The first Mares conference on Marine Ecosystem Health and Conservation 2014: key messages and outcomes

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The first Mares Conference for Marine Ecosystems Health and Conservation was a successful event bringing together over 150 researchers in Olhão, Portugal from November 17th to 21st 2014.

The conference was opened by Prof. Dr. Hans-Otto Pörtner, whose keynote address focused on a sectoral analysis by the Intergovernmental Panel on Climate Change Fifth Assessment Report (IPCC AR5) on the impacts of climate change on the world's oceans. His keynote speech showed in what ways impacts on the oceans were for the first time also structurally embedded in the procedures and the work of the IPCC Working Group. The effects of climate change on the world's oceans were also well represented in the other scientific sessions of the conference.

The first session on "Future oceans" was opened with a talk by Dr. Frank Melzner who highlighted the problems calcifying invertebrate communities face in the warmer, more acidic and hypoxic coastal oceans of the future. Other presenters dealt with issues relating to changing global diversity patterns, ocean acidification, despeciation in whales, and the loss the genetic diversity in seaweed.

The second session on "Natural resources" was opened by Dr. Rainer Froese, who focused on whether or not the oceans can feed humanity. This talk fittingly introduced the other contributions in the session, which were mainly dealing with fisheries issues and related aspects such as Marine Protected Areas, as well as the problems with proper identifications of species used for specific economic purposes.

"Biodiversity effects" was the scope of the third session and was opened by a talk on oxygenation and marine biodiversity challenges in the 21st Century by Prof. Lisa Levin. Rapid ocean deoxygenation is a process which is currently less investigated but which can have considerable effects on individuals body size, taxonomic composition and distributions, food webs, habitat heterogeneity, community resilience, carbon sequestration, and nutrient cycling. The following presentations in this session focused on other factors having a strong effect on marine biodiversity, ranging from the harvesting of algae and the effect on the related macrofauna communities, to the fragmentation of ecosystems.

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The fourth session addressed “Biological invasions” and focused on this issue from a broad geographical perspective. Dr. Gregory Ruiz discussed biological invasions in North American marine ecosystems and the need for constant monitoring, as well as the use of a dynamic and multi-vector approach. Problems with invasive species in European waters were addressed by other speakers with examples from the Baltic Sea, the North Sea, and the Mediterranean Sea ranging from oysters to seaweeds and zooplankton.

The fifth session on “Ocean Noise” was opened by Prof. Peter Tyack with a talk on the effects of anthropogenic sound on marine mammals. Although ocean noise pollution issues are often linked to marine mammals, the effects of for example pile-driving for marine constructions on fish behaviour, nicely illustrated that ocean noise is an anthropogenic factor with a much broader impact than often expected.

The last session of the first Mares Conference dealt with “Habitat loss” and human use of the marine environment. Dr. Michael Beck focused on this topic with his talk on ‘Building Coastal Resilience for Climate Adaptation and Risk Reduction’. His mainly North American inspired view was nicely supported with examples from European waters. Talks in the session ranged from the use of telemetry as a tool to monitor the effects of human induced changes in the habitat on specific species, to case studies dealing with sea level rise related problems in for example salt-marshes.

The first Mares Conference offered a broad range of oral and poster presentations, as well as digital presentations. The poster and digital object presentations included over 100 contributions.