THE SKIMMER ON MARINE ECOSYSTEMS AND MANAGEMENT

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Tundi's Take: Science in the Service of EBM

By Tundi Agardy, MEAM Contributing Editor (tundiagardy@earthlink.net)

Implicit in the EBM construct is the central role of science. By building management from a foundation of solid science, we presume that ecosystems and the resources and services they provide can be protected or restored in predictable ways, following a set path to known outcomes. And it is not only natural (ecological) sciences that are integral to that foundation: social sciences are critical as well.

Science is undeniably important in planning and executing ecosystem-based marine and coastal management. Science informs us of the status of ecosystems and resources, the threats ecosystems face (i.e., the problems that management must address), the drivers behind those pressures or threats, the changing context - both environmental and social - in which management must take place, and the extent to which management is having its intended effect.

But in these endeavors, science is a tool used to allow managers/decision-makers to evaluate trade-offs and choices in order to make informed decisions. Science - or rather scientists - cannot make those decisions for society. Such societal decisions can be guided, but should not be led, by science.

We have seen examples of science-led processes that have resulted in management failures, especially when planning was perceived as being in the exclusive domain of scientists. Perception is important. Thus, when the perception is that science is in the driver's seat - instead of science being harnessed - management can hit rocky roads.

In addition, the inexorable uncertainty that exists in the marine sciences (especially ecology) has presented problems to the effective harnessing of science for management. Sometimes groups seize upon these uncertainties to oppose management of ocean space and resources, creating an excuse to do nothing...or, at the very least, to not make difficult decisions regarding allowable uses. Finally, while there is increasing consensus that EBM should rest on solid science, the science component seems front-loaded: the need for continued science after implementation of management measures is not as heavily stressed as the science needed to make the initial management/policy choices.

There are a few key elements common to the successful use of science in EBM:

- Be careful that appraisals of available scientific information do not present excuses for not taking management measures. In most instances, we know enough to do better management.
- Embrace uncertainty by making it apparent. But stress that since decisions in all other walks of life are made in the presence of uncertainty without too much problem, marine management should not have to be held to a higher standard of certainty.
- Ensure that the science used to support planning and management is defensible - i.e., transparent, replicable, and peer-reviewed.
- Be aware that scientific input should not stop when management is implemented. The best EBM is adaptive management that utilizes the information flowing from management measures to buttress scientific understanding of ecosystems, their continually changing status, and the efficacy of management.
- Harness science effectively. Do not create Frankenstein situations in which science drives decisions. Instead, decisions must be made collectively by society, with all its varying value systems.