

# Regional Approaches to Planning for Protected Areas and Conservation

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## Abstract

*The perceived roles of protected areas have evolved over time, and now include a central role in conservation of biodiversity, enhancing quality of human life and playing a key role in sustainability. While the potential contributions of protected areas to society are increasingly recognized, it has also been recognized that setting aside individual parks, as has been the traditional approach, is limited for a number of reasons. In brief, protected areas are often too small, too isolated and too fragmented to protect the values for which they were originally designated. New approaches to planning are required if protected areas are to fulfill their potential. This paper will provide an overview of a number of bodies of knowledge that offer insight into why and how we should be planning for protected areas specifically over more regional scales, to complement planning for individual parks. Lessons from fields such as the ecological sciences, regional and bioregional planning, common property theory and ecosystem management will be briefly introduced and preliminary criteria for regional approaches to conservation planning will be discussed. Potential criteria include: defining the region based on both ecological and human factors; determining the hierarchical context of conservation initiatives; careful attention to developing appropriate goals, both substantive and procedural; designing based on ecological principles, using both ecological and traditional knowledge, and based on a precautionary principle; understanding the social, economic and cultural context of the region; working in a participative planning framework; emphasizing learning; and supporting and encouraging alternative property regimes to enhance conservation practices.*

## Introduction

Work reported on in this paper began with a general interest in planning for conservation and protected areas, and a desire to explore recent understandings of the need to plan, manage and make decisions for conservation and protected areas over broader, regional scales, and in the planning approaches or tools that might be useful for balancing ecology and community. In the sense used here, conservation refers to developing an appropriate balance of different types of land and water use, ranging from strict preservation, to areas more heavily used for human settlements and resource exploitation (Nelson 1987). Protected areas of different types, with varying degrees of protection, manipulation and use, all have a role in promoting conservation goals, such as biodiversity and ecological integrity and sustainability more generally (McNeely 1992, Nelson and Serafin 1997).

The context for parks and protected areas has changed over the past several decades. The perceived role of protected areas has expanded over time, from originally being primarily focused on recreation and protection of scenic areas from

resource exploitation, to now being seen as vital to protecting biodiversity and enhancing the quality of human life (Nelson and Serafin 1997).

There has been a growing recognition that, although parks and protected areas are a key element of conservation strategies, they are not the only one; surrounding regions must also be considered in planning and management. In other words, there is a need to think beyond the boundaries of individual protected areas. In terms of protected areas, the biodiversity crisis and growing recognition of the limitations of most parks to protect ecological values, have led to the need to re-think how we approach planning for conservation (Noss and Cooperrider 1994, Nelson and Serafin 1997). More generally, there has been a recognition that changes in resource management are needed to deal with current awareness of the global nature of environmental problems (e.g. climate change) and the failure of past planning and management approaches. In reviewing a number of bodies of literature a common theme that emerged was that there is a need for major changes in planning and management if we are to seriously address goals such as sustainability as well as biodiversity conservation.

## **Literature Review**

A number of bodies of literature were reviewed in order to: (1) develop a greater understanding of why planning for conservation and protected areas should be concerned with regional scales; (2) develop some preliminary ideas on directions for planning for conservation and protected areas in a regional context; and (3) determine possible future research needs. Key points from each of the bodies of literature reviewed are outlined below. Other bodies of knowledge are also relevant here, for example policy analysis and political economy, however they were not included in this stage of research.

### ***Ecological Sciences***

Beginning in the 1960s, island biogeography was critical in turning attention to relatively neglected topics, such as reserve size, design, minimum viable population size and patch dynamics (Shafer 1990). Building partly on these ideas, landscape ecology and conservation biology continue to provide valuable insights into approaches to conserving biodiversity. Current understanding include the following (Meffe and Carroll 1997, Noss and Cooperrider 1994):

- well-designed systems of protected areas are vital to protect biodiversity over the long term; these systems include core protected areas, buffer zones and areas of linkage or connectivity;
- surrounding areas—not just core protected areas—must be considered in planning and management; in other words, the context of a protected area, not just its content, is important; and
- upwards of 25 to 75 percent of any given area may require some degree of protection if biodiversity is to be protected over the long term.

Models that incorporate these themes include biosphere reserves, multiple use modules (MUMs), reserve networks and greater park ecosystems.

### ***Regional Planning & Bioregional Planning***

Regional planning has a long history dating back at least to mid-19<sup>th</sup> century in Europe and North America (Hodge 1998, Weaver 1984). Regional approaches are

often seen as necessary to address problems which cause impacts beyond their source. A key contribution of regional planning was the introduction, by the Regional Planning Association of America (1923-1933) and members such as Mumford and MacKaye, of the idea of wilderness as an essential element of the regional mosaic (Weaver 1984).

