



'Our Blue Planet' Study Day

Saturday 14 September, 10.00 – 16.00, National Oceanography Centre, Henry Charnock Theatre

10.00 – 10.20 Coffee and welcome

10.20 – 10.30 Introduction by Professor Ajit Shenoj, Director of SMMI

10.30 – 11.30 Dr Simon Boxall, 'Myths and mysteries of the oceans: from Noah's flood to the Bermuda Triangle, how science can explain all'

The oceans have provided scientists with many mysteries to solve and many more still to fathom. But people love a legend and there are many stories that stem from the ocean environment. Science can explain all of these, from legends and tales of the Titanic, to explainable disappearances in the Bermuda triangle. The lecture will look at some of the most famous stories and show how science is behind each one.

11.30 – 11.45 Coffee

11.45 – 12.45 Professor Damon Teagle, 'The deep sea drilling programme – exploring our inner planet'.

The ability to recover the information contained in the ocean floors of our planet has revolutionised how we reconstruct the history of life on Earth, continental drift and past climatic conditions. Scientific ocean drilling is arguably the most successful and longest-running, international science collaboration, yielding such information continuously since 1968. The technique has proven plate tectonic theory, and sampled the deep roots of the ocean crust, major tectonic faults, and actively-forming 'black smoker' (deep-sea vent) metal deposits, giving us major insights into the "life-histories" of tectonic plates. Advanced coring techniques have provided high-resolution records of Earth's life, climate and ocean currents on time scales of thousands to tens of millions of years, revealing the major changes our planet has undergone over long periods. Careful sampling approaches have identified the presence of life in unexpected places: ecosystems of these "extremophile" organisms have been found in sediments and volcanic rocks and around 'black smokers'. New platforms now enable drilling in very remote regions (e.g., ice-covered Arctic) and very deep drilling into major tsunami-creating fault zones and potentially below the crust into the Earth's upper mantle.

12.45 – 13.30 Lunch

13.30 – 14.30 Dr Antony Jensen, ‘Fisheries – our regional sustainable food resource?’

Although much of our food today comes from agriculture, we still rely heavily on wild resources when obtaining food from the sea. As human populations increase, and fishing methods become more intensive, sustainability has become increasingly important. Inshore fisheries and their impact on the marine environment have come onto focus in recent years with the government’s push for an increased number of marine Special Areas of Conservation (SACs) within EU legislation and creation of Marine Conservation Zones (MCZs) within national legislation. These are intended to provide “safe havens” for breeding populations of key marine species. The role of the ten English Inshore Fisheries and Conservation Authorities (IFCAs) is to develop management strategies that allow both conservation and ‘fishing’ (in all its forms) to continue. This talk will discuss the impact of fishing techniques on local ecosystems and how IFCAs are responding to the new challenge of conservation feature management.

14.30– 15.30 Prof Robert Marsh, ‘The Oceans and Climate Change’

As the Earth warms globally with rising concentrations of greenhouse gases, the vast majority of extra heat seems to “disappear” into our oceans. This puts a welcome brake on the rate of warming that we experience, postponing the more serious consequences of climate change by several decades. The hydrological cycle is also oceanic in essence, with 85% of UK rainfall evaporated from the Atlantic hours to weeks earlier, but this cycle – and our rainfall - is intensifying with warming. Sea level rise is increasingly linked to melting ice sheets that are highly sensitive to the adjacent oceans. To better grasp the breath-taking extent of these unfolding climate changes, we are therefore striving towards a deeper understanding of the dynamic and powerful oceans. In this talk, I will showcase some of the latest observations and computer simulations of the World Ocean, and reveal how it is changing.

15.30 – 15.45 Closing Comments**15.45 – 16.30 Optional Tour of NOC (please notify if interested)**