



## The history of the changing nature of protected area management objectives

S.H. Mirkarimi<sup>\*1</sup>, C. Arrowsmith<sup>2</sup>

<sup>1</sup>Department of Fisheries and Environmental Sciences, Gorgan University of Agricultural Sciences and Natural Resources, Gorgan, Iran

<sup>2</sup>School of Math and Geospatial Sciences, RMIT University, Melbourne, Australia

*Received: May 2016 ; Accepted: December 2016*

### Abstract

Natural areas have been reserved for thousands of years. However, the reasons for reservation have changed with time. Natural areas management objectives have changed from personal/individual human needs to environmental protection. Unlike old protected areas, new protected areas have multiple management objectives. The management objectives changed from protection-for-now to protection-for-the-future. It has also changed from a human benefit perspective to a philanthropic perspective. Through a historical overview, this paper argues that changes in landscape, human needs and awareness are the main driving forces behind changes in management objectives of the protected areas through time. By looking at the past and present for protected areas management aims, this paper argues that the first management aim of protected areas has led to isolating landscape of protected areas from their surrounding areas. However, through time, the aims were changed and therefore, methods of protected areas planning have changed towards reconciliation with surrounding landscape. Through a case study approach it is discussed that the purpose of contemporary management plans for protected areas could be different in various countries.

**Keywords:** Protected area, National Park, Management objectives, Landscape change.

---

\* Corresponding author; [mirkarimi.hamed@gmail.com](mailto:mirkarimi.hamed@gmail.com)

## Introduction

Natural areas have been reserved for thousands of years (Eagles *et al.*, 2002). However, the reasons for reservation have changed with time. We see a move from single use protected areas 10,500 years ago to where protected areas have a number of uses and management objectives, today. Through a history review, this paper argues that changes in landscapes within protected areas and demands for resources together with increasing human knowledge and awareness have led to changes in protected area management objectives. Changes in management objectives themselves have led to changes in the nature of protected areas planning approaches. These approaches started with ad-hoc/unstructured methods. However, different planning approaches have emerged in park management through time. Today, a protected area planning approach must consider a number of management objectives including preservation and maintenance of natural and cultural values as well as providing recreational, research and educational opportunities for present and future generations. Table 1 (in section 3) summarises the history of protected areas' planning.

By looking at the past and present of protected areas' planning history, this paper discusses the history in relation to protected areas and their surrounding landscape. It will argue that the first protected areas management objectives had led to isolating landscape of protected areas from their surrounding areas. However, through time, the aims were changed and therefore, the methods of protected areas planning have changed towards reconciliation with surrounding landscape. In addition, through a case study method, it will be discussed that the purpose of protected areas management aims and objectives is different in various countries.

## Changes in Landscape

The landscape is constantly changing both temporally and spatially and at many

time scales (Marcucci, 2000). Generally, there are two main forces for changes in landscape including natural and cultural processes. Some of the natural processes are seasonality, Tsunami, earthquakes, hurricanes, volcanic eruptions and ecological succession. While, for example, creation of landforms resulting from tectonic processes is slow, other natural changes such as seasonal variations are quicker and can be seen in the protected area planning period.

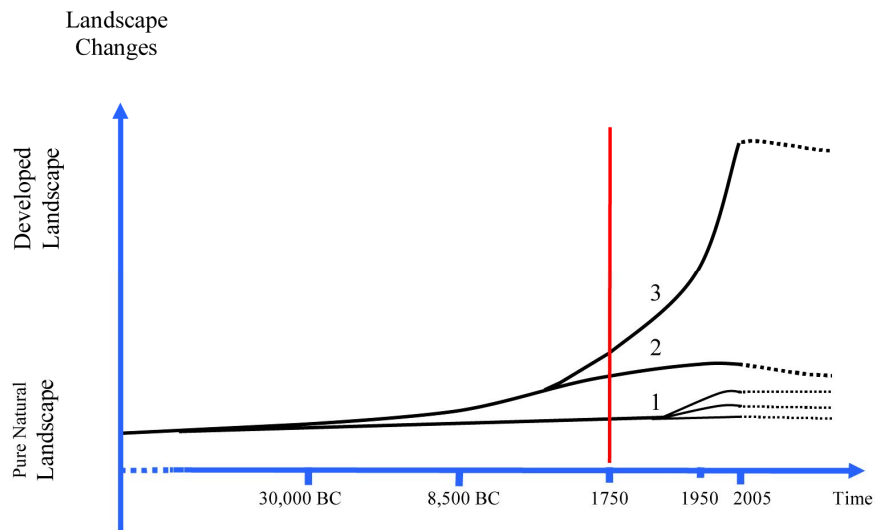
Cultural processes also are responsible for many changes in the landscape. In the last three centuries, cultural processes including the increasing population together with the growth of urbanisation, accessibility and globalisation were the main driving forces behind changes in the landscape (Bell, 1999; Antrop, 2005). However, human influence on the landscape dates back to thousands of years ago. For example, in Australia, Aboriginal use of fire to control their environment has probably spanned at least 30,000 years (Williams, 2002).