Bioregionalism and bioregional planning are now seen as potential starting points for revitalizing regional planning, as well as a way to develop regional governance and more collaborative approaches to planning and decision making for sustainability and conservation (Hodge 1998). In bioregional planning, the human-nature relationship is key, as is balancing ecological and socio-economic factors in decision making (Miller 1996). Adopting ideas of bioregional planning force a re-alignment of the central concern of planning from the conventional focus on land use and economics to ecology and community (Hodge 1998).

### ***Ecological Economics***

The goal of ecological economics is to develop greater understanding of the linkages between ecological and economic systems and to use this understanding to develop effective policies for sustainability. In selecting a stock of "natural capital" to pass along to future generations and to maintain sustainability, ecological economics thought emphasizes the need to protect complete ecosystems with ecological and evolutionary processes intact (Costanza et al. 1997).

### ***Participative Planning***

Participative planning ideas developed partly out of perceived weaknesses in more traditional rational or top down planning approaches which tend to emphasize expert decision making. It has been suggested that participative approaches are needed when planning seeks to address complex issues, such as sustainability and biodiversity conservation, which may require changes in human attitudes and behaviors (Tomalty et al. 1994). Changing societal values regarding decision making are also resulting in demands for more participatory or open forms of planning (Day et al. 1998).

There are many benefits to practicing participative planning such as: more holistic understanding of issues; reduced conflict; integration of diverse values, knowledge and information; enhanced public education; and building trust, satisfaction and support for decisions. Obstacles also exist, and include: time and resource intensity of participative approaches; issues of governance, process design and management; ensuring complete stakeholder involvement; and controlling power distribution (Day et al. 1998).

### ***Common Property and Stewardship***

Common property theory examines property rights regimes and how these may be used for efficient use and management of the natural environment and resources, and the social systems and mechanisms used to manage common resources. Recent suggestions on useful mechanisms include the following (Folke et al. 1998):

- using management practices based on local ecological knowledge;
- designing management systems that 'flow with nature';
- developing local ecological knowledge;

- enhancing social mechanisms for building resilience;
- promoting condition for self-organization and institutional learning;
- re-discovering adaptive management; and
- developing values consistent with resilient and sustainable social-ecological systems.

Stewardship—efforts to create, nurture and enable responsibility in landowners and resource users to manage and protect land and natural resources—can be useful in complementing and supporting traditional protected areas, extending conservation activities outside of protected areas. Stewardship techniques range from education, written and verbal agreements and transfer of property rights to conservation easements and acquisition (Mitchell and Brown 1996).

### ***Ecosystem Management***

Ecosystem management is an holistic approach to planning and management (Grumbine 1994). It developed partly due to the perceived failure of past approaches to balance environmental conservation and socio-economic concerns. There are many definitions of ecosystem management. Common elements include (Meffe and Carroll 1996): emphasis on large scale, system wide perspectives; focus on composition and processes of ecosystems and their complexity; recognize the need for interdisciplinary approaches and integration among multiple scales of concern; and long term sustainability is the implicit if not explicit goal of management. In short, ecosystem management is a process of managing and understanding the interaction of the biophysical and socio-economic environments within regional or larger systems (Slocombe 1998), and as such can provide new opportunities to describe, understand and integrate humans and nature (Stankey 1994).

Obstacles to adopting ecosystem management approaches include (Meffe and Carroll 1997, Slocombe 1998): difficulty in defining management units; the interdisciplinary nature of ecosystem management; creating appropriate planning and management frameworks; defining appropriate goals and objectives; and the need for institutional change to overcome historic competition and conflicting mandates.

## **Directions for Regional Planning for Conservation and Protected Areas**

This section outlines some preliminary thought on directions or criteria that appear to be important for developing a regional plan or initiative for conservation. They tend towards an ideal, however it is hoped that they provide some food for thought for those working to develop such regional (or bioregional) conservation initiatives.

### ***Defining the Region***

The region—or bioregion—should preferably be defined based on natural features such as watersheds. It is important to also incorporate human perceptions and factors in defining the bioregion. In some cases, it may be most appropriate to define the region based on human factors such as political boundaries. Boundaries should be flexible and adaptable, to accommodate new information and understanding and respond to changing issues and concerns.

### ***Determining the Hierarchical Context of the Planning Exercise and Region***

There is considerable discussion and no doubt confusion about what is the best scale for planning, and over the meaning of "region" in regional planning and "ecosystem" in ecosystem management. A key lesson is that it is less important to determine the one correct scale for planning and management concern, and far more important to be explicitly aware of the hierarchical context of the planning region. For example, what are the larger and smaller spatial contexts in which the region is placed? What approaches or planning exercises are occurring at the various scales, both spatial and temporal? All regional plans should be as compatible as possible with those at different scales, and certainly not contradictory. For example, goals developed at one scale should not preclude the fulfillment of goals developed for a larger or smaller scale. Protected area systems developed at one scale should link into large scale systems, enhancing and complementing them.

### ***Developing Goals***

The goals should be both substantive and procedural (Slocombe 1998). Goals should be interdisciplinary, and should be part of a hierarchy of goals, objectives and criteria. General goals such as "biodiversity" or "sustainability" should be complemented by more specific goals reflective of the particular region.

