

## “Sea-ing Around Us” The ‘Pew Project’ is Underway

**By Nancy Baron**

**D**aniel Pauly wants to save the world – or at least the oceans. Pauly, Tony Pitcher and their UBC Fisheries Centre team were recently granted \$3 million Canadian (about \$2 million US) by the Pew Charitable Trusts to reel in the facts on fishing’s ecological impacts.

That Pew, a powerful US foundation and a leader in marine conservation, has taken this gamble on the UBC Fisheries Centre is a big deal. When other scientists reviewed Pauly’s proposal to try to unlock the besieged state of world fisheries, most said it couldn’t be done. Nevertheless Pew has stepped forward to support the first phase of “The Sea Around Us” project, and as Pauly is the first to acknowledge, “my head is on the block.”

The reason Pew is betting on Pauly is because, despite what sceptics may think, he has a track record of taking on gargantuan tasks against enormous resistance. Pauly is famous

for his ability to look at mountains of data and to see things that no-one else has seen before. Feeding at the very top of the food chain of scientists, Pauly devours and synthesizes other people’s research.

Pauly’s own life has convinced him of the validity of fighting against the odds. A war baby, the son of a black man from Arkansas and a French mother, Pauly grew up poor.

“Statistically I was doomed,” he grins. He would have never made it to university but for a scholarship from a church in Germany where he had worked helping the mentally handicapped. But once he started, he took off, surging through undergrad and masters degrees in four years. Then concerned about issues of poverty and overfishing, he started working in tropical countries, inventing simple methods for stock assessments so communities could manage their own fisheries.

In an interview in his tiny office in the UBC Fisheries Centre, he whirls from desk to computer in a pair of fish slippers. Prone to jumping up and illustrating his points on a white board by his desk, he answers the incessantly ringing phone switching from French to German to Spanish as he talks to colleagues from around the world.

Pauly seems not the least bit daunted by the enormity of the task he has taken on. “Right now all we do is say, ‘save the sea,’” he says. “Well big deal. How do you go about it? You need the specifics.” Still, he’s the first to admit, “My imagination has always been ahead of my ability to implement things rigorously. I’m not a number cruncher.” His approach is to develop a team and to create an environment in which the people and project can thrive and then he works with them to fit the pieces together. “It’s not so much that the track record convinces other people, it’s the track record that

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*The Sea Around Us Project Newsletter*  
*Issue 1 – November/December 1999*

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convinces yourself you can do it. Otherwise you wouldn't dare... Yes, its huge. But it's like the pyramids, it's one rock at time."

In 1998 Pauly sent shock waves around the world when he and a team of colleagues published proof in the prestigious journal *Science*, that globally, we are "fishing down the food web." Taking 45 years worth of the United Nations annual global catch statistics they showed where overfishing is taking us. Commercial fisheries exhaust big fish-eating fish first, then move to lower plankton-eating fish and invertebrates. This prevents the top fish from ever recovering because we begin competing with them for their food. So having systematically wiped out the large fish at the top of the food web, "we're now eating bait," says Pauly, "and we're headed for jellyfish."

Serial depletion of species is grinding marine ecosystems towards collapse. Pauly is critical of the government's

new and highly subsidized 'diversification programs', a euphemism for trying to find something else once you've exhausted the previous fishery.

**M**any people including fisheries scientists, managers and politicians are in denial about what's happening in the oceans, and so Pauly, Pitcher and their UBC team, in partnership with a global network of scientists want to show what's going on. This three million dollar grant over two years is only the seed money for what – if they succeed – will be an on-going initiative to provide the research needed to transform fisheries policies and management practices around the world. The first step is to study the North Atlantic fishery (eastern Canada, the US and Europe) which, explains Pauly, "is the biggest challenge because that is where fisheries science emerged. Everything is more stuck there. If we can convince the North Atlantic world our vision is legitimate, then we will have taken a big step because in other parts of the world there will be less resistance."

The team's analysis of all the biological, economic, and social data related to fisheries over the past 50 years will show how much the oceans *have* changed and provide an irrefutable case for the profound changes necessary to current fisheries policies and practices. Because as Tony Pitcher says, "When it comes to oceans, sustainability is the wrong goal because you are only sustaining the present misery."