This use of fire has changed the landscape of Australia (Phillips, 1988). Globally, agricultural activities started about 10,500 years ago (Cutter *et al.*, 1991; Holdgate, 1999; Makhdoum, 1999; Holechek *et al.*, 2000; Martin, 2004). Agricultural activities also changed the natural environment (Holdgate, 1999; Makhdoum, 1999).

As Figure 1 shows, natural landscapes such as 'natural area' and 'traditional cultural landscape' before the eighteenth century were considered as being relatively stable and having a distinct natural character and identity (Antrop, 2005). But, since the industrial revolution in mid eighteenth century, humankind has changed ecosystem structure more than before. A whole succession of technological revolutions, as new driving forces behind changes in the environment and the wars from the end of the eighteenth century to the mid-twentieth century produced a definite break with the past. Since

the Second World War the increasing population, growth of urbanisation, technological knowledge, accessibility and globalisation have been the driving forces behind changes in the environment. As a result, new landscapes such as industrial areas were created during that period

(Antrop, 2005; Bell, 1999). Nowadays, few, if any, natural areas are truly natural (Phillips, 1998; Bell, 1999). No area on earth can be considered as truly natural and in fact, all areas on earth have been subject to human influence in some way (IUCN, 1994).



**Figure 1.** The rate of landscape changes through time.

**Key: Types of landscapes:**

- 1: Natural landscape in different levels of development;
- 2: Traditional cultural landscape;
- 3: Developed landscape such as urban landscape, industrial landscape.

However, the extent of modification is not always the same for different parts of the earth. For example, the extent of changes in protected areas could be different and smaller in developed landscapes such as industrial areas (figure 1). Protected areas are parts of a landscape and they are changing as landscapes change. Before, protected areas were parts of natural landscape, but today protected areas around the world are managed as examples and evidence of natural areas (IUCN, 1994; Phillips, 1998). In fact, although the landscape of protected areas has changed as the entire landscape changed, as they are under separate landscape management systems, they became islands of preserved nature in the middle of developed landscapes. For example, Khojeir and Sorkhe-hesar

National Parks are located southeast of Tehran, the capital of Iran. The pristine natural environment of the parks was the reason for their protection as royal hunting areas since the early 1800s (Makhdoum *et al.*, 1987; Department of the Environment, 2005). Since 1982, these areas were entrusted to Iran Department of the Environment as national parks (Makhdoum *et al.*, 1987). Today, the parks are surrounded by main roads and highways. In addition, the parks are close to Tehran (capital of Iran) which is one of the most developed areas in Iran. Neighbourhood agricultural activities and a number of industrial activities make the parks islands of natural areas within the developed surrounding areas.

It was not just outside the protected areas that changed and developed through

time. In some cases, inside protected areas, particular parts called 'recreational zones' were changed from natural to developed recreation areas. For example, in Australia, the Grampians National Park offers a wide range of recreational activities such as camping, picnicking, bush walking, 4-wheel driving, track bike riding, pleasure driving, cycling, rock climbing and abseiling, angling, swimming and boating (Parks Victoria, 2002). These changes in landscape of protected areas have happened due to changes in human needs that will be discussed in the following section.

### **Changes in human needs**

Natural areas have been protected for various reasons (Table 1). People used to hunt and gather food from natural areas before they started to settle on the first farms in the rich breeding-grounds for agriculture in Mesopotamia, in the Middle East about 8500 BC (Cutter *et al.*, 1991; Holdgate, 1999; Makhdoum, 1999; Holechek *et al.*, 2000; Martin, 2004). About 500 BC, Xerxes (Khashayar Shah, an Iranian king) on his way to Asia Minor passed through a beautiful cypress forest. He ordered the protection of the forest by his royal army as an area for concealment in times of war (Yakhkashi, 2002). In India, specific areas were conserved more than two thousand years ago as sacred sites for the protection of forests and animals. There are ancient sacred sites and protected forests in the Pacific region, West African countries, China, and Nepal (Holdgate, 1999). The protection of nature reserves for hunting has been in practice for more than a thousand years in Europe (Eagles *et al.*, 2002). In addition, about 500 years ago natural areas were protected for timber, water and birds in Europe (Holdgate, 1999). In 1872, the first national park in the world, Yellowstone, was established in the US. Later, many countries started to establish national parks based on the American model (McNeely, 1994; Wright, 1996; Holdgate, 1999). The main objective of

national park management was providing public enjoyment and economic aims. The concept of enjoyment was implicit in resource-based activities such as viewing, hiking, swimming and sport fishing (Forster, 1973; Hutton and Connors, 1999; Sellars, 1997; Holechek *et al.*, 2000; Worboys *et al.*, 2001; Eagles *et al.*, 2002).

National parks were considered as areas for public enjoyment, health, pleasure and recreation. Hotels, cabins and other accommodation were built inside the parks and managers of the parks became involved in the design, construction and maintenance of park facilities such as roads, tracks, restaurants, campgrounds, garbage dumps, electric light, telephone, plumbing, sewage and sanitation and security. In other words, a commercial perception, as a park management principal, was forming parks development policy and was responsible for increasing the number of tourists to the parks (Ise, 1979; Sellars, 1997).

