

W7 MEQ/FIS Workshop **Interactions between aquaculture and marine eco-systems**

Co-Convenors: Katsuyuki Abo (Japan), Kevin Amos (U.S.A.), Galina Gavrilova (Russia) and Hyun Jeong Lim (Korea)

Open-water marine aquaculture has ongoing interactions with its surrounding environment. Some of these interactions have the potential to cause negative and positive effects on the other. For example, pathogens may be transmitted from wild reservoirs to cultured animals and vice versa with the consequence of disease and mortality. Another example is the dispersal of nutrients from a farm site which in some instances negatively impacts the benthos while in other areas may enhance a nutrient-deficient marine zone or contribute to the culture of another aquatic species. Also, changing marine environments, including those impacted by global warming and ocean acidification, have the potential to affect these ecosystem interactions so as to investigate the culture of new farmed species - species that may perform better in altered environments. The PICES Working Group on Environmental Interactions of Marine Aquaculture (WGEIMA) has been charged to evaluate existing and potentially new interactions and to develop models that assess the risk of these interactions to include escapes of farmed marine animals (considerations for genetics, competition, and pathogen transfer), discharge of effluent from culture facilities, use of non-native species in culture, and the exchange of pathogens between farmed and wild aquatic animals. Major goals of this workshop include: 1) discussion of tools and models currently used by member countries to assess types of interactions and risks posed by them; 2) developing consensus on aquaculture technologies and indicators of interactions that will be used in completing the terms of reference and preparing report of WGEIMA to include species and methods of culture; and 3) identifying the process by which the work will be carried out under the terms of reference.

Saturday, October 24, 09:00 to 18:00

- 9:00 ***Introduction by Convenors***
- 9:05 **Dario Stucchi, Michael Foreman, Ming Guo and Piotr Czajko (Invited)**
A coupled biophysical sea lice model for the Broughton Archipelago (W7-5582)
- 9:35 **Tamiji Yamamoto, Hajime Maeda, Osamu Matsuda and Toshiya Hashimoto (Invited)**
Effects of culture density on the growth and fecal production of oyster *Crassostrea gigas* (W7-5595)
- 10:05 **Xuelei Zhang**
Challenges and opportunities of environmental issues faced by coastal aquaculture in China (W7-5891)
- 10:30 ***Coffee / tea break***
- 10:50 **Galina S. Gavrilova**
Some ecological aspects of invertebrate mariculture in semi-closed bights (W7-5654)
- 11:15 **Jill B. Rolland and Lori L. Gustafson**
A model to exclude endemic pathogens from semi-open or open aquaculture facilities: Utilizing compartmentalization to promote epidemiologic separation in shellfish hatcheries (W7-5881)
- 11:40 **Lori L. Gustafson and Jill B. Rolland**
Marine reservoirs for infectious salmon anemia virus in pen-reared Atlantic salmon: Do they play a role in the U.S.? (W7-5879)
- 12:05 **Kevin H. Amos**
A review of infective doses of viral and bacterial pathogens for modeling interactions between marine pen-reared salmon and wild cohorts (W7-5801)
- 12:30 ***Lunch***

- 14:00 **J.E. Jack Rensel, Dale A. Kiefer and Frank O'Brien (Invited)**
Aquaculture modeling using a GIS-integrated simulation model (W7-5716)
- 14:30 **Katsuyuki Abu and Toshinori Takashi**
Assessing nutrient environments of Nori (*Porphyra*) aquaculture area by using numerical model (W7-5628)
- 14:55 **Brett R. Dumbauld and Jennifer L. Ruesink**
Evaluating the effects of bivalve shellfish aquaculture and its ecological role in the estuarine environment in the United States (W7-5823)
- 15:20 **Edward A. Black**
Aquaculture risk assessments and ecosystem-based management (W7-5989)
- 15:45 ***Coffee / tea break***
- 16:00 **Motoyuki Hara and Toyomitsu Horii**
Evaluation of the impacts of seedlings on abalone reproduction by genetic approach (W7-5940)
- 16:25 **Qtae Jo, Su-Kyoung Kim, Chae Sung Lee, Jin Yeong Kim and Victor D. Dzizyurov**
Production of healthier *Patinopecten yessoensis* seeds for aquaculture on the Korean and Russian coasts of the East Sea (W7-5827)
- 16:50 ***Workshop ends***

W7 Posters

- W7-5730 **Larissa A. Gayko**
The long-term physical-statistical method for the forecast of mollusks' yield at marine farms in Primorye (Sea of Japan)
- W7-5731 **Larissa A. Gayko**
Interrelation between hydrometeorological and biological parameters of marine farms in Primorye (Sea of Japan)
- W7-5736 **Arthur A. Kos'yanenko**
The distribution of commercially important species of sea squirts (Ascidians) in Alekseeva Bay of Peter the Great Bay
- W7-5744 **Liping Jiao, Gene J. Zheng, Tu Binh Minh, Liqi Chen and Paul K.S. Lam**
Persistent toxic substances in remote lake and coastal sediments from Svalbard, Norwegian Arctic: Levels, sources and fluxes
- W7-5899 **Valeria E. Terekhova**
Effect of the prophylactic antibacterial treatment on the intestinal microflora of cultivated sea cucumber, *Apostichopus japonicus*
- W7-6013 **Gary H. Wikfors**
Flow-cytometric applications for bivalve hemocytes: Tools for assessing mollusc/ecosystem interactions
- W7-6014 **April N. Croxton, Gary H. Wikfors and Richard D. Gragg, III**
An evaluation of hemocyte profiles from oyster populations located in two Florida bays