



French-Japanese Symposium, Ifremer, Sète, France, 1-3 September 2010

How minimizing the footprint of aquaculture and fisheries on the ecosystem?

Meeting Information & Agenda





*Centre de Recherche Halieutique Méditerranéenne et Tropicale (CRH) - Sète, France.
Wednesday 1st September 2010 to Friday 3rd September 2010*

Welcome

Welcome to all for this first symposium organized by the University of Kinki and Ifremer on the interactions between fishery, aquaculture and environment.

The intention of this conference is to provide a forum for the researchers, delegates of the aquaculture and fishing industries and managers, to come together to share ideas, update information and report on the progress of the most recent experiences on the reduction of negative impact of aquaculture and fishing activities on the environment. This conference is also the opportunity to encourage the development of cooperation on ecosystem approach between scientists from Japan and France and other partner countries for a better sustainable exploitation of marine resources.

Researchers' participation of 9 countries among which Canada, Croatia, France, Italy, Japan, the Philippines, Slovenia, Spain and Tunisia, underlines the international dimension of this issue. This conference received the wide support of our institutions, local and regional Assemblies of elected representatives and the representatives of the aquaculture and fishing industries of the Gulf of Lions and who join us to wish each of you welcome to Sète and hope you take advantage of the hospitality this region has to offer.

Thank you again for your participation and your help to make of this symposium a success.

Bienvenue

Bienvenue à tous pour ce premier symposium organisé par l'Université de Kinki et Ifremer sur les interactions entre la pêche, l'aquaculture et l'environnement.

L'intention de cette conférence est d'offrir un forum pour les chercheurs, les délégués de l'industrie de pêche et de l'aquaculture et les gestionnaires pour partager des idées, réactualiser des informations et présenter leurs expériences les plus récentes sur la réduction de l'impact négatif de l'aquaculture et pêche sur l'environnement.

Cette conférence est donc aussi l'opportunité d'encourager le développement de coopération sur l'approche écosystémique entre des scientifiques du Japon de la France et d'autres pays partenaires pour une exploitation plus durable de ressources marines.

La participation de chercheurs de 9 pays dont le Canada, la Croatie, l'Espagne, la France, l'Italie, le Japon, les Philippines, la Slovénie et la Tunisie, souligne la dimension internationale de cette question.

Cette conférence a reçu le large soutien de nos institutions, des Assemblées d'élus locales et régionales et des représentants des industries de pêche et de l'aquaculture des côtes du Golfe du Lion et qui se joignent à nous pour souhaiter à chacun d'entre vous une bienvenue à Sète et de profiter des plaisirs et de l'hospitalité de notre région.

Merci encore pour votre participation et votre aide à faire de ce symposium un succès.



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International Scientific Committee

Denis Bailly: Économiste, UMR-AMURE, Université de Brest.

André Carpentier: Chercheur biologiste halieute, Responsable du Département Halieutique Manche Mer du Nord, Ifremer Boulogne sur mer.

Christian Chaboud: Economiste des pêches, UMR 212, CHMT¹, IRD Sète.

Philippe Cury: Directeur de l'UMR 212, Coordinateur scientifique d'Eur-Oceans, CHMT, IRD Sète.

Henri Farrugio: Président du Comité Scientifique de la CGPM², CHMT, Ifremer Sète.

Christian Fauvel : Chercheur biologiste; physiologie aquacole, Ifremer Palavas.

Jean-Marc Fromentin : Responsable programme thon rouge, Ifremer Sète.

Yves Henocque: Responsable nature et société, direction Prospective et Stratégie Scientifique, Ifremer, Issy les Moulineaux.

Keitaro Kato: Deputy Head of Experimental Station Associate Professor University of Kinki

Hidemi Kumai: Professor Trustee of the University of Kinki Project leader of GCOE program

Shigeru Miyashita: Professor Head of Amami Experimental station.

André Monaco: Directeur de Recherche CNRS Emérite CEFREM-Université de Perpignan.

Osamu Muratan: Professor Director of the University of Kinki.

François Poisson: Responsable Ifremer pour les programmes MADE et IPEP, CHMT, Ifremer Sète.