However, the trend faced stagnancy with the beginning of the Second World War. Like the First World War, the Second World War (1939-1945) brought negative impacts on park resources especially in the countries that were encountering war (Holdgate, 1999). There was a remarkable decrease in park tourism after the war began. Forests were cut for timber in many parks. For example, Sitka spruce (the tallest conifer, *Picea sitchensis*) was cut for its timber for aeroplanes in the Olympic National Park in US (Ise, 1979). Though, the end of the Second World War brought a rapid increase in the number of park visitors and therefore, planning for development of the parks began once more to meet the needs of tourism (Sellars, 1997; Hutton and Connors, 1999). Later, with increasing human awareness, protected area management aims changed towards paying more attention to conservation of natural and cultural values of the parks for now and future. This will be discussed in detail in the following section.

**Table 1.** Historical overview of protected area planning.

Era	Date	Factors which Changed Natural Areas	Examples	Primary Human Needs	Philanthropic Objectives	Applying Human Knowledge in Different Protected Area Planning Approaches
Pre 2000 Years	8500 BC	Natural changes, Results of using fire, Agricultural activities, Domestic animals introduction, Ad hoc reserved area & Urbanisation	Agricultural activities in Mesopotamia, Middle East	Subsistence farming		Ad hoc/Unstructured approach
	500 BC		Cypress Forest ad hoc reserved area in Asia Minor	For concealment in time of war	Ad hoc natural areas preservation	Ad hoc/Unstructured approach
	0		Sacred Sites in China, Nepal, West Africa & Pacific Region	Holy or religious purposes		
Pre 1000 Years	1000 – 1800	Natural changes, Results of using fire, Agricultural activities, Husbandry, Urbanisation Reserved area & Industrial Revolution	Sacred Sites Hunting Areas Protected Reserves	Holy or religious purposes Natural resources preservation: Timber Water Hunting	Ad hoc natural areas preservation	Ad hoc/Unstructured approach
Nineteenth Century	1800 - 1900	Natural changes, Results of using fire, Agricultural activities, Urbanisation, Industrial activities Reserved natural area & National parks	New Nature or Monument	Holy or religious purposes Cultural activities	Ad hoc natural areas preservation cultural sites protection	Reservation of areas/Ad hoc
			Protected Reserves	No human needs	Natural resources preservation	Reservation of areas/Ad hoc
			National Parks	Recreation e.g.: Nature viewing Hiking Swimming Sport fishing	Natural resources preservation	

Table 1. Historical overview of protected area planning (Continue).

Era	Date	Factors which Changed Natural Areas	Examples	Primary Human Needs	Philanthropic Objectives	Applying Human Knowledge in Different Protected Area Planning Approaches
Twentieth Century	1950 – 1950	Natural changes, Results of using fire, Agricultural activities & Urbanisation	Protected Reserves New Nature or Monument Reserves	No human needs Cultural activities	Natural resources preservation, Cultural sites protection	Reservation of areas/Ad hoc, Forestry based approach, Engineering based approach, Landscape architecture & Zoning and buffering
	1900 – 1950	Industrial activities, Reserved natural area, Harmonious developed national parks & The two world wars	National Parks	Recreation	Natural resources preservation Flora and fauna protection Cultural sites protection Harmonious development Sustainable development Education Research	Wildlife Management and Wildlife Biology approaches: Considering the impacts of development on wildlife and their habitats, Prohibition of introducing non-native species to parks/ Limitation of predator animal control policies
Twentieth Century	1950 – 1970	Natural changes, Results of using fire, Agricultural activities, Urbanisation, Rapid industrial activities, Reserved natural area, Developed national parks, Isolated national parks and equivalent areas	National Parks & Equivalent Areas	Recreation Cultural activities	Natural resources preservation, Recreation, Cultural sites protection, Harmonious development, Sustainable development, Education, Research & Biodiversity conservation	Forestry, Engineering, Landscape architecture, Wildlife management & Wildlife biology Ecosystem/Nature-based management: Considering the ecological economic and cultural relationship between parks and rural areas
	1970 – 1990	Natural changes Results of using fire Agricultural activities Urbanisation Industrial activities Isolated national parks and equivalent areas	National Parks & Equivalent Areas	Recreation Cultural activities	Natural resources preservation, Cultural sites protection, Harmonious development, Sustainable development, Education, Research, Biodiversity conservation, Visitor safety, Biotic community conservation, Ecological scenes protection	Ecosystem/Nature-based management: Considering the ecological economic, cultural relationship between parks & rural areas/ Limitation of any changes in natural landscape & scenery / Considering complete ecosystems as a base for natural area planning Determining new conservation policies: Limitation of national parks development e.g. road networks, powerboats, power toboggans and camping trailers with TV Carrying capacity: Gathering data about animals, plants and other natural elements and visitors for planning aspects/ Limitation of supply based on physical and social qualities of area Environmental Impact Statement

