

# FISHBYTES

THE NEWSLETTER OF THE FISHERIES CENTRE – UNIVERSITY OF BRITISH COLUMBIA  
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## Seven months in Indonesia: seeking a more balanced view of fisheries management

by Eny A. Buchary

It was almost midnight on July 5<sup>th</sup>, 2004 and I was still nervously packing my suitcases for my then-upcoming 7-month PhD field trip to Indonesia while the taxi was waiting outside to take me to the airport. My excitement was mixed with acute apprehension, although, in retrospect, I shouldn't have worried so much.

My fieldwork took place from July 2004 through February 2005 in two



Left: FGD on board "Sumber Jaya" – a 51-crew purse seiner - with several of her crew members. This was just before an overnight fishing trip for sardines in Bali Strait. Right: Identifying common fish encountered and their corresponding names using fish posters in an in-depth interview. This interview is with a small-scale gill-netter (the older man) who lives with his family on an island in Komodo National Park.

volatile, bringing thousands of tonnes of sardines each day during the El Niño years, but very few in other years. The volatility of the fishery

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distinct fishing areas that are shared by various fishing communities scattered throughout four main islands in Indonesia.

The first study area is the Bali Strait, an area of about 3,126 km<sup>2</sup> located between Java and Bali islands. The Strait is known to be an upwelling area fished mainly by purse seine fleets that target sardines. The fishery is very

is an issue in this area and has caused interesting dynamics within the communities over the years.

The second area, within and surrounding the beautiful Komodo National Park (famous for its giant lizards, i.e., the dragons), is located between Sumbawa and Flores islands. The area is about 4,316 km<sup>2</sup> and is plied by various types of small-scale fishing boats that employ various gears. The main social issues in this area revolve around the establishment of the park and its management plans, which many community members consider as limiting to their livelihood.

The aim of my research is to seek viable policy options for responsible use of marine resources in both study areas. In doing so, I am developing whole ecosystem models, using information from multiple sources, including local knowledge.

My field methodology is comprised of in-depth interviews, focus group discussions (FGD) and direct observations. I employed a snowball-sampling approach to recruit about 200 respondents, stratified based on geographic, demographic and fishing sector characteristics. The in-depth

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interviews were intense. Each session ran between 2-3 hours. In a few cases when respondents were willing to share more stories, we could spend up to a total of 4 hours. I didn't expect so many respondents to so willingly donate so much of their time. A few of them even donated their personal fishing log-books!

The FGD sessions were less intense but were rather difficult at first because information was derived from up to 4-5 participants all at once.

Direct observation turned out to be my favourite method of obtaining information, as it allowed me to ob-

serve and 'listen' more freely and often brought more insights and understanding.

After hundreds of interview hours, thousands of kilometers travelled – sometimes over rough roads on the back of a motor cycle – and living with fishing communities for the whole 7 months, I faced the hard reality of how little human dimensions are considered in the fisheries management schemes of the areas.

Subject to funding, I am planning to go back to Indonesia to present my research results in stakeholder workshops. I cannot expect too much, but I hope that this can help to forge feelings

of ownership of the resources and genuine social partnerships amongst all resource users.

**Acknowledgements**

*I owe millions of thanks to countless people and organizations. However, my two dedicated field assistants, Abdul Muis and Uma Khumairoh, deserve a mention here. Without their help, this fieldwork would not have been possible. This fieldwork was done with the aid of a Doctoral Research Award Grant from the International Development Research Centre (IDRC: [www.idrc.ca](http://www.idrc.ca)), Ottawa, Canada.*



## Ballast water exemption zone: a need for concern?

*by Laura F. White, MSc Candidate, UBC Dept. Zoology*

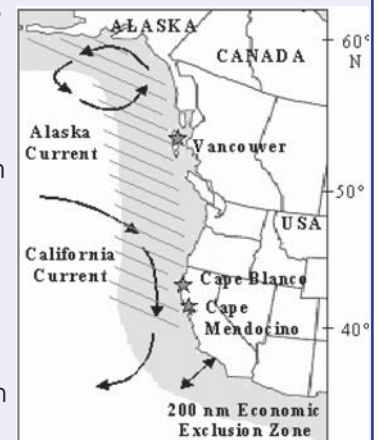
*This article represents the results of Laura's research into ballast water regulations in British Columbia, undertaken as part of her studies in Amanda Vincent's Fisheries Centre course: Science, Society and Law in Aquatic Policy.*

Vancouver's ballast water policy may promote introductions of potentially harmful, exotic species. Numbers of exotic species arriving in coastal waters of Western Canada have dramatically increased over recent years and international shipping has been suggested as a major vector for introduction. Shipping transfers between 3 to 5 billion tons of ballast internationally each year and more than 3000 species may be in motion around the world on any one day, in the ballast of ocean-going vessels.

