

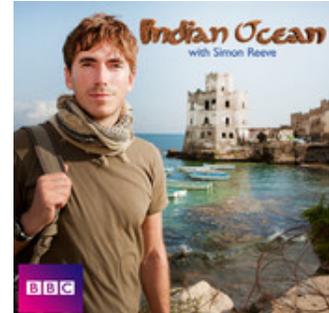


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CIMTAN *Snippets*

The British Broadcasting Corporation (BBC) recently released a television documentary entitled “Indonesia to Australia” as its 6th episode of the series “Indian Ocean with Simon Reeve”. It contains an interesting segment on seaweed cultivation in Bali between 22:03 and 28:28. **Thierry Chopin facilitated the contacts in Indonesia and was a scientific advisor for the narrative.**



Watch the documentary:

<http://www.unbsj.ca/sase/biology/chopinlab/av/content/BBCCurrentAffairs.html>

Arcadia Entertainment, based in Halifax, is exploring the features that define Canada: the most expansive coastline in the world and the world’s longest undefended border. This multi-episode series entitled “Canada over the Edge” takes to the skies for a breathtaking, rarely seen view of this beautiful country. In Episode 7 “**Bay of Fundy, New Brunswick**”, **Thierry Chopin (CIMTAN)** and **Frank Powell (Cooke Aquaculture Inc.)** explain the development of IMTA in Southwest New Brunswick in a segment between 36:00 and 40:30. The episode can be regularly seen on the **eqhd** and the **Rogers HD Nature & Adventure Channels**.

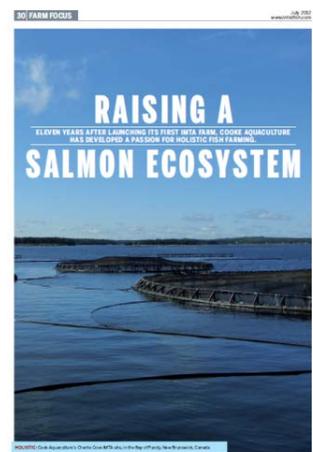


Watch the documentary: <http://www.unbsj.ca/sase/biology/chopinlab/av/content/CanadaOvertheEdge.html>

The July 2012 issue of **Fish Farming International** contains an article entitled “**Raising a salmon ecosystem**” based on the interviews **Jeanine Stewart** had with **Thierry Chopin** and **Shawn Robinson (CIMTAN)** and **Nell Halse** and **Andrew Lively (Cooke Aquaculture Inc.)**. The article relates their passion since 2001 for the development of IMTA, described here as “ecosystem farming” and “holistic fish farming”.

Read the article:

<http://www.unbsj.ca/sase/biology/chopinlab/articles/files/Fish%20Farming%20International%20-%20July%202012.pdf>



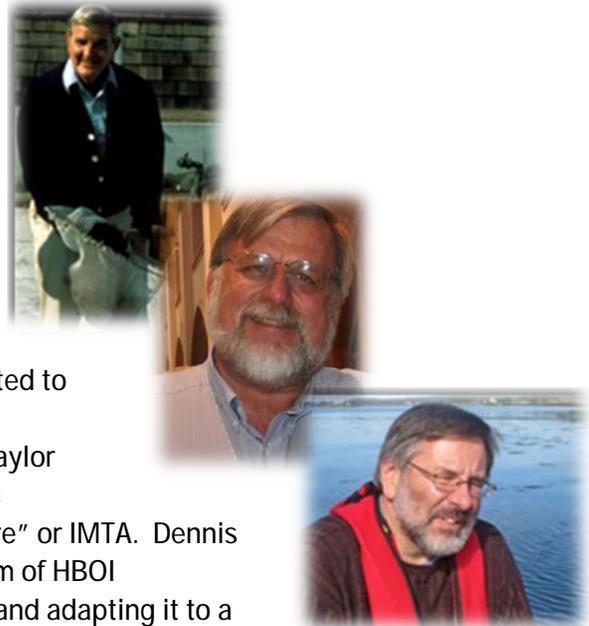


IMTA part of an exhibit at the **Gulf of Georgia Cannery National Historic Site in Richmond, British Columbia**. Karen Lee, the Public Programs Manager for the Gulf of Georgia Cannery Society, contacted **Thierry Chopin** (CIMTAN) last spring, as she was developing a temporary exhibit called “**Seafood for Thought**”, which explores the theme of securing sustainable seafood for the future (<http://www.gulfofgeorgiacannery.com/exhibitions/temporary-exhibit>). One of the panels is dedicated to IMTA.