**Table 1.** Historical overview of protected area planning (Continue).

Era	Date	Factors which Changed Natural Areas	Examples	Primary Human Needs	Philanthropic Objectives	Applying Human Knowledge in Different Protected Area Planning Approaches
Twentieth Century	1990 – 2000	Natural changes, Results of using fire, Agricultural activities, Urbanisation, Industrial activities & Towards not isolated protected areas	Protected Areas	Recreation, Cultural activities	Natural resources preservation, Cultural sites protection, Harmonious development, Sustainable development, Education, Research, Biodiversity conservation, Visitor safety, Biotic community conservation, Ecological scenes protection & Spatial & temporal issues consideration	Ecological and landscape planning approaches: Transboundary ecosystem management Environmental economic evaluation
New Millennium		Natural changes, Results of using fire, Agricultural activities, Urbanisation, Industrial activities & Not isolated protected areas	Protected Areas	Recreation Cultural activities	Natural resources preservation, Cultural sites protection, Harmonious development, Sustainable development, Education, Research, Biodiversity conservation, Visitor safety, Biotic community conservation, Ecological scenes protection, Spatial & temporal issues consideration & Policy issues consideration	Ecological Planning Approaches: Landscape ecological planning Landscape value Landscape perception

### **Changes in human awareness and knowledge**

With the expansion of industrialisation in the early nineteenth century, awareness of the danger of resource waste increased (Holechek *et al.*, 2000). Universities were established to educate professional resource managers and the harvesting of wildlife and other resources were limited (Cortner and Moote, 1999). In addition, the idea of living close to nature for aesthetic enjoyment became important (Hutton and Connors, 1999). In other words, the stimulus promoting the protection of nature resulted from three major factors: the exploration of knowledge about nature, the destructive exploitation of natural resources and the beginning of a literary period emphasising the relationship between humans and the environment.

These factors were the driving forces behind the creation of the conservation and preservation movements in the years to follow (Holdgate, 1999). Conservation and preservation were the basis of creating many different types of new frameworks for the protection of natural areas. The term 'conservation' implies the managed use of the environment. Preservationists want the complete protection of that resource in a zoned area, with no, or very little human interference (Cortner and Moote, 1999; Holdgate, 1999; Holechek *et al.*, 2000). While conservationists mainly presented the management policies for 'national parks', preservationists were the driving force behind the creation of more preserve protected areas such as 'wildlife reserves', 'national monuments' and 'nature reserves' (Holdgate, 1999; Hutton and Connors, 1999; Worboys *et al.*, 2001).

During the first decades of national park management some areas with high natural quality were separated for protection or preservation from those which were more productive or under harvesting activities such as hunting area, farms, silvicultural practices and mining. Mendel and Kirkpatrick (1999) argue that in Tasmania in the early nineteenth century, reserves were concentrated in the area of high scenic quality. However, in the later decades of the twentieth century and especially between

1970 and 1992, biological diversity and wilderness conservation drove much of the management objectives of the national park management. As a result, by 1992, areas of low scenic quality but with high biological diversity were protected more than before (Mendel and Kirkpatrick, 1999; Casson, 2016).

In the late nineteenth century, tourism and public recreation activities in national parks caused an awareness of ecological issues in future park planning (Sellars, 1997). Because of too much attention to tourism, in some cases, predator animals such as wolves, cougars, lynx and foxes were considered undesirable inside the parks and were killed. There was a belief that they were dangerous to tourists and other game species. Conversely, game species were considered a significant resource for public enjoyment and as a result, more emphasis was put on the protection of their populations. In addition, protection of forests and grasslands became especial management concerns. Plant disease control, fire suppression and protecting the parks from grazing as well as fighting poachers and insect control quickly emerged as primary objectives in park management (Ise, 1979; Sellars, 1997). However, in the early twentieth century, park management theories started to be based on the protection of natural scenery, historic objects and fauna and flora (Sellars, 1997). Acts and laws were enacted, scientific research and conventions to protect animals were formed and national societies were established to protect wildlife and nature (Ise, 1979; Sellars, 1997; Holdgate, 1999). For example, in Australia, the first bird protection act was enacted in 1901 to protect birds by providing a closed season (Hutton and Connors, 1999).

In the second decade of the twentieth century, with the emergence of scientific investigations as a basis for park management policy in areas like 'forestry', concurrent 'engineering' and 'landscape architecture' policies emerged to assist in the design of new facilities in harmony with natural elements (Ise, 1979; Sellars, 1997). Later, in the post-war era, 'wildlife



management', 'wildlife biology' and 'education' were added to the park management literature (Sellars, 1997). These disciplines created a basis for introducing an actual 'ecological approach' in park management. Attention to wildlife issues increased and comprehensive management plans or 'master plans', enabled more information about natural resources, rather than just facilities placement information to be included (Miller, 1987; Sellars, 1997).

In the same period of time, the phrase 'core zone' emerged in park management planning to conserve wilderness in all non-developed areas within parks. Later, in the US, instead of wilderness areas, 'research reserves' were established within national parks to be used for scientific research (Sellars, 1997).

