doi:10.1017/S0954102013000709

Guest Editorial

Could Ecosystem Assessment improve the protection of Antarctic ecosystems?

John Muir's century-old observation about the interconnectedness of nature "When we try to pick out anything by itself, we find it hitched to everything else in the Universe." has important implications for managing human activities. The diverse benefits that people want and need from ecosystems are not always mutually compatible, and a decision to reap one benefit from nature can impact the availability or quality of others. The human activities that affect ecosystems are also diverse, and the responsibility for managing them is devolved to multiple organizations. These organizations are constrained by their individual remits and the spatial scales at which they operate. Yet the need to manage the wider consequences of decisions made within each organization implies the additional need to coordinate these decisions across organizations. Critically, this requires a standardized form of communication so that these organizations, and those whose interests they serve, can understand each others' objectives and the values they place on particular benefits.

The Antarctic Treaty System (ATS) has played a leading role in developing ecosystem management that acknowledges interconnectedness. The Protocol on Environmental Protection recognizes the intrinsic value of Antarctica beyond the financial value of its exploitable resources, while the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) charges fishery managers with maintaining ecosystem health and resilience. The ATS has some advantages compared to the complex mosaics of governance systems that exist in more populated parts of the world. Firstly, the Antarctic Treaty operates at the scale of a whole continent and the CCAMLR extends this to include a whole ocean. The ATS therefore encompass entire ecosystems. Secondly, there are relatively few activities that need to be managed - including fishing, shipping and other transport, and the various activities associated with scientific presence. However, the ATS has a very diverse group of constituents who must reach consensus in order to make decisions. These constituents are national governments who, in turn, have diverse relationships with their own constituents, NGOs and industries. Furthermore, the set of signatory governments, and the government departments responsible, varies between the instruments of the ATS.

Better understanding of the benefits that people obtain from the Antarctic, and improved coordination and communication, could allow the ATS to deal more effectively with future challenges such as the increasing pressure from climate change and a growing global population. This suggestion is not novel, and it is often presented in terms of an increasingly complex lexicon of potential tools: Ecosystem Services, Ecosystem Assessment, Ecosystem Services Valuation, State of the Environment Reporting, Ecosystem-Based Management and so on. But what does this really mean and are these tools of any actual use? Daniel Pauly summed up the concerns of many about this when observing that the term "ecosystem-based fisheries management is bandied about as if people know what it is."

The specific terminology is less important than two basic principles. Firstly, every benefit derived from nature impacts the availability of other benefits now and in the future. Secondly, a shared understanding of these benefits and their value is a vital step towards coordinated decision-making that appropriately recognizes the trade-offs between benefits while achieving the objectives of the ATS. Ecosystem Assessment is now standard practice for much of the world. However, the Antarctic has to date been under-represented in global and sub-global Ecosystem Assessments. Adopting an Ecosystem Assessment approach might therefore help to achieve one of the implicit objectives of the ATS institutions: to ensure that the value of the Antarctic is appropriately recognized at the global scale and its contribution adequately recognized in decision-making.

Simeon Hill & Susie Grant