Daniel Priour: Chercheur Ingénieur hydrodynamicien - Ifremer Brest.

Patrick Prouzet: Responsable de la coordination transversale sur l'Approche Systémique Ifremer, Anglet.

Jacques Sacchi : Directeur de Recherche IFREMER – Technologiste des Pêches, CHMT, Ifremer Sète.

Philippe Vendeville : Chercheur biologiste halieute, UMR 212, Centre Halieutique Méditerranéen et Tropical Sète, IRD Sète.

Takeshi Yamane: Head of Fisheries laboratory-Professor at the graduate school of the University of Kinki.

National and Local Organizing Committee

Jacques Sacchi, Takeshi Yamane, François Poisson, Gérard Riou, Lisa Koenig, Jacques Vichery, Jacques Dietrich, Patricia Gontier, Erick Buffier.

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A Brief History of Kinki University

The university dates its foundation back to the establishment of Osaka Technical College in 1925. Under the new education system, the university proper came into being in 1949 when the founder college merged with Osaka Science and Engineering University, which was established in 1943. The first President was Koichi Seko. Initially there were just two schools, the School of Engineering and the School of Commerce (which has since grown to become the School of Business and Economics).

Always sensitive to the latest developments in the world, Kinki University has constantly focused on the future prospects of its alumni. After the war, when food was in short supply, the university turned its attention to opening up the field of marine resources in order to assist in the resolution of that problem. The Marine Research Centre was opened in 1948 in Shirahama-cho, Wakayama Prefecture and is still going strong today as the Fisheries Laboratory. This was the first time that research into marine fish farming was carried out in Japan. Other pioneering projects include, along with the opening of the Atomic Energy Research Institute, establishing the first private nuclear reactor facilities in 1960. Kinki University has constantly maintained an approach to education that is both practical and proactive.

A school culture that's open to the new and possesses substantial facilities

When Masataka Seko became the head of Kinki University in 1965, he effectively used his energy to fill out and improve the curricula and environment. In 1974 the School of Medicine was opened, followed, just a year later, by a teaching hospital. Besides these new departures, existing university buildings were reconstructed and laboratories and other facilities were improved and expanded.

One aspect of his vision "Education comes from the environment" that there would be more greenery on campus has also been realized.

Even greater activity towards a more comprehensive university

Coming into the 1990s, more radical changes were in store. In 1989, breathing new life into a university that had hitherto concentrated on science and technology, the School of Literature, Arts and Cultural Studies was opened. At the same time, the School of Agriculture was relocated to a campus in Nara Prefecture which was more conducive to allowing students to pursue more rewarding studies concerned with our natural environment.

In 1993, the School of Biology-Oriented Science and Technology was opened in Uchita-cho, Wakayama Prefecture. It attracted public interest as the first center in Japan to concentrate on this new field concerning superior functions possessed by organisms.

As a comprehensive institute of learning that comprises 11 schools and 44 departments in all and which, moreover, has a School of Medicine that runs three general hospitals, Kinki University covers many fields of research. And the contribution this university makes to world has been rising with every passing year.



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Kinki University
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Ifremer Sète and the Centre de Recherche Halieutique Méditerranéenne et Tropicale (CRHMT).

CRHMT develops integrated and multidisciplinary studies in the Mediterranean and tropical areas to study the effect of climate change and overexploitation on marine ecosystems. The objectives are to develop knowledge, tools, and models to contribute to the EAF. CRHMT is keen at collaborating and developing projects with European, Mediterranean and tropical countries and becoming a training and 'think tank' centre with the help of scientific network such as Eur-Oceans Consortium.

The fisheries thematic of Ifremer is aimed to obtain, within 10 years, the scientific means and methods which will ensure the maintenance of the fisheries in an sustainable state and the preservation of habitats, ecosystems and biodiversity.