In addition, to save some particular habitats the idea of a 'buffer zone' emerged in park management. A number of new types of protected areas were developed such as 'historic sites', 'archaeological sites', 'reservoirs', 'national parkways', 'memorials', 'local parks' and 'state parks' (Ise, 1979; Sellars, 1997). New types of public parks had different management systems by which national parks were defined.

In 1956, The International Union for Conservation of Nature and Natural Resources (IUCN) was established (Davey, 1998; Forster, 1973; Holdgate, 1999; IUCN, 1994; Miller, 1987). IUCN, UNESCO, the Economic and Social Council and Food and Agriculture Organization of the United Nations (FAO) established a list of the world's 'national parks and equivalent areas' with a brief description of each, in 1959. The term 'national parks and equivalent areas' were applied to areas that were managed under a legal status protecting them from all natural resource exploitation by humans and from any other threat to the quality of the area (Barclay, 1998; Forster, 1973; Miller, 1987).

During the 1970s and 1980s 'ecology' as a discipline came into its own, giving efforts to understanding the Earth and its systems and processes in a more holistic way (Pirot *et al.*, 2000). In park planning

literature, the ecological, economic and cultural relationship between parks and rural areas emerged as concerns to be taken into consideration (Forster, 1973; Sellars, 1997). In addition, 'environmental education', 'visitor safety', 'environmental impact statement' and 'land classification' emerged in park management policy. However, the protection of wilderness and its treasures were still considered necessary for the attraction of tourism in the park management system rather than protection of natural environment. In the process of planning or 'zoning', intensive use areas were isolated from wilderness areas in master plans.

With expanding ecological understanding of the parks, 'biotic community' and 'ecological scenes' of these areas were advocated. Inside the parks, any changes in natural landscape and scenery from human influences were limited (Sellars, 1997). A complete 'ecosystem' was considered as the basis for natural area planning (Forster, 1973; Miller, 1987; Sellars, 1997). 'Ecological management' was considered essential for actual nature-based management. 'Scenic preservation' in preserved protected areas and 'tourism management' in conserved areas were recognised as incomplete and inefficient. National parks management and planning redefined a kind of ecological program through systematic research planning (Forster, 1973; Miller, 1987).

In other words, just during the last three decades of the twentieth century, preserving natural elements has ranked above recreational demand in parks management policy. Recreational supply has been limited to natural carrying capacity of the resources based on physical and social qualities of an area. Natural resources determined the types and amounts of recreation. The consideration has changed on the resources instead of the user needs (Forster, 1973; Gold, 1980). Generally, with changes in human awareness and evolution of ecological knowledge, different ecologically-based approaches were advocated in protected area planning and management such as land suitability, ecosystem management, landscape ecology and

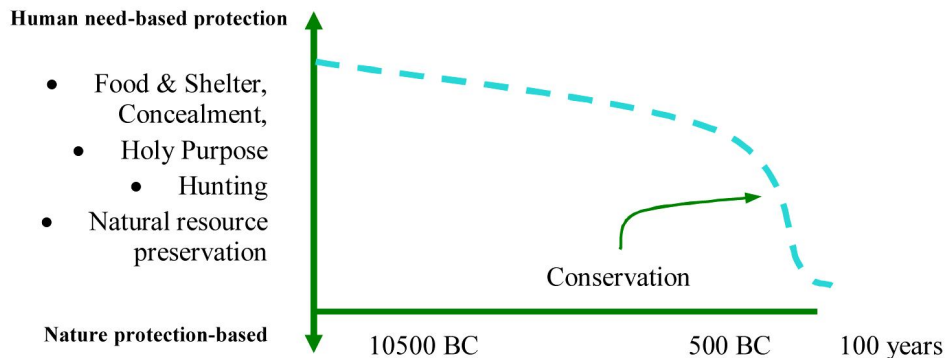
landscape ecological planning to cover more protected area planning objectives.

***Changes in human objectives: towards reconciliation with surrounding landscape***

Changes in landscape, human needs and awareness have led to changes in management objectives of protected areas. In fact, management objectives have changed from personal/individual human needs to environmental protection from a local perspective, then from local to national perspective and then from national to international perspective. It changed from protection-for-now to protection-for-the-future. Also, it changed from a human benefit perspective to a philanthropic perspective. Food and hunting that had been important objectives in protected area management are no longer significant (Figure 2).

For example, in Australia, the area of Booderee National Park has been protected in New South Wales according to different management objectives through time (Commonwealth of Australia, 2002). For hundreds of years the area of the park has been a focal point for aborigines. The region is noted for its spiritual and

ceremonial significance. Around the early 1900s, contemporary aboriginal people started a small settlement in the area. Fresh seafood and water in the area were two main resources that brought these nomads here. However, the area was used by non-aboriginal occupancy for fishing, whaling, grazing, tourism, timber getting and plantation forestry. Significant European heritage in the Park is land based (as distinct from marine sites). Cultural sites are protected such as the ruin of Cape St George lighthouse that is perhaps the most significant European cultural site in the Park. The ruin was listed on the National Estate Register in 1981 (Department of the Environment, Water, Heritage and Arts, 2007). A conservation plan for the lighthouse ruin is currently being implemented. According to the park management plan (Commonwealth of Australia, 2002), contemporary management objectives of the park include introducing the park to people, management of cultural heritage and natural heritage, management of commercial, visitor and recreation activities as well as management of the Booderee Botanic Gardens.