In 1997, the Vancouver Port Authority developed progressive mandatory Standing Orders to reduce the risk of exotic species arriving into Vancouver's waters. The contemporary solution used to minimize the risk of moving non-indigenous species around the world's ocean in ballast water is mid-ocean exchange. In this procedure, if safety permits, the bulk of coastal water in a ship's ballast tanks is replaced with water from mid-ocean. Oceanic organisms contained in the replaced ballast water are in theory intolerant of environmental conditions when released in a foreign port during loading and unloading. For short coastal voyages, coastal exchange is required 50 nm from shores. Within Vancouver's policy, however, an exemption zone extends from Cape Blanco, US (amended from Cape Mendocino in 1999), north to Alaska. Ballast taken aboard from this region is exempt from exchange (see figure). The exemption zone is based on ocean currents: plankton communities north of Cape Mendocino are considered contiguous with those in BC waters because of northward flowing currents. Coastal exchange within this region is therefore not deemed worthwhile by the Vancouver Port Authority. Also, Oregon's coastal shelf extends further than 50 nm in places, rendering coastal exchange unpractical in places.

Concerns have been raised over the exemption zone: there is still a possibly significant risk of introducing a variety of exotic species into BC from exempt vessels, which defies the purpose of the policy. Rationale for the exemption zone fails to account for situations where estuarine or freshwater organisms may have been taken on in river ports such as Portland, OR, and released into freshwater ports such as New Westminster, BC. It also does not consider the possibility of exotics being taken aboard from possible biodiversity 'hot spots' north of Cape Mendocino (e.g., Coos Bay, OR; Grays Harbour, WA) that contain species not found further north.

The policy was designed to reduce risk of introducing exotic species. The exemption zone challenges this purpose. Requiring all vessels to exchange ballast as they travel up the US coast where practical, would not be as effective as deep water exchange, but would ensure ballast water and all associated biota would be oceanic and not estuarine by the time vessels reached British Columbia.



*Map of exemption zone (hatched) extending from Cape Blanco, California to Alaskan waters.*

# Stinky Steller saga

by Andrea Coombs and Aerin Jacob

“Mr Stinky” appeared over the Easter long weekend at a rocky beach in Willow Point near Campbell River. This emaciated, pungent Steller sea lion bull was a mere shadow of his former self and was in obvious distress. Local residents were also distressed by what was unfolding in front of their homes and contacted the UBC Marine Mammal Research Unit (MMRU) for help.

We arrived in Campbell River in the middle of a storm with howling winds and a driving rain. Our assessment was that the bull would unlikely survive the night and the incoming tide. We therefore decided to stay and bring his body home to Vancouver for necropsy the following morning. Knowing what the sea lion was suffering from would add to a growing database of health assessment of marine mammals in British Columbia.

When morning broke, the animal was still there and still alive, but having considerable difficulty breathing. We worked closely with the Coast Guard, the Department of Fisheries and Oceans (DFO) and a consulting veterinarian who decided the most humane course of action was to euthanize the suffering animal.

The biggest challenge we now faced was how to move a 600-pound animal from the beach and into our truck. Fortunately for us Campbell River has a very friendly road worker with a front-end loader. With the assistance of local volunteers, we wrapped the Steller bull in a tarpaulin and two body bags (one wasn't big enough!) and rolled him into the bucket of the front-end loader. From there, it was a short drive down the beach to our truck. The driver—our hero—saved us hours of blood, sweat and tears!

We kept the Steller on ice at UBC for 5 days before sending him for necropsy at the BC Ministry of Agriculture, Food and Fisheries (BC MAFF) in Abbotsford. Several tests are still

pending. However initial necropsy results indicated that he had suffered from a number of ailments including pneumonia and an abscess in the jaw.

Following the necropsy, it was decided that Mr Stinky would be a good candidate to join the Stinky Minke in the atrium of the new Aquatic Ecosystems Research Laboratory (see *FishBytes* 11-1). The bones of both the sea lion and the whale are now suspended in seawater for a 6-month washing cycle to remove remaining tissue.

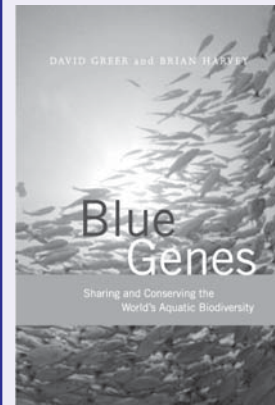
It is not clear what might come next — perhaps porpoises and white-sided dolphins? Stay tuned for more adventures in the ‘Stinky’ series!

