

“Reducing the impact of exotic aquaculture on Chilean aquatic biodiversity: A hot topic for the developing world”

Outline

- i) Exotic aquaculture is critical to the Convention on Biological Diversity, CBD, and to the developing world seeking economic growth.
- ii) The benefits of a smooth interaction between the partners goal-oriented
- iii) Results & activities of the project are, we believe, an example of what this meeting seeks, in order to establish a collaboration network in south America & Caribbean countries.

We highlight:

- iv) Capacity building to back up actions on a hot topic.
- v) Dialogue with stakeholders under “difficult circumstances”

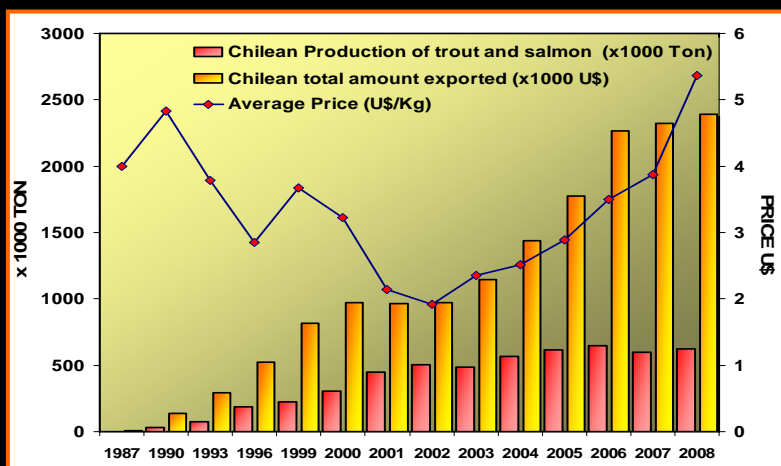
UK Contract Holder Institution:	University of Wales Swansea (UWS) Dr. Carlos García de Leaniz
Host Country Partner Institution:	Universidad de Los Lagos (ULA) Chile Dr. Gonzalo Gajardo
Partner Institution(s)	ERC Centre for Ecology & Hydrology, Banchory (UK)
	University of Victoria (BC, Canada)
	US Geological Survey (USA)
	Oregon State University (USA)
	Victoria University of Wellington (New Zealand)

1. Exotic aquaculture: a hot topic for the developing world. Why?

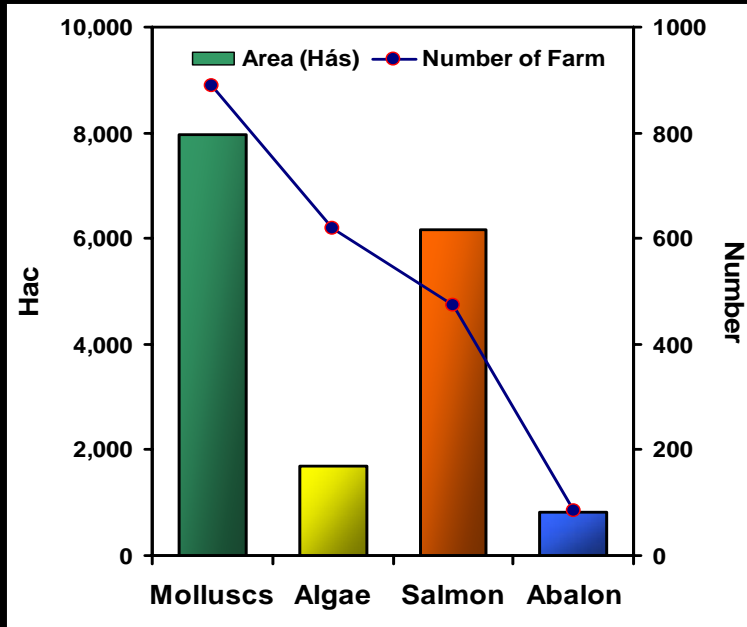
- i) Globalization will increase trade and exotic aquaculture
- ii) Exotic species are highly demanded by the market
- iii) Developing countries tend to prioritise highly demanded species



Chile an example



A significant surface occupied by aquaculture in a sensitive freshwater (mainly) ecosystem



The project addressed for the first time this paradox in a difficult environment

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Diversity 

Chilean Aquaculture Boom Is Based on Exotic Salmon Resources: a Conservation Paradox

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Through this paper the partners got in touch



The benefits of a smooth interaction between the partners goal-driven

- Frequent e-mail, telephone and lately Skype contact between partners.

Exchange and visits

- The project leader gave a plenary conference at the Annual Meeting of the Chilean Genetics Society (Viña del Mar, 2006), invited by this society on local coordinator's advise. An opportunity to address a wide audience of geneticists, students and government officials from the aquaculture and biodiversity sectors, who also participated in a biodiversity workshop moderated by the local coordinator.