**Figure 2.** Changes in protected area planning objectives from human-need based to nature protection-based through time.

Generally, unlike old protected areas, new protected areas have multiple management objectives (Dudley, 2008; IUCN, 1994; Thomas and Middleton, 2003). However, the importance of the management objectives can be ranked differently. Mirkarimi and Arrowsmith

(2005) ranked the importance of main management objectives of protected areas planning in the following order:

1. Preservation of species and genetic diversity
2. Maintenance of environmental services
3. Scientific research, tourism and recreational programmes

4. Wilderness protection and protection of specific natural/cultural features
5. Educational aims and sustainable use of natural resources
6. Maintenance of cultural/traditional attributes

Today, protected areas are managed not only to provide increasing human needs, but also they are managed as reserved areas for natural and traditional cultural diversities. Increasing number of objectives in protected areas planning has brought new methods to cover more protected area planning objectives. Protected areas planning had started with preservation approach. Then forestry, engineering, landscape architecture, wildlife management and biology, ecosystem/nature-based management, carrying capacity, environmental impact assessment, ecological planning, landscape planning and landscape ecological planning emerged in the park management literature through time to cover a wider range of protected areas management objectives.

Now protected areas are going to have a greater relationship with their surroundings and in a more sustainable manner. The first protected areas were part of the environment. Then, protected areas became unique landmarks of stable natural areas isolated in the middle of changing/developing landscapes. Nowadays, using ecologically-based planning approaches, protected areas are going to have less heterogeneity with their surrounding areas and a more related situation with their context. Ecological planning approaches such as national planning (Davey, 1998), transboundary planning (Sandwith *et al.*, 2001; Vasilijević *et al.*, 2015), regional planning (McNeely, *et al.*, 1994), landscape planning (Phillips, 2002; Brown 2004) not only have attention to wildlife habitat of surrounding areas of protected areas, but also to social and economic characteristics of surrounding landscapes. In addition, by emerging landscape ecological planning approach for protected area planning, temporal and spatial aspects of protected areas' landscapes are becoming important concerns to be taken into consideration in the process of planning for protected areas (Bennett, 1999; Hocking *et al.*, 2000; IUCN, 1994; Leitao and Ahern, 2002; Mirkarimi and Arrowsmith, 2007; Nyhuus *et al.*, 1992; Shafer, 1990). Moreover, there

are many attempts to reclaim landscapes both inside and outside the protected areas to the condition that they naturally had some time in the past by the recovery of an ecosystem that has been degraded, damaged or destroyed (Lamb and Gilmour, 2003). All these can lead protected areas towards reconciliation with their surrounding landscape in the future. Table 1 summarises the history relating to the changes in nature of protected area management objectives.

#### ***Differences between the management objectives in contemporary protected areas management: a case study approach***

It was discussed in this paper that theoretically new protected areas management objectives lead towards their reconciliation with surrounding landscape. However, not all protected area management strategies have the same aims. A case study approach was used to determine if there is any difference between the purposes for protected area planning in different countries. Case studies were selected from Australia and Iran. Three Australian national parks (the Grampians National Park, Port Campbell National Park and Wilsons Promontory National Park all from the State of Victoria) and three Iranian national parks (Golestan National Park, Khojeir National Park and Sorkhe-hesar National Park) were selected as case studies. The management plans for the study areas were compared to examine differences in their planning purposes. From the management plans of the six case studies a number of features distinguish Australian protected areas planning purposes from those selected from Iran. Both Australian and Iranian management plans gather information on location of the parks, historical information, legislation, boundaries and adjacent areas uses, biotic and abiotic characteristics of the environment, cultural value, zoning and protection plans, visitation and tourism management, educational issues, research involved, authorised uses and any relation with other organisations and communities (Parks Victoria, 1998; Parks Victoria, 2003; Parks Victoria, 2006; Makhdoum *et al.*, 1987; Makhdoum *et al.*, 1999). It can be

learnt from the management plans of the case studies that in addition to geographical and ecological differences between the case studies, there are differences in socio-economic characteristic aspects of the areas.

Approximately 39% of the total pages of the Australian case studies management plans are about tourism management, while this covers about just 8% in Iranian management plans. According to IUCN guidelines, for a national park, tourism and recreation, equal to preservation of species and genetic diversity are primary objectives (Eagles *et al.*, 2002; IUCN, 1994). It seems Iranian management plans have more emphasis on protection of parks with less emphasis on recreation. Compared with Iranian management plans, the Australian management plans show more consideration towards tourism management.

