

# Keynote speakers

The 47<sup>th</sup> European Marine Biology Symposium (47<sup>th</sup> EMBS)  
03.-07.09.2012, in Arendal, Norway

## *Opening lecture:*

### *Ecological effects of human activities in the sea – challenges and possibilities*



#### **Jeffrey A. Hutchings, Dalhousie University, Canada**

His research centres on questions pertaining to the life history evolution, behavioural ecology, population dynamics, and conservation biology of marine and anadromous fishes, particularly Atlantic cod (*Gadus morhua*), Atlantic salmon (*Salmo salar*), and brook trout (*Salvelinus fontinalis*). From an applied perspective, this work has bearing on questions pertaining to: the collapse, recovery and sustainable harvesting of marine fishes; interactions between wild and farmed Atlantic salmon; population consequences of fisheries-induced evolution; and the biodiversity of Arctic and sub-Arctic fishes. In addition to his responsibilities as professor at Department of Biology to undergraduate and graduate teaching, supervision of postgraduate students and postdoctoral fellows, and the undertaking of basic and applied research, Jeff is also president in *Canadian Society for Ecology and Evolution* ([www.ecoevo.ca](http://www.ecoevo.ca)) and Charter Member, Research Advisory Panel, Science Media Centre of Canada.

## *Theme 1:*

### *Ecological impact of aquaculture and fishery activities*



#### **Geir Lasse Taranger, Institute of Marine Research, Norway**

Geir Lasse Taranger has 20 years experience on reproductive fish physiology, fish welfare and environmental control of reproduction, smoltification and somatic growth in farmed fish. His main interest is in regulation of puberty and spawning in salmon and cod and particularly in photoperiod control. Through the years, Geir Lasse has had a number of central positions at the institute in connection with aquaculture and is now research manager for the research group “*Reproduction and growth in fishes*”. The group focus on effects of light, temperature, availability of nutrients and environmental toxins/produced water, the effects of underlying mechanisms on interactions between growth and reproduction, and how the allocation of

energy to various organs changes in the course of the life-cycle and with condition and the nutritional situation. National coordinator for the EU funded project FAIR-CT96-1410. Coordinator for the EU funded projects QLRT-2001-01801 PUBERTIMING and FP6 WEALTH.



**Simon Jennings, University of East Anglia, Great Britain**

Simon Jennings is a Chief Scientific Adviser at the Centre for Environment, Fisheries and Aquaculture Science, Lowestoft, UK and Chair of Environmental Sciences at the University of East Anglia. Research conducted by Simon and his colleagues focuses on understanding the impacts of humans and the environment on the ecology of the oceans and has helped to underpin the development of ecosystem-based management. His interests include population, community and ecosystem ecology; biodiversity; food webs; life histories; stable isotope ecology; fisheries ecology; environmental management systems and policy. Through Cefas, he advises national and international bodies on biodiversity, environmental management and fisheries issues.

## Theme 2:

### The marine environment and responses to climate changes



**Thorsten Reusch, Leibniz-Inst. of Mar. Sci., IFM-GEOMAR, Germany**

Thorsten Reusch is professor of marine ecology and chair of research unit *Evolutionary Ecology of Marine Fishes* at IFM-GEOMAR, Kiel. The focus of his research is the ecology of evolution. Any ecological interaction is also a selection pressure. Consequently, if there is heritable variation, evolutionary change will take place. There is now ample evidence that the separation between ecological and evolutionary scale is misleading, in particular among the fishes. Both time scales are commensurate and should be answered within a common framework. Given the predicted environmental changes in the next decades, one focus area will be the evolutionary response of populations to global change, including biological invasions and selective harvesting. Towards this end, both heritable variation within populations, and the distribution of genetic variation across latitudinal gradients needs to be quantified. Such an approach will benefit from an expansion of the evolutionary ecology toolbox. Once selectively relevant polymorphism is identified, predictions on the evolutionary potential of populations become possible.