Three workshops were organized

First Workshop

1. Puerto Montt (January 2007), the salmon capitol, held under the motto "building capacity for assessing, monitoring, and reducing the impact of the accidental or deliberate introduction of exotic fish species on Chilean aquatic biodiversity.

Almost all partners attended (UK, Canada, and USA)

All stakeholders: Huinay Foundation, WWF-Chile, ONG's, artisanal and sport fishermen, governmental agencies (Conama, Subpesca, Sernapesca), and representatives of the industry.

Remark: although a difficult period for the project as the industry was growing exponentially under the "dogma" (at that time) of un-limited growth only regulated by the market, we managed to get a declaration signed by all stakeholders, and the representative of the industry (Intesal)



Stakeholders Declaration

1. To support and facilitate research in order to get baseline information on the distribution, prevalence and impact of alien species from culture facilities, and looks for ways to minimize escapes.

2. To increase communication and commitment among stakeholders in order to assure that the project aims will be reached.

3. To work in collaboration with all stakeholders to develop a more sustainable aquaculture in Chile, contributing to strengthening the sector but also protecting the environment.

Firmado:
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Darwin Initiative
First International Workshop
Reducing the Impact of Exotic Aquaculture on Native Aquatic Biodiversity
Puerto Montt (Chile) - 17-18 January 2007



Second Workshop

Viña del Mar (2008). Again, project partners and volunteers, governmental officials, a panel of national and international speakers, including researchers from Argentina, where there is also growing concern about the rapid spread of invasive salmonids.

Remark: the workshop ended with a hands-on training session on the use of genetic software for stock identification and parental assignment, which was very well received by the students.



Second training workshop:
Molecular ecology of aquatic invasions
Viña del Mar (Chile) -17-19 Diciembre 2007
Bridging the gap for sustainable aquaculture



Third Workshop

Puerto Varas (September 2009). A quiet town by Lake Llanquihue, the largest in Chile and, perhaps, the most contaminated by escaped salmonids.

In the first part, stakeholders met to discuss a Code of Best Practices and a Management Action Plan, and future strategies for a more sustainable aquaculture. The second part (technical meeting) summarised the project result on all the topics considered (isotopic and genetic methods, assessment of trophic levels, diet and habitat overlap, competition).





Others Dissemination Activities

Hacia una acuicultura sustentable

Taller internacional en el marco de un proyecto Darwin Initiative considera conferencias abiertas con participación de las universidades de Gales, Swansea y de Los Lagos.

"Bridging the gap for sustainable aquaculture" es el nombre de un taller internacional a realizarse entre el lunes 15 y el domingo 21 de enero en Puerto Montt, en el marco del proyecto Darwin Initiative "Reducing the impact of exotic aquaculture on Chilean aquatic biodiversity", que en Chile lleva adelante el Laboratorio de Genética y Acuicultura de la Universidad de Los Lagos.

Este proyecto Darwin Initiative -con financiamiento del gobierno británico- busca producir información científica para conocer cabalmente cómo interactúan los especies exóticas con las nativas, con la finalidad de monitorear el impacto que pueden tener. "Al disponer de esta información en condiciones de realidad y, a la vez, aportar ideas para profundizar el estudio de este laborioso Océano.

Según menciona el académico, "uno es reunir a todos los grupos de este desde empresarios hasta ambientalistas hacer una declaración conjunta sobre posturas de los partes involucradas".

PIONERO
El taller pretende aportar información científica rigurosa sobre el ecosistema que sostiene a la acuicultura local para colaborar con una industria que busca seguir creciendo con el menor impacto, como también con aquellos que deciden sobre la implementación de políticas para la explotación, manejo y conservación de la biodiversidad. "Igualmente, este evento pretende educar sobre el desafío del desarrollo con sustentabilidad, un tema que es transgeneracional y transversal", precisa el Dr. Osando.

Esta acción de buscar concordar alternativas y medidas para el futuro luego de presentar las diversas visiones sobre una

Realizarán taller internacional que analizará la acuicultura sustentable en Chile

AQUA.cl

Noticia publicada el 17/12/2006

En el marco del proyecto británico Darwin Initiative, se realizará el taller internacional "Bridging the gap for sustainable aquaculture" (Construyendo puentes para una acuicultura sustentable) el cual pretende congregar a investigadores, empresarios, autoridades y stakeholders a interactuar en torno a diferentes objetivos planteados por el mismo proyecto (www.biodiversity.cl).

En dicha iniciativa participan destacados científicos extranjeros, colaboran importantes empresas salmonicultoras (Marine Harvest Chile y Salmos Multiexport S.A.), además de otros agentes vinculados (pescadores deportivos).