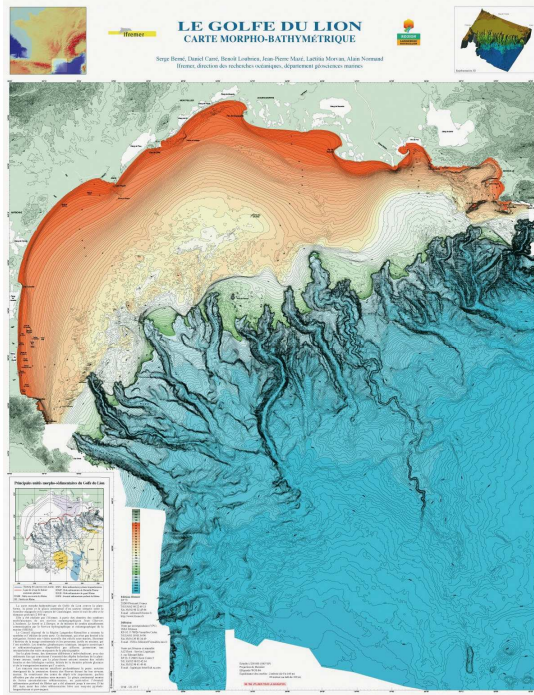
In the very dynamic context of the Mediterranean during this period, the actions of the fisheries department are oriented in three main directions:

- the actions oriented towards the gathering of observations on the fisheries resources (biological parameters, exploitation patterns, population dynamics) and on the environment, and the production of diagnosis and advices directed to the fisheries national and international management bodies,
- the Ecosystemic Approach of the Fisheries, which general goal is to allow the integration of a number of parameters which are not yet taken into account in most of the fisheries management processes (multispecificity, species interactions, natural anthropic effects on the environment...)
- and the study of trophic webs which is integrated in a research programme on the fate of contaminants in the sea water masses.

The research field of the department covers the demersal species as well as the small and large pelagics, exploited by various fishing techniques operated by small scale fishermen, trawlers and purse-seiners



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34203 Sète





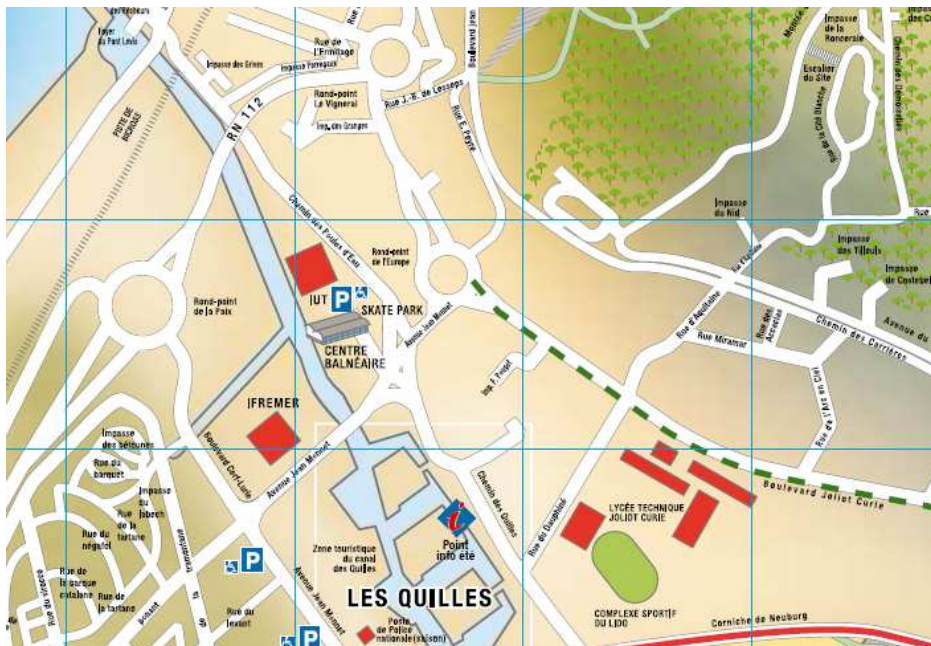
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Venue and meeting Information

Registration Desk

The registration desk is open Wednesday (8am–9am) at the entrance of the main building of *Institut Universitaire de Technologie (IUT de Chimie)*. The registration desk will be staffed to help answer questions regarding the meeting. If you have more general questions about the local area please contact the organisers for assistance.

