

Book review

A synopsis of the book *Striking a balance: improving stewardship of marine areas*

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Sustainable use of the planet will require a more robust regulatory and management framework for marine areas as advances in offshore technology and changes in market conditions lead to an increase in coastal populations and marine recreation and tourism. Although each area of the world presents unique problems, many principles of stewardship, which can appropriately modified, will serve well anywhere on the planet. The purpose of this brief synopsis is to share these principles of stewardship with colleagues in China.

This volume (*Striking a balance: improving stewardship of marine areas*) notes: “ In addition to the governance problems created by multiple nonmarket uses of marine resources and maintaining access to them, existing systems have two fundamental problems—first, fragmentation among federal and local agencies and second, not enough participation and coordination of interests at the local level” (p. 4). Although this book focuses on marine ecosystems associated with the United States coastline (such as the Gulf of maine/Massachusetts Bay, the Florida Keys National Marine Sanctuary/Florida Bay ecosystem, and the Southern California coast), the issues, the problems, and strategies should be, with minor adjustments, fully applicable anywhere in the world. The following general elements of the framework for improved governance and management of marine areas are given as recommendations (p. 5) [Comments given in brackets are those of the author].

- There must be a clear statement of goals, especially where different entities must be brought together in a cooperative management effort.
- The geographic (or ecological) area to be managed needs to be carefully delineated.
- Mechanisms need to be designed for involving all relevant stakeholders in the governance process. [Stateholders is a term used in the United States to describe a group with an interest in the outcome of the management strategy].
- In most saturations, the process should be initiated as a joint state-federal effort [for the purposes of this discussion, one should add that it would frequently require a multinational effort as well].
- Systems should foster innovative responses to management needs and opportunities for resource utilization.
- Processes should facilitate the incorporation of scientific information into all aspects of decision making.
- Success should be measured by a clear system of monitoring and evaluation. [Monitoring is surveillance undertaken to ensure that previously established quality control conditions are being met.]

The system recommended in this tool has four basic components.

- Creation of a National Marine Council to improve coordination among federal agencies,

monitor the marine environment, facilitate regional solutions to marine problems, and facilitate interagency problem solving[again, for the purposes of this discussion, multinational cooperation will almost certainly be a feature of most marine ecosystem stewardship].

- Creation of regional marine councils where they are needed to provide innovative approaches to complex marine governance issues at the operational level.
- Enhancement of the ability of individual federal programs to succeed in their missions [for the purposes of this discussion, multinational programs should be substituted for federal programs in many, if not most, cases].
- Adoption of management tools that would increase the effectiveness of regional councils and individual agencies.

Arguably, the most important portion of the book is the section that discusses the principles for marine area governance and management (pp. 15—16). A number of principles emerged from particular case studies and other examples of management. The modified principles became the following performance standards for assessing successful marine area governance.

Sustainability. Sustainable use of the marine environment and resources requires that the needs of the present generation not compromise the needs of future generations. [It is noteworthy that the term sustainable use was used rather than the term sustainable development because sustainable use definitely implies the existence of finite limitations to the use of any natural resource. The methodologies and technologies for achieving sustainable use are in the early developmental stages, but the principle of enlightened use is an important and, arguably, pivotal guideline.]

Regional ecosystem perspective. Governance system should be based on an understanding of the natural ecosystem. Strict adherence to political or jurisdictional boundaries can hamper effective governance where events, issues, and natural processes cross jurisdictional boundaries. The ecological region should include the adjacent terrestrial ecosystems, as necessary to ensure effective resource management and governance. [The important feature here is that monitoring well beyond the limits of the system being managed is essential because of the very definite(often crucial) role that adjacent ecosystems have in ecosystem health.]

Global imperative. Although good regional governance is essential for good management, global issues, such as global climate change, require major policy direction on the national and international level. The decision to address these critical issues cannot be made at the regional level although innovative measures for addressing them may be developed and implemented there. [One pressing need is to increase the temporal and spatial dimensions of any governance program, as well as increasing the detail of information about key interacting components.]