"Nuestro desafío es aportar información científica para colaborar con la industria salmonicultora, que pretende seguir creciendo con el menor impacto, como también con aquellos que deciden e implementan políticas de manejo y conservación de la biodiversidad. Igualmente busca educar en el desafío del desarrollo con sustentabilidad, un tema que es transgeneracional y transversal", precisa el Dr. Osando.

La salmonicultura de Aysen y sus posibles impactos en los ecosistemas

Efectos y mitigación ambiental

Aporte "real" a la conservación

Mesa Branca el compromiso de la biodiversidad acuática chilena

ERRECACIÓN

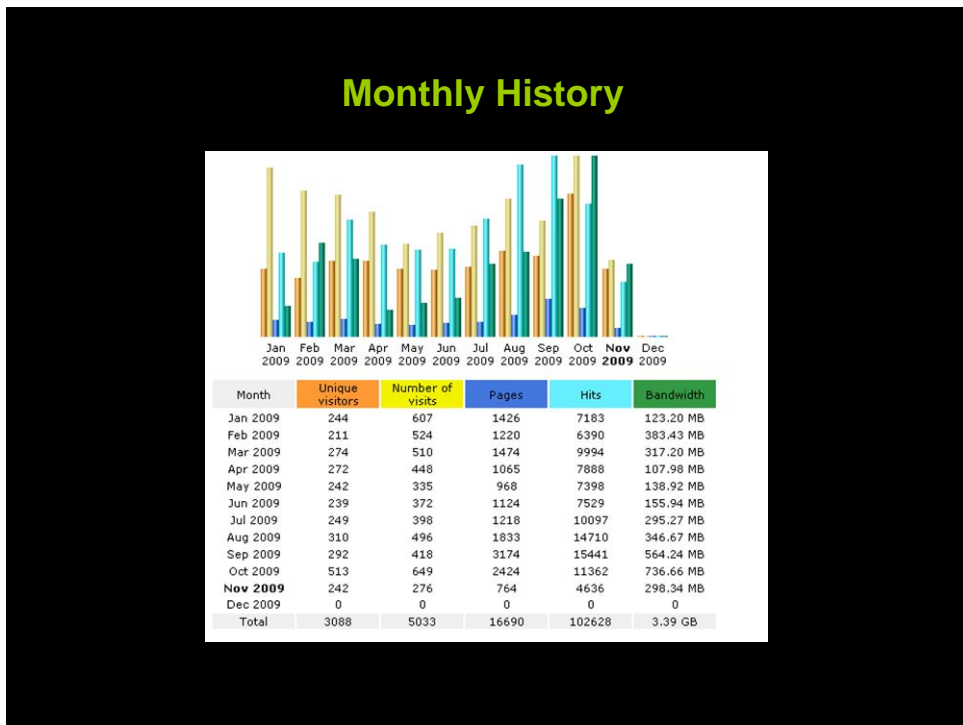
COLABORACIÓN

WEB PAGE

English Version **Spanish Version**

www.biodiversity.cl

The image displays two overlapping screenshots of the website. The top screenshot shows the English version with a navigation menu on the left and main content areas for Publications, Darwin Training and Education Workshops, and Videos. The bottom screenshot shows the Spanish version with a similar layout but in Spanish, including sections for Descripción del Proyecto, Publicaciones, Talleres de Entrenamiento y Educación de Darwin, and Noticias y Opiniones. Both versions feature a header with the project title and a Darwin logo.



Field worker Volunteers



Jane McDonald
Australian Museum, Australia
(March – April 2007)



Alexandre Terreau
Polar Institute, France
(October 2007 – February 2008)



Anne-Flore Thailly
University of Orsay, France
(October 2007 – February 2008)



Jessica Stephenson
University of Oxford, UK.
(February- August 2008)



Delphine Vanhaecke
University of Wales, UK
(March – April 2009)



Antoine Baehr
Enita Clermont Ferrand, France
(June – July 2009)



Gabriel Orellana
Student of Engineering in
Aquaculture
Universidad Austral de Chile

Collaboration with Salmon Industries

12 aquaculture facilities (8 in the marine water and 4 in freshwater)
kindly provided samples for DNA and isotopes analyses



What's next?

1. We were pioneers in putting this issue on the table with stakeholders, therefore we need to move on.
2. We currently have the infrastructure, human capacity and reliable tools (**DNA tool kit, Isotopes**) to help other countries facing similar problems.
3. We have also established a reliable relationship with key stakeholders (**Industry, government**) and, hopefully, a good exchange of information (project website has proved useful).
4. We established a network of scientific collaboration (**UK, Canadá, USA, New Zealand, Argentina**) that can be useful for other countries in the region.



R & D INVESTMENT AREAS IN THE SALMON CLUSTER 1990 - 2006