Read the article:

http://www.unbsj.ca/sase/biology/chopinlab/imta/news/Gulf_of_Georgia_Cannery/index.html

IMTA full circle at Harbor Branch Oceanographic Institute (HBOI). **John Ryther**, who can be considered as the grandfather of modern IMTA for his seminal work on what he called “integrated waste-recycling marine polyculture systems” in 1975, worked first at Woods Hole Oceanographic Institution (WHOI) before moving to HBOI. One of his postdoctoral fellows at the time and now a Research Professor at HBOI, **Dennis Hanisak**, continued the work on nitrogen and the cultivation of seaweeds. One of Dennis Hanisak’s postdoctoral fellows, **Thierry Chopin**, worked at HBOI in 1987 on the phosphorus nutrition and carrageenan production of red seaweeds. He moved to the University of New Brunswick in 1989 and, in 1995, started to work on what would become IMTA in 2004, when, at a workshop in Saint John, New Brunswick, he and Jack Taylor combined “integrated aquaculture” and “multi-trophic aquaculture” into “integrated multi-trophic aquaculture” or IMTA. Dennis Hanisak is now revisiting the IMTA concept, with a team of HBOI aquaculture scientists led by fish biologist Paul Wills, and adapting it to a land-based IMTA-RAS (Recirculating Aquaculture System) being developed on the campus of HBOI-FAU (Florida Atlantic University). Quite an interesting case of RIAS (Recirculating Ideas on Aquaculture Systems) over three generations in direct lineage!



Read the article:

<http://www.unbsj.ca/sase/biology/chopinlab/articles/files/Hanisak%20Fish%20Farming%20News%201208%20HBOI.pdf>



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Jonathan Day is a MSc candidate at the University of New Brunswick Saint John (UNBSJ). He was born in Fredericton, New Brunswick, but has lived all over Atlantic Canada, spending an equal amount of time in New Brunswick, Nova Scotia and Newfoundland. In 2008, he graduated with a Bachelor of Science from Memorial University of Newfoundland (MUN). Afterwards he attended the Marine Institute of MUN where he obtained a Diploma in Marine Environmental Technology. Upon graduation, he received the Governor General's Bronze Medal Award for academic excellence.



Jonathan came to CIMTAN for his MSc thesis because he has always been passionate about protecting the environment. Since aquaculture plays such a major role in Atlantic Canada's economy, he felt that working with CIMTAN to study a new and more sustainable way of farming the sea was the right thing to do. The St. Andrews Biological Station and UNBSJ seemed to be the ideal locations for his MSc as it allowed him to study in his home province and stay close to family and friends. Jonathan is currently working with Drs. J. Andrew Cooper and Thierry Chopin as part of project D1P4. This project involves developing biological and biochemical indicators to monitor any positive or negative impacts that aquaculture-based nutrient plumes may have on local species distribution. One portion of the study focuses on the potential impacts of un-dissolved organics in the water column. This involves deploying biocollectors to monitor bio-fouling organism rates and assessing their instantaneous growth rates. The second portion of the study focuses on the dissolved inorganics in the water column. This will start by exploring if the variable coloration of some red and green seaweeds can be used as a proxy for internal nitrogen content.

Upon completion of his MSc, Jonathan hopes to continue working in environmentally related fields as an expert technologist. He plans on using the skills and experience that CIMTAN will have provided in order to stay in the region and find meaningful employment in the environmental sectors of Atlantic Canada.

First CIMTAN member quote of the month: "Working on this project has been a great experience since I have always been interested in sustainable aquaculture. CIMTAN has given me the opportunity not only to study a subject I am passionate about, but has allowed me to stay here in Atlantic Canada too. What could be better than researching what I love in a place as beautiful as the Bay of Fundy?" (*Jonathan Day, CIMTAN MSc candidate*).



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Nicholas Sherrington joined CIMTAN officially in 2011; however, he first got the opportunity to work



with marine IMTA systems in 2009 under the supervision of Dr. Stephen Cross. He has a BSc (Honours) in Marine Biology from the University of Newcastle upon Tyne and a MSc in Surveying and Project Management from the University of Liverpool. He has a broad interest in many types of aquaculture, and his initial foray into aquaponic systems is what led him to discover the marine-based IMTA models. He has a variety of experience with fresh and saltwater aquaculture, including open, semi-closed, and recirculating systems. He is a big believer that nearly all system types have their place within the industry.

His current MSc thesis work aims to test the effectiveness of the green alga *Ulva* as an inorganic extractive component of an IMTA system, using the novel local Wolf Eel (*Anarrhichthys ocellatus*) as the principal fed component.

Second IMTA member quote of the month: "Coming from a country whose public conception of aquaculture is near zero, it is interesting to come to a place where it is so hotly contested. I enjoy discussing with people the many misconceptions of aquaculture and look forward in helping to change some opinions, particularly here on the West coast". (*Nicholas Sherrington, CIMTAN MSc candidate*).