Information derived from the management plans shows that unauthorised uses (such as unauthorised grazing, unauthorised grass harvesting or unauthorised animal hunting) are one of the most important issues in the Iranian case studies. For example, people come from 80 different surrounding villages to Golestan National Park for unauthorised animal hunting. They hunt animals for their vital food or they may sell it for money (Mirkarimi, 1999). Australian case study parks seem to have less conflict with their adjacent areas. There is no documentation regarding unauthorised grazing, unauthorised grass harvesting or unauthorised animal hunting. In contrast, there is an increasing trend in cooperation with landholders adjacent to the parks for the protection of both private property and park areas. However, in Wilsons Promontory National Park and the Grampians National Park, for example, there is potential for conflict between maintenance of the park values and surrounding land uses, because private land adjoining the park is mostly cleared for grazing or agricultural production.

More conflicts in the Iranian case studies could be seen due to higher rate of changes in the whole country. Australia and its protected areas are already developed for tourism activities. While in Iran, protected areas have conflicts with their neighbouring areas, Australia is increasing the cooperation with landholders adjacent to the parks in the protection of park areas according to the management plans. Therefore, planning for protected areas in Iran must be concerned about the surrounding areas and their possible impacts and relation with the parks management. To manage towards reconciliation with their surrounding landscape, both Australian and Iranian protected areas planning approaches must consider the environmental characteristics of their surrounding landscape, but in different ways.

### **Conclusion**

This paper reviewed the history relating to the changing nature of protected area management. From the earliest areas protected for resource use with single use objective, we have seen a move towards multiple use objectives that have led to multipurpose management.

Protected area planning and management has changed from planning for an isolated area to plan with consideration of the surrounding landscape. Nowadays, many planning and management approaches such as national planning, transboundary planning, regional planning, landscape planning and landscape ecological planning are used in protected areas planning and management aimed at reconciling protected areas with their surrounding. In other words, today the new purpose of managing is reconciliation with the surrounding. However, decades of years of managing have isolated the protected areas from their surrounding; consequently, it takes years to see the actual reconciliation. The process also could be different in different countries based on local socio-economic characteristics.

## References

- Antrop, M. 2005. Why landscapes of the past are important for the future. *Landscape and Urban Planning*, 70, 21-34.
- Barclay, M. 1998. IUCN's fifty year evolution from "protection" to "sustainable use". The IUCN Information Management Group, Gland, Switzerland. Viewed 10 September 2004: <[http://www.iucn.org/50/historical\\_overview.html](http://www.iucn.org/50/historical_overview.html)>.
- Bell, S. 1999. *Landscape: pattern, perception and process* p. 31, pp. 206-232. London: E and FN Spon.
- Bennett, A.F. 1999. *Linkages in the landscape: the role of corridors and connectivity in wildlife conservation*. Gland, Switzerland and Cambridge, UK: IUCN.
- Brown, J., Mitchell, N., and Berestford, M. 2004. *The Protected Landscape Approach: linking nature, culture and community*. Gland, Switzerland and Cambridge UK: IUCN.
- Casson, S.A., Martin V.G., Watson, A., Stringer, A., Kormos, C.F. (eds.). Locke, H., Ghosh, S., Carver, S., McDonald, T., Sloan, S.S., Mercurieff, I., Hendee, J., Dawson, C., Moore, S., Newsome, D., McCool, S., Semler, R., Martin, S., Dvorak, R., Armatas, C., Swain, R., Barr, B., Krause, D., Whittington-Evans, N., Gilbert, T., Hamilton, L., Holtrop, J., Tricker, J., Landres, P., Mejicano, Gilbert, T., Mackey, B., Aykroyd, T., Zimmerman, B., Thomas, J. 2016. *Wilderness Protected Areas: Management guidelines for IUCN Category 1b protected areas*. Gland, Switzerland: IUCN.
- Commonwealth of Australia. 2002. *Boodaree National Park Management Plan*, March 2002.
- Cortner, H.J., and Moote, M.A. 1999. *The politics of ecosystem management*. Washington D.C.: Island Press.
- Cutter, S.L., Renwick, H.L., and Renwick, W.H. 1991. *Exploitation conservation preservation: a geographic perspective on natural resource use*. New York: John Wiley and Sons.
- Davey, A.G. 1998. *National system planning for protected areas*. Gland, Switzerland and Cambridge, UK: IUCN.
- Department of the Environment. 2005. *Department of the environment of Iran: protected territories* (in Persian). Viewed 11 November 2005: <<http://www.irandoe.org/en/preserves.htm>>.
- Department of the Environment, Water, Heritage and Arts. 2007. *Boodaree National Park*. Viewed 18 December 2007: <<http://www.environment.gov.au/parks/boodaree/history.html>>.
- Dudley, N. (Editor) 2008. *Guidelines for Applying Protected Area Management categories*. Gland, Switzerland: IUCN. x + 86pp. WITH Stolton, S., P. Shadie and N. Dudley (2013).
- IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types , Best Practice Protected Area Guidelines Series No. 21, Gland, Switzerland: IUCN.
- Eagles, P.F.J., McCool, S.F., and Haynes, C.D. 2002. *Sustainable tourism in protected areas: guideline for planning and management*. Gland, Switzerland and Cambridge, UK: IUCN, the United Nations Environmental Programme and the World Tourism Organization.
- Forster, R. 1973. *Planning for man and nature in national parks: reconciling preparation and use*. Morges, Switzerland: IUCN.
- Gold, S.M. 1980. *Recreation planning and design*, New York: McGraw-Hill.
- Hockings, M., Stolton, S., and Dudley, N. 2000. *Evaluating effectiveness: a framework for assessing the management of protected areas*. Gland, Switzerland and Cambridge, UK: IUCN.
- Holdgate, M. 1999. *The green web*. London: Earthscan Publisher.
- Holechek, J.L., Cole, R.A., Fisher, J.T., and Valdez, R. 2000. *Natural resources: ecology, economics and policy*. New Jersey: Prentice-Hall.
- Hutton, D., and Connors, L. 1999. *A history of the Australian environment movement*, Cambridge University Press, Cambridge.
- Ise, J. 1979. *Our national park policy*. New York: Arno Press.
- IUCN. 1994. *Guideline for protected area management categories*. Gland, Switzerland and Cambridge, UK: IUCN, CNPPA with assistance of WCMC.
- Lamb, D., and Gilmour, D. 2003. *Rehabilitation and restoration of degraded forests*. Gland, Switzerland and Cambridge, UK: IUCN and Gland, Switzerland: WWF.
- Leitao, A.B., and Ahern, J. 2002. Applying landscape ecological concepts and metrics in sustainable landscape planning. *Landscape and urban planning*, 59, 65-93.
- Makhdoum, M.F., Javanshir, K., Ahmadi, H., Khalili, A., Zobeiri, M., Daiiani, A., Karami, M., Madjnoonian, B., Mahdavi, M., Meharabi, A.A., Nakhjavani, F., Ayattollahi, M., Amirahmadi, K., Behroozirad, B., Jazebi, K., Khalili, R., Khalili, M., Dehnamaki, K., Riazi, B., Saghari, M., Sistani, D., Shabani, A., Shokraii, F., Safipour, S., Ghazi, M., Madjnoonian, H., and Nikbakht, A. 1987. *Khojeir and Sorkhe-hesar national parks: a comprehensive management plan* (Ed, Makhdoum, M.F.) (In Persian). Tehran: University of Tehran and Department of the Environment of Iran.