*We would particularly like to thank and acknowledge the assistance of Stephen Thompson (DFO), Dr Malcolm McAdie, the residents of Willow Point in Campbell River (particularly Alison Graham), Kathleen Embree and Lorraine Noel from the SPCA and Dr Stephen Raverly (BC MAFF) for conducting the necropsy. Other flensing volunteers included Lindsay Wilson and Erin Carruthers.*

**Editor's apology:** *In the last issue of FishBytes, the acknowledgements for the article “Stinky minke” were omitted. The following people assisted with the group's previous flensing adventures: Dr Stephen Raverly (BC MAFF), Jim Borrowman (Stubbs Island Whale Watching) and Rod MacVicar (MMRU). Other volunteers included: Gordon Hastie, Lara Cusack, Chris Pasztor, Wendy Thompson and Bill Herbert.*



## New book: Blue Genes



Genetic sciences have produced a ‘blue revolution’ in the way we use aquatic biodiversity. By 2020 the world will be eating more farmed than

wild fish, marine bacteria may yield the cure for cancer and deep-sea bacteria may be exploited to consume oil spills. Science is moving ahead at a staggering speed and the demand for genetic resources is growing rapidly - yet governance and policy lag far behind. This book, by David Greer and Brian Harvey, is the first to look at the issues of ownership, governance and trade in aquatic genetic resources. *Blue Genes* describes the growing demand for aquatic genetic resources and the desperate need to fill the policy vacuum for the management and conservation of aquatic biodiversity. The book pays special attention to the rights of indigenous and local communities and their role in managing and conserving aquatic biodiversity. The book concludes with policy recommendations tailored to aquatic resources and uses six case studies to illustrate key issues.

*Blue Genes* can be ordered directly from: [www.earthscan.co.uk/](http://www.earthscan.co.uk/)



Left: Sick Steller sea lion bull in Campbell River; Right: Yay for the front-end loader!  
Photos by Aerin Jacob

# Maxwell Dunbar, capelin, FishBase and the 5<sup>th</sup> FBC: the circle is complete

by Konstantinos Stergiou, Aristotle University of Thessaloniki

At the 5<sup>th</sup> meeting of the FishBase Consortium (FBC) in Paris (1-3 September 2004<sup>1</sup>), I had to make a short presentation - entitled *FishBase and Aristotle University* - in support of Aristotle University's candidacy to join the FBC. Its preparation brought to my mind some sweet memories from the 1980s, which are, *a posteriori*, related to FishBase. In 1981, I was admitted for the M.Sc. program at the Institute of Oceanography, McGill University. In early September 1981, I met the late Maxwell J. Dunbar, who became my advisor. During our very first meeting, 'Max' asked me to suggest a topic for my thesis. I remember being embarrassed while answering, "I never thought about that". He immediately replied, "What about capelin and climate change in the North Atlantic?" I agreed. Thus, I began spending many hours daily in the excellent library of McGill University collecting everything that was written on the distribution, biology, ecology, migration and fisheries of capelin (*Mallotus villosus*). Although I published two papers from my MSc thesis<sup>2-3</sup>, the chapter on the worldwide distribution of capelin in relation to climate was never published. In fact, I did write a paper from this chapter and submitted it to the journal *Arctic*. The replies from the reviewers were polite and positive, including very useful comments and suggestions. However, one reviewer kindly suggested I include information from museum collections. This comment, though justifiable, was very restrictive and thus decided the fate of the ms. You see, by the time that I received these reviews, I had already returned to Greece and joined the Greek army for my required service. Thus, I had no access to such data or sources and, as a result, the ms was never published. Unfortunately, FishBase was not available in the late 1980s and, by the time it was a mature product, I had already forgotten all about this capelin paper. Thus, I never checked FishBase for capelin, despite the fact that the ms was, and still is, on my desk, right on top of my to-do pile. Yet, when I started preparing the presentation for the 5<sup>th</sup> FBC meeting, for some inexplicable reason, I immediately involved capelin in the introduction. In

doing so, I compared the literature-derived information on capelin distribution from my thesis with the distributional map provided by FishBase (Fig. 1), which is largely based on museum collections. The comparison showed that the worldwide distribution of capelin as revealed from these two sources is similar. There are very few differences, the most important being that the FishBase map does not capture the expansion of capelin north of Disko Bay, West Greenland, which took place in the 1920s and 1930s (arriving as far north as Thule in 1935-1936<sup>4-6</sup>, with source 5 being Max's favourite and, thus, the first paper I ever read on both climate change and capelin). This demonstrates that the incorporation of museum collections would not have altered the original picture described in my unpublished paper. Thus, the circle, which started with 'Max' in September 1981, will be soon complete, when this piece of information is incorporated into FishBase.

*This short communication is dedicated to the memory of Professor Maxwell J. Dunbar<sup>8</sup>, who would also have been very pleased, as Darwin (see 7), with the 'Darwinian' nature of FishBase.*



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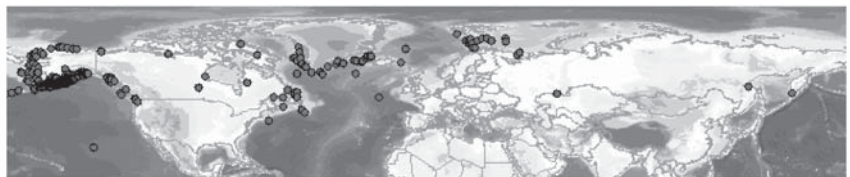


Fig. 1. FishBase map of the world distribution of capelin (from [www.fishbase.org](http://www.fishbase.org)).

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