These scientists believe we

must allow the oceans to rebuild to their historic levels of productivity. Pauly reckons only one-tenth or less of the fish in the oceans still survive, but the good news is, the abundant past could also be our future. The energy to rebuild the web of life is still being regenerated. On land, once you take away the habitat and build on it, the wildlife are often gone forever. But in the oceans the habitat is still there, it's just that the fish aren't. Nature can and will replenish the wealth of the seas – if we give her half a chance.

**N**ow some of the brightest and biggest thinkers on the global scene are converging at the UBC Fisheries Centre to pull in the pieces. Besides Pauly and Pitcher, the team includes Villy Christensen and Carl Walters, who along with Pauly have designed a computer program called Ecopath which roughly simulates how marine ecosystems work. Like an accounting system that uses energy as its currency, Ecopath tells you how much fish you can extract from an ecosystem based on its productivity while taking into account the interactions between various animals within the system. It serves as a test to see if the pieces add up.

Reg Watson is the team's chief detective uncovering unaccounted fisheries catches such as bycatch and the subsistence fisheries. In many countries, the catch of boats below 10 metres is not registered. Nor are sports fisheries usually included. "Now here I expect a stunning effect—we will surprise people with these numbers," says

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The *Sea Around Us* project newsletter is published by the Fisheries Centre at the University of British Columbia. Included with the Fisheries Centre's newsletter *FishBytes*, six issues of this newsletter are published annually. Subscriptions are free of charge.

Our mailing address is: UBC Fisheries Centre, 2204 Main Mall, Vancouver, British Columbia, Canada, V6T 1Z4. Our fax number is (604) 822-8934, and our email address is [SeaNotes@fisheries.com](mailto:SeaNotes@fisheries.com). All queries (including reprint requests), subscription requests, and address changes should be addressed to Melanie Power, *Sea Around Us* Newsletter Editor.

The Sea Around Us website may be found at [www.searoundus.org](http://www.searoundus.org), and contains up-to-date information on the project.

## Who's Who in the Sea Around Us

**Staff at the Fisheries Centre:**

*Project Leader* – Daniel Pauly

*Chair, Project Steering  
Committee* – Tony Pitcher

*(Principal) Research Associate* –  
Villy Christensen

*(Senior) Research Associate* –  
Reg Watson

*Project Co-ordinator* – Nigel  
Haggan

*Post-Doctoral Fellows* – Sylvie  
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Zeller

*Research Associate* – Rashid  
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*Webmaster* – Felimon  
(Nonong) Gayanilo

*Newsletter Editor* – Melanie  
Power

*Graduate Student Assistants* –  
Eny Buchary, Kristin Kaschner,  
Amy Poon

*Administrative Assistant* –  
Maureen White

**Collaborators from outside of  
the Fisheries Centre:**

Jackie Alder  
Nancy Baron  
Alida Bundy  
Rattana (Ying) Chuenpagdee  
Paul Fanning  
Rainer Froese  
Paul Hart  
Steve Mackinson  
Jean-Jacques Maguire  
Gordon Munro  
Leif Nøttestad  
Bill Parker  
Hreidar Valtýsson

## Welcome to the Sea Around Us Project!

### *Notes from the Editor*

Welcome to the first issue of the new Sea Around Us project newsletter! As many *FishBytes* readers already know, this new Fisheries Centre partnership with Philadelphia's Pew Charitable Trusts was formally announced in July of this year. (See *FishBytes* vol. 5 (4), July/August 1999.) Since then, the always bustling Fisheries Centre has been caught up in an even greater flurry of excitement. Renovations on our home, Hut B-8, have been planned, and renovations in one of the neighbouring huts have begun. Blueprints decorate the Fisheries Centre's main office, and workers sporting hardhats have been spotted in the hallways. Even the exterior of B-8 is getting painted – although the onset of Vancouver's rainy season has temporarily halted that effort.

All of this activity so as to accommodate the many researchers flocking to the Fisheries Centre to become part of this project. In fact, people are being recruited from all corners of the globe to serve in various capacities on the project.

And of course, to broadcast the efforts of the project team and developments within the project, we are launching this brand-new newsletter. Included with *FishBytes*, this serial will be distributed every second month for a total of six issues per year. Unlike *FishBytes*, with its broad mandate and focus, this particular newsletter will centre entirely on this project and all that it entails.

