

Survey highlights ocean research priorities

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Declines in ocean productivity, increases in ocean acidification, and the cumulative effects of multiple stressors on ocean health are among the most pressing issues facing coastal and maritime countries, according to a survey of scientists by a University of York researcher.

All three issues were ranked in the top five [ocean research](#) priorities by oceanographers and marine ecologists from around the globe, in a [survey](#) led by Dr Murray Rudd, from York's Environment Department, and reported in *Frontiers in Marine Science*.

The survey asked 2,197 scientists from 94 countries – who ranged in background from marine geologists to anthropologists - their opinions on what research was needed most to help sustain [ocean health](#).

Dr Rudd said: "The large survey allowed us to bring tremendous expertise to bear on identifying the really important things we need to know to sustain healthy oceans. The survey respondents represented some 36,000 person-years of experience in ocean research.

"I hope that the results of this survey can be used to help target ocean research on [questions](#) that, if answered, would be central to achieving ocean sustainability."

Dr Rudd identified 657 research questions potentially important for informing decisions regarding ocean governance and sustainability. These were distilled to a short list of 67 distinctive research questions that were ranked in an internet survey by scientists.

Other questions ranked as of high importance by respondents included those on methods for measuring greenhouse gas exchange between oceans and the atmosphere, the role of the ocean in storing energy from global warming, and the effects of declines in ocean biodiversity.

Dr Rudd said: "Climate change can affect plankton growth, which forms the basis of the ocean food chain, and increase acidity levels, which make life increasingly difficult for shellfish. When combined with the variety of other ocean stressors, ranging from increasing levels of contaminants to oxygen-depleted dead zones, the potential effects of changes in the ocean loom large for society."

Social scientists who participated in the survey thought that work on how to better communicate science to policy-makers and the public was the most important research priority.

Dr Rudd said: "Despite significant differences between physical and ecological scientists' priorities regarding specific research questions, they shared seven common priorities among their top 10. Social scientists' priorities were, however, much different, highlighting their research focus on managerial solutions to ocean challenges and questions regarding the role of human behaviour and values in attaining ocean sustainability. Therefore, while the results from this survey provide a comprehensive and timely assessment of current [ocean](#) research priorities among research active scientists, they also highlight potential challenges in stimulating cross-disciplinary research."

More information: The paper 'Scientists' perspectives on global ocean research priorities' by Murray Alan Rudd is published in *Frontiers in Marine Science* and is available online at journal.frontiersin.org/Journal/2014.00036/abstract

Provided by University of York

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