

S5 MEQ Topic Session Introductions of marine species

Co-sponsored by the International Council for the Exploration of the Sea (ICES)

Session Convenors: William P. Cochlan (U.S.A./PICES), Stephan Gollasch (Germany/ICES) and Yasuwo Fukuyo (Japan/PICES)

Species introductions are among the most prevalent of human activities affecting natural ecosystems. In the marine environment, introductions, including most aquaculture initiatives, have resulted in both positive and negative effects. The transport of invasive species such as phytoplankton, is thought to stem from range extensions associated with fluctuating oceanographic conditions (*e.g.*, El Niño), severe storm events (*e.g.*, typhoons), and human activities (*e.g.*, ballast water). The impact of transport processes on species distributional changes in North Pacific waters is not fully understood. Relative to the terrestrial environment, the study of introductions, and the potential for new species to become invasive, is in its infancy in marine systems. Emerging work includes introduction vectors, life history characteristics of invasive species, ocean conditions responsible for invasions, ecosystem resistance to invasion, and potential for eradication or mitigation of introductions once established. This session will seek to answer three fundamental questions: 1) What is known about different transport mechanisms? 2) What is the magnitude of ecological and economic effects arising from the transport of species? and 3) What steps can be taken to minimize real or potential effects of existent and future invasive species?

Wednesday, October 20, 2004 08:30-17:00

- 08:30-08:40 **Introductory remarks by Session Convenors**
- 08:40-09:10 **Gustaaf M. Hallegraeff** (Invited)
Range extensions and ship ballast water transport of harmful algal bloom species in the Australian region (S5-2022)
- 09:10-09:30 **Shinya Uwai, Wendy Nelson, Luis E. Aguilar-Rosas, Sung Min Boo and Hiroshi Kawai**
Introduced seaweeds - Genetic diversity of introduced and native *Undaria pinnatifida* (S5-2139)
- 09:30-09:50 **Keiji Iwasaki and The Committee for the Preservation of the Natural Environment, The Japanese Association of Benthology**
Range expansion and speed of spread by introduced marine benthos in Japan (S5-2135)
- 09:50-10:10 **Tatyana A. Belan**
Anthropogenic invasion of some benthic species in the coastal areas (S5-1777)
- 10:10-10:30 **Coffee break**
- 10:30-11:00 **Marjorie J. Wonham and Elizaveta Pachepsky** (Invited)
What do temporal trends in invasion records really mean? (S5-1928)
- 11:00-11:30 **Stephan Gollasch** (Invited)
Ballast water - The key vector for aquatic species invasions? (S5-1969)
- 11:30-11:50 **Dan Minchin, Anna Occhipinti, Oliver Floerl and Dario Savini**
Small craft as a vector of exotic species (S5-1795)
- 11:50-12:10 **Yasuwo Fukuyo**
The Ballast Water Convention and its inherent, but inevitable incompleteness for the prevention of biological invasion (S5-2178)

- 12:10-13:50 **Lunch**
- 13:50-14:10 **Jennifer Boehme and Mark Wells**
Ballast water exchange verification using the optical characteristics of dissolved organic matter (S5-2094)
- 14:10-14:30 **Yasuwo Fukuyo, Takeaki Kikuchi, Katsumi Yoshida and Seiji Kino**
Onboard ballast water treatment using the special pipe to terminate aquatic organisms (S5-2163)
- 14:30-14:50 **L. Scott Godwin**
Marine invasive species transported by vessel hull fouling: Potential management approaches (S5-1901)
- 14:50-15:10 **Coffee break**
- 15:10-15:30 **Stephan Gollasch**
ICES and biological invasions - introduction to the work of ICES Working Group on Introductions and Transfers of Marine Organisms and ICES/IOC/IMO Working Group on Ballast and Other Ship Vectors (S5-2191)
- 15:30-17:00 **Discussion and concluding remarks**

Posters

Alexei M. Orlov

Ichthyofaunal exchange between northwestern and northeastern Pacific: Possible directions and mechanisms (S5-1775)