Institut Universitaire de Technologie - IUT de chimie
Chemin de la poule d'eau –
Carrefour de l'Europe
34200 SÈTE
Tél. 04 67 51 71 00



Meeting Rooms

The plenary sessions will be held in the auditorium of the *Institut Universitaire de Technologie* and poster presentation will occur in a room next door. During all sessions please turn off mobile phones or set to vibrate.

Food and Beverage

Morning and Afternoon Tea breaks will be held directly outside the auditorium. Lunch will be provided for all registered delegates at 12:30. Name badges will be required to identify delegates as eligible for lunch catering.



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Presenter Information

Oral Presenters

Talk lengths will be 15 minutes. This means presenters should aim for a 12 minute talk leaving 3 minutes for questions.

If you are speaking on Wednesday morning we would appreciate it if you could bring your presentation to the registration desk so we can get it loaded up.

For everyone else, please ensure your talks are loaded in advance either via the registration desk or during the tea or lunch breaks period prior to their presentation, at the latest. Speakers can review their slides at the time of loading to ensure formatting is retained.

Language

The official language of the symposium will be English. Simultaneous translation of the oral presentations and debates will be ensured by professional translators (French/English).

Poster Presenters

Presenters are asked to place their poster on the assigned board on Wednesday to allow delegates time to view them. Each poster board will be labelled with a number; the author should place their poster in the appropriately numbered space. At least one author must be present during the entire poster session to answer questions. The poster session will be held during coffee break.

Meeting Prizes

Two prize categories are available during the conference: Student Best Talk, Student Best Poster. All prizes will be announced at the end of the last session.

Social Events

Accompanying persons

Delegates are welcome to bring their partner or spouse to the symposium and to book them onto field trips and other excursions. A partner registration can be obtained to allow accompanying persons to attend social functions and receive an at-a-glance conference program. Partners may attend scientific sessions. If you wish to bring an additional person to the conference dinner a ticket must be purchased for them.

Tour /Gala dinner

This is just a reminder that Thursday afternoon is an off day (no talks) in the Symposium schedule. We have organised a tour!

<http://garriguesdethau.free.fr/Annuaire/Fiche%20Castaldo.pdf>

The gala dinner will be held the same day.



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Themes and Agenda

The participants are invited to present current knowledge on disciplines related to the themes of the symposium, and exchange information and experiences within these four following main themes:

1 - Interaction between aquaculture, fisheries and ecosystem

- biology, technology, economic and social implications for exploited species and species of conservation concern ;
- mutual benefits, seasonality and space conflicts and challenges ;
- market and other anthropogenic activities effects.

2 - Mitigating measures and good practices in fishing and aquaculture activities

- selective fishing techniques, alternative harvesting methods ;
- new technologies for sustainable aquaculture, feed manufacturing ;
- artificial reefs and restricted fishing area ;
- fish welfare, fish health and fish quality, training.

3 - Integration of Fisheries and Aquaculture industries into planning and management

- dissemination of scientific advices to stakeholders ;
- scale of stakeholders involvement in management ;
- banned fishing techniques and switching gears issue ;
- preservation of traditional and local uses.

4 - Governance system

- multi-scale governance mechanisms ;
- the human dimensions of the ecosystem approach to fisheries ;
- integrating knowledge for adaptive management ;
- integrating environmental and fisheries policies into ICOM ;
- penalties and incentives for compliance to regulations ;
- ethical obligations to the natural environment: concepts and values.

Wednesday 1st September 2010

Oral Session

8:00 Registration

9:00 Welcome

9:30 TOPIC 1 : INTERACTION BETWEEN AQUACULTURE, FISHERIES AND ECOSYSTEM

Moderators: Z. Suzuki / P. Prouzet

P. Addis

The effects of mining extraction on the Atlantic bluefin tuna (*Thunnus thynnus*) trap fishery of Sardinia (Western Mediterranean)

C. Chaboud

Interactions between industrial shrimp fisheries with other fisheries and the environment. Biological and bio-economic aspects, the examples of Madagascar and French Guyana

A. Fiandrino

Escherichia coli Maximum allowable daily loads (MADL): an environmental management tool for improving the microbiological quality of the Thau lagoon water (French Mediterranean coast)

P. Guillotreau

Climate oscillations and tuna-dependent economies

10:30 Coffee break

M. Katoda

An optimization problem of aquaculture and fisheries product

R. Le Boucher

Can genetic improvement in aquaculture reduce the impact on fisheries? The case of European sea bass (*Dicentrarchus labrax*) fed on a totally plant-ingredient based diet.

