

## VIMS professor helps lead international study of ocean value

(March 21, 2012) Professor Robert Diaz of the Virginia Institute of Marine Science is a co-editor of “Valuing the Ocean” a major new study by an international team of scientists and economists that attempts to measure the ocean’s monetary value and to tally the costs and savings associated with human decisions affecting ocean health.

The study estimates that if human impacts on the ocean continue unabated, declines in ocean health and services will cost the global economy \$428 billion per year by 2050, and \$1.979 trillion per year by 2100. Alternatively, steps to reduce these impacts could save more than a trillion dollars per year by 2100, reducing the cost of human impacts to \$612 billion.

Diaz says the study report “describes the state of the science for 6 threats to the global ocean, what can happen if all these threats act together, and the economic consequences of taking or not taking action.” He notes that the study is unique in stressing the interactions between and among multiple threats, which include acidification, low-oxygen “dead zones,” overfishing, pollution, sea-level rise, and warming.

In addition to co-editing the 300-page study, Diaz is a lead author on the chapters that monetize the impacts of dead zones and the combined effects of multiple stressors. Research by Diaz and colleagues shows that over-fertilization of ocean waters has led to a sharp increase in the number, size, and duration of low-oxygen dead zones around the world over the last 50 years, which could lead to major impacts on fisheries. The study estimates an annual decrease in global fisheries value of \$88 billion by 2050, and \$343 billion by 2100, unless steps are taken to reduce nutrient inputs and global warming. Warmer water holds less oxygen, thereby intensifying dead zones.

A release from the Stockholm Environment Institute—the agency that coordinated the international study—states “The ocean is the victim of a massive market failure. The true worth of its ecosystems, services, and functions is persistently ignored by policy makers and largely excluded from wider economic and development strategies... This collaborative book presents an unequivocal argument in favor of placing the ocean at the centre of plans to build a sustainable future, while for the first time calculating the actual monetary value of the critical ocean services that we stand to lose.”

The study’s positive message is that local actions can make a global difference. “Thanks to close links between globally and locally acting stressors,” says SEI, “coordinated small-scale interventions can aggregate upwards to have major significance.”

Diaz and other report editors and authors will present the findings of their study during the “Planet Under Pressure” conference in London on Monday, March 26th. Convened by a number of international scientific bodies—the International Council for Science, DIVERSITAS, Earth System Science Partnership, International Geosphere-Biosphere Programme, International Human Dimensions Programme, and the World Climate



VIMS professor Robert Diaz.

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Research Programme—the “PUP” conference is a key platform for the international science community to inform delegates to the United Nations’ upcoming Conference on Sustainable Development.

The U.N. Conference—which will take place in Brazil on 20-22 June 2012—will mark the 20th anniversary of the 1992 U.N. Conference on Environment and Development in Rio de Janeiro, and the 10th anniversary of the 2002 World Summit on Sustainable Development in Johannesburg. During the June “URio+20 summit,” heads of state and government from around the world will join together to “secure renewed political commitment for sustainable development, assess the progress to date and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development, and address new and emerging challenges.”