Adaptive management. The system should be able to accommodate changes in scientific understanding and advances in technology and to recognize that social values can shift the fundamental requirements and constraints of governance. Management should be viewed as a learning experience of approaching future problems.

Scientific validity, including risk assessment. Governance decision and decision-making processes should be based on biological, physical, chemical, and ecological information, as well as cultural and social norms. Governance should include an assessment of the potential risks of action and inaction. [Although not explicitly stated here, risk assessment or hazard evaluation is a probabilistic determination requiring scientific evidence. The precautionary principle recommends that, if consequences are likely to be severe, precautionary action is justified even when there is high uncertainty about the outcome.]

Conflict resolution. The governance system should provide mechanisms for resolving conflicts that are fair and that reduce the delays associated with disputes. [Delay almost always increases the cost of remedial action.]

Creativity and innovation. Governance system should foster creativity and innovation by government officials and other affected parties. This means that measured first-taking should be rewarded and that new approaches to old problems should not be rejected because of existing regulations or government structures. [Ecosystems are dynamic, not static; management of damaged ecosystems must be dynamic as well. As a consequence, stewardship must adjust to natural changes, which are often continuous, and to changes in ecological trajectories caused by episodic events such as unusual weather.]

Economic efficiency. The goal of governance should be to increase the total social value derived from marine resources. This requires giving appropriate weight to nonmarket resource values and services as well as commercial values. [The important feature is that consideration must be given to nonmarket value, which are not recognized by a number of traditional economists.]

Equity and transparency. The governing process and decisions for allocating benefits and costs should conform to accepted norms of equity. The governing process should establish "a level playing fields" (a term used in the United States to connote equity and fairness) for competing stakeholders and users, provided that equity also extends to future generations. Transparency to principle that everyone affected should understand how and under what conditions they can participate in the decision-making process. [Meeting this principle will require a level of environmental and/or ecological literacy far higher than the general public has today in most countries.]

Integrated decision-making. Governance structures should bring together the concerns of various agencies and stakeholders to encourage decisions that address ecological, social, economic, and political problems.

Timeliness. Governance systems should operate with sufficient speed to address threats before they become crises and to meet schedules mutually agreed upon by the participants. [The concept of the precautionary principle has been accepted by the United Nations and many governments in Europe, although it has not been widely implemented anywhere. On some issues (such as reduction of greenhouse gases), the United States has been conspicuously reluctant to meet the goals agreed upon by a substantial portion of the international community of nations, despite being the largest producer of greenhouse gases. Timeliness is an extremely important principle for marine area governance and management, as well as atmospheric gas balance management, which are closely interlocking problems. The unwillingness to act before crisis develops is arguably the most crucial of these issues and the most intractable.]

Accountability. Authorities and structures for governance and management need to be clearly defined so that it is clear who is responsible for particular tasks and who must change policies or actions for the adaptive management process to be effective. [In view of the high degrees of uncertainty about changes in large systems, such as marine systems, and the fact that they are not amenable to laboratory experiments to the same degree that smaller systems are, determining accountability will be almost as intractable a problem as timeliness. The problems resulting from long-term hazardous wastes storage, which are clearly a danger to human health and the environment, show how difficult the determination of accountability will be. Ample evidence suggests that for the United States judicial system at least, most of the money allocated for hazardous waste cleanup went into generally unsuccessful determination of accountability.]

Bacon (1996) notes several trends that suggest that pressures on marine areas are intensifying and that severe consequences for people and the marine environment will result unless there are changes in the management regime. Three of the most important of these trends are: the increasing power of humans to affect the marine environment through both mechanical means (fish harvesting, dredging) and chemical means (contamination by chemical substances, including petroleum and endocrine receptors.); global climate changes and their effects on sea level, the intensity and frequency of storms, rainfall distribution, and recreation; the growth of coastal populations.

There have been estimates of the value of recreational uses of the marine resource, including recreation, by Smith and Kaoru(1990) and Walsh *et al.* (1992). However, no database has been developed showing how the economic value of marine resources and resource services has changed over time. Similarly, it is extremely difficult to assess changes in ecosystem integrity because of insufficient data, but available information suggests that trends are negative in terms of loss of wetlands(National Research Council, 1995).

References:

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