Z. Suzuki

Harmonizing aquaculture, fishery and management, challenges in Pacific bluefin tuna

12:30 Lunch

Oral Session

14.00 CONTINUING TOPIC 1 : INTERACTION BETWEEN AQUACULTURE, FISHERIES AND ECOSYSTEM

M. Tada

Regulation on bluefin tuna catch in the Mediterranean sea and the market expansion for the full cycle farmed tuna

S. Voisin

Methodology for Comparing the Environmental and Socio-Economical Impacts of the Fishery and aquaculture Supply Chains: from wild fish in the water to protein on the consumer plate

TOPIC 2 : MITIGATING MEASURES AND GOOD PRACTICES IN FISHING AND AQUACULTURE ACTIVITIES

R. Babaran

Measurement of the resonant vibrations of bamboo used for fish aggregating devices

J.-L. Coeurdacier

Is global serum protein a good indicator for stress and welfare in reared sea bass

C. Fauvel

Control of bluefin Tuna reproduction: a condition for self sustained aquaculture

16:00 Coffee break and Poster Session

H. Fukuda

16:30 Ontogenetic changes in schooling behaviour and transmission of behaviour between individuals of Pacific bluefin tuna juveniles.

G. Moreno

Fishers' echo- sounder buoys to study fish aggregations around drifting FADs

T. Yasuda

Estimating the rate of energy expenditure in red sea bream *Pagrus major* using an acceleration logger

M. Nalovic

Reducing the effects of shrimp trawling on the Guyana's plateau ecosystem

Thursday 2nd September 2010

Oral Session

8:30 TOPIC 2 : MITIGATING MEASURES AND GOOD PRACTICES IN FISHING AND AQUACULTURE ACTIVITIES

Moderators: T. Takagi /J. Sacchi

D. Priour

Numerical method for energy optimization of bottom trawl

B. Séret

«MADE» Project: Methods to release Elasmobranches from purse seine

S. Shirakashi

Parasitic infections observed in artificially bred Pacific bluefin tuna, *Thunnus orientalis*

T. Takagi

Dynamic analysis in the development of offshore net-cage aquaculture system for bluefin tuna by using computer simulation system NaLA

10:30 Coffee break and Poster Session

11:00 S. Torisawa

Three-dimensional monitoring of free-swimming Pacific bluefin tuna cultured in a net cage using a digital stereo-video camera system

T. Tsuda

Visibility range of juvenile Pacific bluefin tuna, *Thunnus orientalis*, related to the turbidity and the color sensitivity in the net-cage

12:00 Lunch

TOUR



Oral Session

8:30 **TOPIC 3 : INTEGRATION OF FISHERIES AND AQUACULTURE INDUSTRIES INTO PLANNING AND MANAGEMENT**

Moderators: M. Kadota /C. Chabout

L. David

Synthesis of scientific studies undertaken during six years on the Mediterranean "thonaille" fishery: bycatch and solutions

G. Fabi

Artificial reefs as fisheries management tools in the northern Adriatic Sea

H. Farrugio

A Fisheries restricted area in the Gulf of Lions (France)

M. Goujon

Actions of the French purse-seine industry to reduce its footprint on the tropical pelagic ecosystem

O. Guyader

Moored Fishing Aggregating Devices exploitation by Small-Scale Fleet in the Caribbean: Review and Outlook after 20 years

10:30 Coffee break and Poster Session

11:00 R. Parker

Ecological footprint and life cycle assessment of Antarctic krill fishery products

D. Sauzade

Mediterranean marine ecosystems: an economic valuation

TOPIC 4 :GOVERNANCE SYSTEM

Moderators: M. Tada / Y. Henocque

B. Cazalet

Indeterminacy of waters under the jurisdiction in the Mediterranean

J.-M. Fromentin

Overfishing : the Atlantic bluefin tuna case

12:30 Lunch

Oral Session

14:00 CONTINUING TOPIC 4 : GOVERNANCE SYSTEM

Y. Henocque

What makes the difference between the ecosystem approach to fisheries and integrated coastal zone management in the Mediterranean: it's the economy, stupid!

