

ICES ASC 2013 – Summaries of Selected Theme Sessions

Theme Session A – Marine Litter

Theme Session A will look at the harmful effects of artificial waste on oceans and marine environments as well as their respective inhabitants. From the seabed up to the coastline, man-made debris is in danger of accentuating the strain ecosystems are already under from overfishing and other human activity.

Such activity, both accidental and intentional, is the root of marine litter, with most remains coming from land-based enterprises including transportation by rivers, drainage, sewage systems or wind. This poses not only an environmental problem but also an aesthetic, economic and health-related one, and the effects can also extend into aquaculture systems and food chains.

With ICES providing advice to OSPAR, HELCOM, and the EU on the monitoring of marine litter in relation to the eponymous descriptor of Good Environmental Status (GES) under the Marine Strategy Framework Directive (MSFD), presentations and discussions taking place in Session A will be as important as any.

Theme Session B – Climate change and marine resource responses

Reflected by the volume of abstract submissions to the ASC and, more generally, current scientific research, **Theme Session B** – responses of living marine resources to climate change and variability – is proving a particularly hot topic.

Taking into account both anthropogenically-triggered climate change and natural variability – past, contemporary, and future – Session B presentations will cover a range of subtopics and will set about debating questions related to how marine organisms will react or adapt to changes in their surroundings. There is more than one school of scientific thought on how fish stocks and ecosystem components will respond in terms of range shifts, extinctions and recolonizations, and settling on the best course of action is proving divisive. Other challenges in the area range from those faced by fisheries managers and their provision of effective advice to those of ecosystems with high fishery yields.

Amongst other things, Session B will promote the greater need to scrutinize both past and present data on ecosystems that have undergone climate change.

Theme Session D – Ocean Acidification

The amount of carbon dioxide released into the atmosphere as a result of human activity increases year by year. About half of this goes into the atmosphere, enhancing the greenhouse effect, whilst a quarter is sequestered by land-based vegetation and the

other quarter by oceans. The price is a change in sea water chemistry, a process known as *ocean acidification* – and this is at the heart of **Theme Session D**.

Destabilizing the balance of oceanic carbonate chemistry, ocean acidification lowers the capacity organisms such as molluscs and crustaceans have for building their shells from biogenic calcium carbonate and causes the water's pH level to drop. However, there is also plenty of natural temporal pH fluctuation, as shown by time-series and basin-scale measurements and models, to consider.

Differentiating between the drivers that affect ocean acidity – natural and anthropogenic – as well as the extent of their influence is one of just several key points up for examination during Session D.

Theme Session H – Sustainable Harvesting Strategies

Sustainability in fisheries management is a formidable goal for policy makers. It forms an integral part of maximum sustainable yield (MSY), which has become the chosen reference marker for European fisheries management under the Common Fisheries Policy.

With most ICES stocks now managed according to harvest control rules (HCRs), key questions of this session – **Session H** – will include the expansion of the guidelines to include environmental, economic, and social sustainability as well as the further definition of sustainability objectives. In this way, the interface between sustainability and HCRs and an Ecosystem Approach to Fisheries Management (EAFM) holds importance, and this provide a further dimension to session H.

Theme Session N – Pelagic Fishing Complexes in the North Atlantic Ocean

The North Atlantic region is home to many large fish stocks and also highly migratory pelagic species. Changes in their spread, number, productivity, and migratory patterns provide a continuous challenge for sustainable fisheries management and those who study such dynamics and what impacts upon them. With natural and man-made climate change the context, **Theme Session N** will explore pelagic fishing complexes in the North Atlantic Ocean.

With these North Atlantic species supporting valuable fisheries, activities such as mapping range shifts and movements in fish stocks has become crucial. Indeed climate change manifested in both environmental and ecological factors is predicted to facilitate the displacement of fish stocks in a poleward direction, and changes in the spatial and temporal distribution of stocks cause variation in interspecies predation pressure and competition for food.

Additionally, the session will place stress on the need to study interactions between species and stocks as the cornerstone of ecosystem-based fisheries management.

Detailed Theme Session programme is available on the [ICES website](#).