2. Protected areas, biodiversity and conservation

2.1 A short history of protected areas

Protected areas are a cultural artefact, and have a long history. For example, some historians claim that areas were specifically set aside in India for the protection of natural resources over two millennia ago (Holdgate, 1999). In Europe, some areas were protected as hunting grounds for the rich and powerful nearly 1,000 years ago. Moreover, the idea of protection of special places is universal: it occurs among the traditions of communities in the Pacific (“tapu” areas) and parts of Africa (sacred groves), for example.

While many societies set aside special areas for cultural and resource uses, protected areas were first set aside by kings and other national rulers in Europe early in the Renaissance, typically as royal hunting reserves. Slowly these sites became open for public use, providing the basis for community involvement and tourism. The English poet, William Wordsworth, wrote in 1810 of his vision of the Lake District as “a sort of national property”. And in 1832, the American poet, explorer, and artist George Catlin pointed to the need for “…a nation’s park, containing man and beast, in all the wild and freshness of their nature’s beauty”. Catlin was responding to the destruction of aboriginal peoples and cultures in the rapidly developing eastern part of this expanding...
country; in contrast, he perceived a harmony between the native peoples and their environment on the Great Plains. In 1864, with the Yosemite Grant, the US Congress gave a small but significant part of the present Yosemite National Park to the State of California for “public use, resort and recreation”. The first true national park came in 1872 with the dedication of Yellowstone by United States law “as a public park or pleasuring ground for the benefit and enjoyment of the people”. Interestingly, the creation of Yellowstone did not allow for the sympathetic treatment of native people and their environment as envisaged by Catlin.

These and other early United States national parks, such as Grand Canyon and Mount Rainier, were created in the west and covered extensive tracts of land with superb natural features. However, the idea of making the great natural areas of the US into national parks was most popular with large sections of the population that lived in the east of the country.

In 1866, the British Colony of New South Wales in Australia reserved 2,000ha (nearly 5,000 acres) of land, containing the Jenolan Caves west of Sydney, for protection and tourism. Later additions created a park complex now known as the Blue Mountains National Park. In 1879, Royal National Park was set up, also in New South Wales, in the wilds south of Sydney, so as to provide a natural recreation area for the burgeoning populations of this metropolitan area.

In 1885, Canada gave protection to hot springs in the Bow Valley of the Rocky Mountains, an area later named Banff National Park. The legislation passed in 1887 borrowed from the Yellowstone legislative wording: the park was “reserved and set aside as a public park and pleasure ground for the benefit, advantage and enjoyment of the people of Canada”. The railway companies, whose lines were under development...
across the country, saw the creation of a park as an excellent way to stimulate passenger
growth through tourism (Marty, 1984).

Elsewhere, several forest reserves were set up in South Africa in the last years of the
nineteenth century. In 1894, Tongariro National Park was established in New Zealand
by agreement with the Maori people, a place that was, and still is, important to them for
spiritual reasons.

There were common features to these emerging national parks. First, they were
created by government action. Second, the areas set aside were generally large and
contained relatively natural environments. Third, the parks were made available to all
people. Thus, from the very beginning, park visitation and tourism were central pillars of
the national parks movement.

In large, federated countries, such as Australia, Canada, South Africa and the USA,
the provincial or state tier of governments also started to create protected areas. For
example, the Province of Ontario in Canada created Queen Victoria Niagara Falls Park
in 1885 and Algonquin National Park, later named Algonquin Provincial Park, in 1893.

As more and more parks were created, it became necessary to set up a coordinated
management structure. In 1911, Canada created the world’s first park agency, the
Dominion Parks Bureau under its director, James B. Harkin. The US National Park
Service (USNPS) was established in 1916. The management philosophy given to the
USNPS involved both protection and use. The Act states that:

“the Service thus established shall promote and regulate the use of Federal areas
known as national parks, monuments and reservations ... by such means and
measures as [to] conform to the fundamental purpose of the said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations”.

Both Stephen T. Mather, the first Director of the USNPS and James B. Harkin advocated getting people into the parks so that they could enjoy their benefits and support the parks financially. They also developed management principles and structures to handle such visitation, sometimes creating situations that were later widely regretted.