### ***Designing with Nature Based on Ecological Principles***

Ecological information used should include both scientific and local or traditional knowledge. Where data is lacking (or the cost of acquisition is prohibitive) or uncertainty abounds, a flexible and precautionary approach should be adopted.

A key element in bioregional conservation plans should be the development of a reserve system, based on ecological criteria. This would include core protected areas, buffer zones and connectivity or linkages. A land use classification system would be a central component of the plan, with categories ranging from preservation to areas for built environments or for restoration. Implementing and refining the reserve network "on the ground" should be an exercise both in ecological science and incorporating socio-economic and cultural concerns and factors. Such plans would by necessity be long term, i.e. to allow time for re-naturalization or restoration of potential linkage areas.

### ***Developing Understanding of the Social, Economic and Cultural Context***

This includes the values, concerns, issues and needs of local communities, as well as understanding of the institutions and forms of governance, both formal and informal, in the region. For example, what are the policies and agencies/levels of government involved? Who are the key actors in the region? What is the economic base of the community(ies)?

### ***Working within a Collaborative, Consensus-building, Shared Decision Making Framework***

The full variety of stakeholders should be involved throughout the planning process. The focus on participative planning is useful for a number of reasons, and is especially useful to address issues that are controversial and complex, or where conflict prevails. In less confrontational circumstances, different planning approaches (which are less time and resource intensive) may be useful.

### ***Emphasizing Learning***

Several different types of learning should be included. Lee (1993) spoke of learning as a key to sustainability—learning about the relationship between humans and nature and between people, and learning from experimentation in policy and action. Learning is also important in the sense of developing greater understanding of both the ecological and socio-economic and cultural contexts, and how to work within an inter- or trans-disciplinary environment. Learning is not just important at the level of government or agency policy and action, but also learning about informal actions, such as those that might develop as common property regimes or local stewardship initiatives. Public education would be included under this principle.

### ***Recognizing the Important Roles of Alternative Property Regimes***

An understanding of the types of common property regimes and stewardship arrangements in the region is necessary. It is also important to understand the potential roles of the different types and combinations of property regimes (public, private and communal) in the region. How can each work best towards fulfilling the regional goals? There will be cases where it may be best to have public acquisition and control of a key area, but there are also likely to be instances where it is possible or advisable to embrace a common property regime or stewardship approach. In these instances, it is important to understand how these approaches can be fostered, supported and enhanced.

### **Concluding Remarks**

In summary, several key points deserve to be reiterated. First, there is a critical need to emphasize developing, promoting and enhancing the nature-human relationship. In this regard, communication is critical. Participative planning approaches can greatly help with this. Very important here is for all parties, including government agencies that may be initiating these planning initiatives, to realize that the process will require large amounts of time, money and other resources. Growing experience in participative decision making for conservation and resources management are showing that the time and effort does pay by resulting in more broadly acceptable decision and reduced conflict, which might otherwise serve only to delay much needed action.

Second, socio-economic and ecological factors are both crucial to developing socially sustainability plans. Anthropocentric approaches to conservation planning, such as single-species management and emphasis on sustained yield, have not worked. The solution is not to turn to biocentric-oriented approaches which emphasize only ecological factors. These are also likely to fail because they do not take adequate notice of the very real needs and concerns of communities living in and near important ecological areas. Attempts to set aside large, highly protected areas such as national parks is becoming increasingly difficult; new approaches are needed. In eastern regions of North America, most land is privately owned making establishment of large publicly protected areas, such as national parks or wilderness areas even more problematic—different models for conservation will have to be used. The same holds true in highly populated regions, such as southern Ontario. Especially in areas such as these, the best chance for long term ecologically and socially sustainable conservation approaches will be those that some-

how manage to address both human needs and desires, and the ecological realities of the region, for example habitat requirements of native species. This is not an easy task, but it is a necessary one.

Third, the best current direction for thought and action in the field of conservation planning seems to be one that combines bioregional approaches, with ecosystem management and civics-oriented approaches.

Finally, the past few decades have witnessed major changes in understanding in regards to environmental management and conservation. One result is the need to rethink some of the fundamental bases upon which we plan for conservation. It is no longer sufficient to think in terms of representativeness and individual units such as provincial or national parks. This has been recognized, for example with the development of greater park ecosystem or ecosystem conservation plans for Canadian National Parks. More work is needed in this area to improve processes and plans (Nelson et al. 1999). There is a need for other protected areas, such as provincial parks to adopt ecosystem conservation planning, with much of the foregoing discussion in mind (i.e. the need to incorporate both socio-economic and ecological concerns). There is also a need to begin to move further beyond greater park ecosystem thinking, which examines the local regional context of an individual unit, and to look beyond into the larger regional context, linking together protected areas and their greater ecosystems into large bioregional planning units, for example as is being done in the Yellowstone to Yukon initiative. Over the very long term, even these bioregional units should be linked to form broad continental-scale conservation plans.

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