**A Unified Approach Toward Sustainability in a Changing World**

Global climate change is affecting marine and estuarine ecosystems in ways that impact public health and well being and challenge the goals of sustainability at all scales. Climate change exacerbates the effects of natural and human activities further threatening sustainable use of ecosystem goods and services valued by society (food production, water, resilience to coastal inundation, regulation of green house gasses and temperature, biodiversity, etc.). These realities have led the global community of nations to endorse the use of adaptive, integrated ecosystem-based approaches to protecting human health, resource management, environmental protection, integrated coastal management, marine spatial planning and conservation. Design and implementation of such approaches depend on the delivery and use of frequently updated indicators and assessments of changes in ecosystem states and of current and likely future impacts of such changes on ecosystem goods and services (including socio-economic aspects). A portrayed in the figure below, integrated ocean governance, the evolution of effective ocean policies, and the implementation of ecosystem-based approaches require (1) consensus on a core set of scientifically credible, quantitative, robust, cost-effective and validated ecological indicators that enable (2) regular, comparative assessments of ecosystem health on regional to global scales, (3) sustained observations and modeling needed to compute and assess indicators routinely at rates most useful to decision-makers, and (4) continued feedback and iteration of this cycle of interdependent activities to improve performance. Key pieces of this framework are being addressed by important initiatives including the following:

Cooperation Across the Atlantic for Marine Governance Integration (CALAMAR), the UN Regular Process of marine ecosystem assessments, Ocean Health Index (OHI) project, A Framework to Assess Ecosystem Health in Support of Ecosystem-Based Management of Coastal Ecosystems (FAEH), Transboundary Water Assessment Project (TWAP), A Framework to Assess Ecosystem Health in Support of Ecosystem-Based Management of Coastal-Marine Systems (NCEAS), Indicators of Marine Ecosystem States and associated observing system requirements (IMES), and the evolving Global Ocean Observing System (GOOS).



While each of these initiatives is important in their own right, sustainable use under changing environmental conditions depends on efficiently linking ocean governance, formulation of policy, and assessments to quantitative indicators computed from sustained observations and modeling. Absent such “cross pollination”, each initiative runs the risk of concluding without leaving a legacy of sustained implementation. Thus, we believe that collaboration will provide benefits to each of these and related initiatives and add value to the enterprise as a whole. To this end, a two-day conference is proposed to bring together representatives from these hitherto independent initiatives to facilitate sustained and coordinated evolution of this framework for sustainability in a changing world.