

Innovations in Environmental Synthesis, Communication, Reporting and Governance

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The coastal zones of the world provide some of the most acute environmental challenges on the planet. The proliferation of coastal megacities and coastal population pressures impact coastal ecosystems, leading to degradation of coastal ecosystems like salt marshes, mangrove forests, seagrass meadows and coral reefs. Iconic regions like Chesapeake Bay and the Great Barrier Reef are threatened by various human pressures, including accelerated climate change. These challenges promote a search for innovations in environmental synthesis, communication, reporting and governance.

Environmental synthesis activities have been enhanced with synthesis centers, which convene working groups that create, analyze and interpret global data sets and write high profile synthesis papers for scientific journals. This synthesis process will need to evolve better communication to resource managers and policy makers.

Science communication innovations include the development of online conceptual diagram drawing programs, the evolution of design/layout communication products for print and ereader formats, and video seminars and training content.

Environmental reporting innovations include environmental report cards (e.g., Chesapeake Bay, Great Barrier Reef, Southeast Queensland), which have evolved to include citizen science monitoring, management response monitoring, and public health monitoring.

Governance innovation is exemplified by regional resource management authorities (e.g., Great Barrier Marine Park Authority; Chesapeake Bay Program) and by a rigorous evidence-based approach to decision-making (e.g., BayStat).

These innovations in environmental synthesis, communication, reporting and governance will need to be tested and applied more widely across the globe so that scientists can solve, not just study, environmental problems.

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