walters. He is studying juvenile mortality of Northern Pikeminnow at a series of Lakes on the Bonaparte Plateau north of Kamloops.

Brett van Poorten received his MSc from the University of Calgary, where he studied the effects of recreational angling in Jasper National Park. Following this, he worked for two years as a consultant in Southern Alberta, BC and the Northwest Territories. Brett has just started a PhD with Carl Walters. He is investigating the interactions of pike minnow and rainbow trout in lakes north of Kamloops BC. His main research involves validation of the compensation / depensation hypothesis proposed by Walters and Kitchell.

And in other news

Several research groups in the Fisheries Centre publish their own news online: see *Sea Around Us* project (www.searroundus.org/NewsletterF.htm); Marine Mammal Research Group (www.marinemammal.org); and *Project Seahorse* (www.projectseahorse.org). See also www.fisheries.ubc.ca for more news and events.

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