N. Miyashita

Seedling Production of the Pacific Bluefin Tuna.

S. Pioch

Toward a new coastal development: the 4 dimensional uses of the sea

16:00 Coffee break and Poster Session

16:30 Conclusions

Session Poster

TOPIC 1 : INTERACTION BETWEEN AQUACULTURE, FISHERIES AND ECOSYSTEM

D. Banaru

Food web and fisheries interactions in the Gulf of Lions

V. Cikes

Reproductive cycle and minimal length at sexual maturity of *Scomber japonicus* (Houttuyn, 1782) in the Middle eastern Adriatic Sea

F. Grati

Interaction in coastal waters: A roadmap to sustainable integration of aquaculture and fisheries – the COEXIST project

I. Isajlovic

Preliminary results of the south Adriatic deep sea fauna investigation

Y. Kunimune

Acoustic telemetry study on seasonal migration patterns of the endemic crucian carp *Nigorobuna* and *Gengorobuna* in Lake Biwa, Japan

O. Serais

Investigating an avian source of shellfish microbial contaminations on Thau in dry weather conditions

N. Staglicic

Temporal changes in littoral fish assemblages along the eastern Adriatic coast

B. Zorica

Growth, age - otolith weight and length relationship of garfish in the eastern Adriatic Sea

TOPIC 2 : MITIGATING MEASURES AND GOOD PRACTICES IN FISHING AND AQUACULTURE ACTIVITIES

J.-L Coeurdacier

A first approach to investigate alterations, within physiological limits, in serum protein of sea bass (*Dicentrarchus labrax*)

N. Di -Meglio

Endangered species and fisheries in the Western Mediterranean: Which strategy to mitigate the interaction?

J. Franco

New Designs of Drifting Fish Aggregating Devices to avoid passive catches of sea turtles and sharks

T. Kojima

Estimation of fish struggle energetics using branch line movement in longline

K. Komeyama

Measuring the swimming behaviour of a cultivated pacific bluefin tuna in an aquaculture net cage

K. Nagamatsu

Investigation of submersible net cage movement using a model Orientation changes due to asymmetric surplus buoyancy

M. Pinault

Artificial reefs as a tool to supply artisanal fishery in Reunion Island: Implementation and scientific evaluation

T. Šegvic Bubic

Wild fish population around the sea-cages of the eastern Adriatic tuna farms

F. Poisson

Incidental catches of thresher sharks in the Gulf of Lions (Mediterranean Sea)

Session Poster

TOPIC 2 : MITIGATING MEASURES AND GOOD PRACTICES IN FISHING AND AQUACULTURE ACTIVITIES

T. Yamane

Effects of currents and the induced net deformation on set-net fishery, experimental and numerical approach

T. Yamane

Human impact on the catch composition of traditional set-net operated in the south-basin fishing ground of Lake Biwa

T. Yamane

Relationship between the discards and catch-diversity of the set-net fishery

T. Yamane

How to minimize the discards from set-net fishery

TOPIC 3 : INTEGRATION OF FISHERIES AND AQUACULTURE INDUSTRIES INTO PLANNING AND MANAGEMENT

B. Cazalet

Reflections on the management methods of artificial reefs

F. Claro

GTMF (Groupe Tortues Marines France) an appropriate tool for sea turtle conservation

TOPIC 4 : GOVERNANCE SYSTEM

J. Barde

Fisheries Data Integration for Ecosystem Approach to Fisheries

A. Carpentier

The Charm Project: Defying the Channel's loss by facing environmental challenges across borders

H. Farrugio

Monitoring Mediterranean fish stocks and fisheries management measures