



Marine data management: from early explorers to e-infrastructures (Ian McHarg Medal Lecture)

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Ocean observations have been made for as long as Man has been exploring the seas. Early Phoenician and Viking explorers developed extensive knowledge of currents, tides and weather patterns that they shared directly with their peers. Eighteenth century log books from whaling ships and the voyages of explorers, such as Captain Cook, documented sea conditions and weather patterns, and it is these records that are used today to extend oceanographic records back to a time before systematic observing of the ocean began. This historical information is now being used to address the grand challenges being faced by Society in the 21st century in ways that the 18th century seafarers could never have imagined.

Systematic ocean observation and the science of modern oceanography began in the late 19th century with the voyages of HMS Challenger. Since these early scientific cruises ocean observation has become more and more sophisticated. Increasingly diverse types of equipment mounted on different types of platforms are generating huge amounts of data delivered in a variety of formats and conforming to a range of standards and best practice. It is this heterogeneity of marine data that has presented one of the greatest challenges for the modern researcher.

As marine research becomes increasingly international, cross-disciplinary and multiscale, it presents new and more complex challenges for data stewardship. Increasingly large volumes of interoperable data are needed to address fundamental questions such as the assessment of Man's impact on the marine environment or the sustainable exploitation of available marine resources whilst maintaining the good environmental status of the ocean.

This presentation will provide a brief overview of the acquisition and sharing of information about the marine environment from the earliest explorers to the modern day. It will look at some of the challenges faced by today's marine researcher seeking to make use of multidisciplinary and sometimes unfamiliar data, the data manager responsible for its stewardship, and the thousands of organisations and institutions around the world tasked with providing access to the vast volumes of data needed to support this increasingly global approach to marine research.