**Katja Philippart, Royal Netherlands Institute for Sea Research**

Katja is a marine ecologist at Department of Marine Ecology of NIOZ. She earned her PhD in 1994 on the effects of eutrophication on seagrass at the Wageningen University, The Netherlands. Katja's present research focuses on

the underlying mechanisms of long-term dynamics within shallow marine coastal communities, particularly understanding the role of human influences within these ecosystems in regulating primary and secondary producers. She has been coordinating several national and European research programmes in which long-term dynamics of marine ecosystems were studied. In the last 5 years, she has been a member of several national and international scientific and advisory committees. She is the Editor-in-Chief of the *Journal of Sea Research* and leading author of *Climate Change Impacts on the European Marine and Coastal Environment* (ESF-Marine Board, 2007, Strasbourg). Katja coordinates a national project IN PLACE (2009-2013) which includes the setup, maintenance, and exploitation of a coastal monitoring network to study primary production.

### **Theme 3:**

#### **Management of coastal resources – use of Marine Protected Areas**



##### **Espen Moland Olsen, Institute of Marine Research, Norway**

His main research interest is life history responses to natural selection and human-induced selection in aquatic environments. Are contemporary phenotypic changes in harvested populations purely ecological, or do they also involve evolution? For instance, fishing selectively on large and old individuals may lead to demographic erosion leaving mostly small and young fish in the population, which may influence recruitment patterns and harvestable yield. Over generations, selective fishing may also lead to evolutionary changes in fitness-oriented traits like growth and maturation patterns. He is currently investigating how marine reserves may buffer against ecological and evolutionary effects of harvesting in the coastal zone. His background is mainly from the University of Oslo, Norway, where he did a PhD and Post doc.



##### **Einar E. Nielsen, DTU Aqua, Denmark**

Einar Eg Nielsen is professor in Fisheries Genetics at DTU-Aqua in Denmark. For more than 15 years he has worked on identification of genetic population structure in freshwater, anadromous and marine fish and the environmental and ecological drivers responsible for population divergence. More recently his research focus has been on understanding the genomic basis of local adaptation in marine fish in space and time, including DNA analysis of historical archived scale and otolith collections. He has participated in and coordinated many national and international (EU) projects on population structure, micro-evolution at historical time scales, impact of farmed fish on wild fish populations and traceability of fish and fish products. He provides advice to the EU and ICES on management of freshwater, anadromous and marine fish, with particular emphasis on genetic resources and biodiversity.

## **Theme 4: General Marine Biology**

### *Deep-sea stewardship - biodiversity, threats and solutions.*



#### **Lisa Levin, Scripps Institution of Oceanography, USA**

Lisa Levin is Director of Center for Marine Biodiversity & Conservation (CMBC) and Distinguished Professor at the Scripps Institution of Oceanography in La Jolla, California. She is a marine ecologist who studies benthic ecosystems in the deep sea and shallow water. Together with her students she Levin has worked with a broad range of taxa, from microbes and microalgae to invertebrates and fishes. Her recent research has emphasized 3 major themes: (1) the structure, function and vulnerability of continental margin ecosystems, particularly those subject to oxygen and sulfide stress; (2) wetland biotic interactions as they mediate marsh function, invasion and restoration; and (3) larval ecology of coastal marine populations with emphasis on connectivity and response to ocean acidification and deoxygenation. She has participated in over 30 oceanographic expeditions around the world and served as Chief Scientist on 12 of these. Dr. Levin has served as editor in several scientific journals, and has edited 5 special volumes on aspects of deep-sea biodiversity. She has for decades had a central position in societies of science and as a governmental and international adviser.

## **Finale lecture:**

### **Challenges for the Marine Environment for the next decade**



#### **Nils Christian Stenseth, University of Oslo, Norway**

Nils Christian Stenseth is a Research Professor, Core Member, and the Chair of CEES (Centre for Ecological and Evolutionary Synthesis, Univ. of Oslo). In addition, he is a Chief Scientist at the Institute of Marine Research, Norway. His research interests span a broad spectrum of ecological and evolutionary topics, most of which are rooted in population biology. Variations in population densities in time and space - and the underlying demographic processes - have been a main interest. An important example is the interdependent relation between density-dependent and density-independent processes, where the ecological effect of climate is an important example of the latter. He is an ISI highly cited researcher, and he is an elected member of many societies of sciences, and currently the President of the Norwegian Academy of Science and the Letters, DNVA. He also do quite a bit of editorial work, including as Editor-in-Chief of Climate Research.