Thus, a theme that runs right through the early history of protected areas is of people and land together, of people being as much a part of the concept as the land and natural and cultural resources. It was also part of the message of John Muir, Scots émigré and founder of the Sierra Club, who, in his “make the mountains glad” appeal, invited people to get out of the cities and into his beloved Sierra Nevada mountains for the good of their souls. It was also apparent that, almost from the outset, different countries were ready to learn from each other about how to set up and run parks.

So the modern protected area movement has nineteenth century origins in the then “new” nations of Australia, Canada, New Zealand, South Africa and the USA, but during the twentieth century the idea spread around the world. The result was a remarkable expansion in the number of protected areas. Nearly every country passed protected area legislation and designated sites for protection. In all, by the year 2002 some 44,000 sites met the IUCN definition of a protected area (see below); together these covered nearly 10% of the land surface of the planet (data from UNEP-WCMC). The growth in the number and areal extent of protected areas is shown in Figure 2.1.

As the network grew, understanding of what is meant by a “protected area” evolved. Thus, the initial, relatively simple concept of large wild areas “set aside” for protection and enjoyment was complemented by other models more appropriate to different parts

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**Figure 2.1  Growth in protected areas – 1900 to the present**
of the world. Many countries placed more emphasis on cultural values than was initially the case with the early national parks. Protection of lived-in landscapes, for example, came initially from European experience. Also concern with the marine environment has grown markedly in recent years (Kelleher, 1999).

The thinking behind the establishment of protected areas developed rapidly too. For example, the development of the science of ecology led in the 1960s to a broader understanding of the need for a systematic approach to resource planning and management. This can be seen with the IUCN (1994) classification system for protected areas, which takes biodiversity conservation as its starting point, though it also recognises the importance of other protected area objectives such as recreation and tourism. Many park systems started to use ecology as the co-ordinating concept for the establishment of new parks. However, when the best and most interesting natural and cultural sites in a country are placed in a protected area framework, there is a natural tendency for people to want to experience these environments. Tourism grew in many parks and became a major element in the culture of society.

Economics was an important consideration in the development of many protected areas. In particular, the economic impact of tourism in protected areas emphasises their community, regional and national importance. It is probable that in the coming decades a developing understanding of the economic impact of park tourism will lead to a more systematic treatment of park tourism. The time may come when a park system is understood within the framework of a park tourism system as well as an ecological system.

Moreover, there is increasing appreciation of the economic importance that many protected areas play by providing environmental services, like water supply, flood
control and mitigation of the effects of climate change (IUCN, 1998; and IUCN, 2000). Furthermore, particularly since the adoption of the Convention on Biological Diversity (CBD) in 1992, and especially because of Article 8a, much more stress is now put upon the idea of developing national systems of protected areas as a means of conserving biodiversity in situ and for other purposes (Davey, 1998). Indeed many protected areas now form part of international networks, both global systems, notably World Heritage sites, Ramsar sites and Biosphere Reserves; and regional systems, such as the Europa 2000 network of nature conservation sites in Europe. There are also calls to recognise fully the role of indigenous peoples in respect of protected areas (Beltran, 2000), and to develop international co-operation in protected areas across national boundaries (Sandwith et al., 2001).

2.2 The IUCN Protected Area Management Category System

So the notion of protected areas developed a great deal in recent years and now embodies many different ideas. Nonetheless, IUCN has agreed upon a single definition of a protected area as follows:

"An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means" (IUCN, 1994)

Within this broad IUCN definition, protected areas are in fact managed for many different purposes. To help improve understanding and promote awareness of protected area purposes, IUCN has developed a six category system of protected areas identified by their primary management objective (IUCN 1994), as shown in Table 2.1.

Table 2.1 IUCN Management Categories of Protected Areas (IUCN, 1994)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Strict Nature Reserve/Wilderness Area: Protected area managed mainly for science or wilderness protection.</td>
</tr>
<tr>
<td>Ia</td>
<td>Strict Nature Reserve: Protected area managed mainly for science.</td>
</tr>
<tr>
<td>Ib</td>
<td>Wilderness Area: Protected area managed mainly for wilderness protection.</td>
</tr>
<tr>
<td>II</td>
<td>National Park: Protected area managed mainly for ecosystem protection and recreation.</td>
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<tr>
<td>III</td>
<td>Natural Monument: Protected area managed mainly for conservation of specific natural features.</td>
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<tr>
<td>IV</td>
<td>Habitat/Species Management Area: Protected area managed mainly for conservation through management intervention.</td>
</tr>
<tr>
<td>V</td>
<td>Protected Landscape/Seascape: Protected area managed mainly for landscape/seascape conservation and recreation.</td>
</tr>
<tr>
<td>VI</td>
<td>Managed Resource Protected Area: Protected area managed mainly for the sustainable use of natural ecosystems.</td>
</tr>
</tbody>
</table>