In this first issue, we highlight a modified version of an article which first appeared in the *Vancouver Sun*, written by freelance journalist Nancy Baron. Through this particular article, you will be introduced to some of the members of the project team and given an overview of the Sea Around Us project. Just as this article focuses on Daniel, future issues of this newsletter will highlight other team members and the work that they are doing.

But not wanting to leave anyone out, in this issue we have included a reference list of who's who in the team. More information on the Sea Around Us project and team can be found on the projects website, [www.searoundus.org](http://www.searoundus.org). Be sure to check the site regularly for up-to-date information.

So, welcome. And thank-you for joining us as we work to save the world's fisheries!

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Daniel Pauly, reflecting on the state of the world's fisheries.

Pauly.

Tony Pitcher and Dave Preikshot and have designed RAPFISH, a multidisciplinary rapid evaluation method for the status of fisheries and Rashid Sumaila,

an economist, has designed a new economic methodology that will allow people to evaluate the ecological, economic, social and cultural benefits of rebuilding. Pauly's role is to put it all together and to bring forward the results and recommendations.

These multiple layers of data will be analysed and cross validated to show how overfishing can be controlled and the damage reversed. The team will post all their data and analysis on the project's website so that the path to their conclusions is clear.

One of the major problems in fisheries management is the rift between fisheries scientists and conservation biologists. Fisheries scientists tend to be aligned with government and industry. Conservation biologists tend to sit "outside the tent" with the environmental NGOs. Pauly is trying to create a new system for data collection to integrate the two groups and encourage their collaboration on solving problems. "The two groups may be working on similar things but they don't talk to each other, they don't read each other's work and worst of all, they don't respect each other," explains Pauly. The problem of two groups of scientists

generating evidence for different audiences is part of what this project is meant to overcome.

By the end of the first two years Pauly hopes to have succeeded in convincing colleagues, managers and policy makers that there is legitimacy in the approach of looking at the past to set fisheries goals for the future. "What we want to do is calculate the benefits that go to the different players and identify for the fisheries of the North Atlantic – not pie in the sky, but practical solutions that are good for the fish, good for the ecosystem and good for the fishery itself."

For example, the scientists are using horsepower as the unit of efficiency to contrast the costs and benefits of different fisheries. Small scale local fishers consume less fuel oil, less fish, destroy less habitat, reduce bycatch and generate more benefits to more people, both locally and afar. The alternative – the industrial fishers – travel from place to place, mess up the fishing ground through destructive practices like trawling, throw away the bycatch, and employ seasonal workers who have no connection to the places where they fish. Industrial fishers tend to be heavily subsidized and ignore environmental destruction. "It's an old habit, so we tolerate it," explains Pauly, "Similar to perhaps cigarettes. But it's crazy."

Pauly's vision is to largely phase out the large scale fisheries and to freeze the small scale fisheries to alleviate enough pressure that the stocks could rebuild. "Look at the cod. The small scale

fisheries were catching 200,000 tons a year, while for 10 years the industrial fisheries got up to 800,000. How many years do you need of total depletion to undo that so-called gain?" Up to 1998 the Atlantic cod collapse has cost at least \$4.5 billion and untold wretchedness. "You could have continued with just the small scale fisheries and overall the gains would have been much bigger," says Pauly. "So the hard-nosed numbers, the realism is not with the subsidy driven large scale fishery that leads to overfishing. Phasing out the heavily subsidised industrial fisheries will cost money, but it will ultimately provide *more* jobs and fish. So go do it. The fisheries world should be able to see themselves that they are doing things that are absurd. And so holding up a mirror to this and showing how that can be perceived by looking at it from a different angle is going to be helpful, I hope."

Pauly firmly believes their work will show how our self-made fisheries crisis *can* be solved. The much larger challenge will be dealing with the politics.

*This article is adapted from an article which first appeared in the Vancouver Sun, November 5, 1999, page A29. It is the first in a series that will profile scientists and their research in the Sea Around Us project.*

*Nancy Baron is a Vancouver biologist and freelance journalist with an interest in biodiversity issues. Previously, Nancy authored "The Straits of Georgia", an article about the Fisheries Centre's pilot "Back to the Future" project, which appeared in Vancouver's Georgia Straight, v. 32 (1602), September 3-10, 1998.*

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