The IUCN protected area management categories system is based upon the primary objective of management. Table 2.2 shows how an analysis of management objectives can be used to identify the most appropriate category.
Table 2.2 Matrix of management objectives and IUCN protected area management categories (IUCN, 1994)

<table>
<thead>
<tr>
<th>Management objective</th>
<th>Ia</th>
<th>Ib</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific research</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Wilderness protection</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>–</td>
<td>2</td>
</tr>
<tr>
<td>Preservation of species and genetic diversity</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Maintenance of environmental services</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>–</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Protection of specific natural/ cultural features</td>
<td>–</td>
<td>–</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>Tourism and recreation</strong>*</td>
<td>–</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Education</td>
<td>–</td>
<td>–</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sustainable use of resources from natural ecosystems</td>
<td>–</td>
<td>3</td>
<td>3</td>
<td>–</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Maintenance of cultural/traditional attributes</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

*Key:* 1 = Primary objective; 2 = Secondary objective; 3 = Potentially applicable objective; – = not applicable.

*Emphasis added for this publication*

Table 2.2 shows that some kind of recreation and tourism is likely to occur as a management objective in every category of protected areas, save Category Ia (the strict nature reserve). It also shows that biodiversity protection, though a critically important function of many protected areas, is far from the only purpose and is often not the primary purpose of a protected area. It is, though, a requirement of the IUCN definition that any protected area should always have a special policy to protect and maintain biodiversity.

Many park systems have the commemoration of cultural and historic integrity as central elements of management. These systems are often very important tourism destinations. However, protected areas that are primarily established for cultural or historic reasons, such as those in the large historic national park systems of the USA and Canada, are not classified by the IUCN system shown in Tables 2.1 and 2.2.

Marine Protected Areas (MPAs) are covered by the IUCN definition and categories system. They recently gained prominence as the need for the protection of marine environments became more widely recognised. Green and Paine (1997) indicated that there are over 2,000 protected area sites with some marine element, covering approximately 2.5 million km². MPAs may include terrestrial lands as well as reefs, seagrass beds, shipwrecks, archaeological sites, tidal lagoons, mudflats, salt marshes, mangroves, and rock platforms. The growth of MPAs appears to rise dramatically in the 1970s. This was largely because Green and Paine included Greenland National Park in their calculations; at almost 1 million km², it is the largest protected area anywhere, but most of this park is in fact terrestrial. However, there has been a decline in the number of MPAs established in the 1990s. The trend seems to be to establish fewer, but larger sites. It is though clear that the number and extent of MPAs are inadequate to achieve even basic
conservation objectives (Lawton, 2001). The factors suggested to account for this neglect include:

- Limited state of knowledge about marine ecosystems;
- Perceptions that marine resources are limitless and so do not require protection;
- The fact that most marine resources do not stay within imposed administrative boundaries; and
- Because only a small portion of marine space lies within the clear jurisdiction of States and dependencies.

Designation and the declaration of protected area objectives do not of themselves ensure the survival of the protected area values. Therefore, the listed statistics on number and size of protected areas can be misleading, since protected areas do not offer a single, homogenous level of ‘protection’, and, as noted, have many and different management objectives. Most importantly they are managed to widely varying levels of effectiveness. There is wide agreement that much more needs to be done to improve the effectiveness of protected area management (Hockings, 2000). It is important therefore that, when tourism takes place, management frameworks and strategies are put in place to ensure that it supports and maintains protected area natural and cultural values. Managers have a mandate and a responsibility to protect the natural and associated socio-cultural values of protected areas. They must also ensure adequate and appropriate access for tourism and recreation. This is a substantial challenge, involving difficult judgments on the trade-offs that occur between tourism development, the protection of the resource values for which protected areas are established and the interests of the local community. These Guidelines address this challenge by assisting park managers and others to be effective in their management of visitation and tourism.