- Makhdoum, M.F. 1999. *Fundamentals of Land Use Planning* (in Persian). Tehran: Tehran University.
- Makhdoum, M.F., Azarnivand, H., Jafari, M., Jamali, V., Tabiee, N.D., Sigaroudi, S.K., Salajeghe, A., Feiznia, S., Kiabi, B., Mohajer, M.R.M., and Mirkarimi, S.H. 1999. *Golestan National Park: a comprehensive management plan* (In Persian). Tehran: University of Tehran and Department of the Environment of Iran.
- Marcucci, D.J. 2000. Landscape history as a planning tool. *Landscape and Urban Planning*, 49, 67-81.
- Martin, R.T. 2004. Ancient Greece, Microsoft® Encarta® Online Encyclopaedia 2004, © 1997-2004 Microsoft Corporation. Viewed 18 August 2004: <<http://encarta.msn.com>>.
- McNeely, J.A. 1994. Protected areas for the twenty-first century: working to provide benefits for society. *Unasylva*, 45, 3-7.
- McNeely, J.A., Harrison, J., and Dingwall, P. (eds.). 1994. *Protecting nature: regional reviews of protected areas*. Gland, Switzerland and Cambridge, UK: IUCN.
- Mendel, L.C., and Kirkpatrick, J.B. 1999. Assessing temporal changes in the reservation of the natural aesthetic resource using pictorial content analysis and a grid-based scoring system - the example of Tasmania, Australia. *Landscape and Urban Planning*, 43, 181-190.
- Miller, K.R. 1987. *Planning national parks for ecodevelopment: methods and cases from Latin America*. Washington DC: Peace Corps.
- Mirkarimi, S.H. 1999. Socio-economic characteristics of Golestan National Park, In: M.F. Makhdoum and M.D. Dargahy (Eds.), *Golestan National Park: a comprehensive management plan* (in Persian) pp. 122-126. Tehran: University of Tehran and Department of the Environment of Iran.
- Mirkarimi, H., and Arrowsmith, C. 2005. A landscape ecological approach to protected area management. In *Proceedings of the Spatial Science Conference 2005 'Spatial Intelligence, Innovation and Praxis' the biennial conference of the Spatial Sciences Institute*, September, 2005 p. 85. Spatial Sciences Institute: Melbourne.
- Mirkarimi, H., and Arrowsmith, C. 2007. Importance of temporal and spatial characteristics in protected areas. In *Proceedings of the Spatial Science Conference 2007 'Powering the International Generation', The biennial conference of the Spatial Sciences Institute*, May, 2007 p. 761. Spatial Sciences Institute: Hobart.
- Nyhuus, S., Bodøgaard, T., and Glad, T. 1991. The ecology of green spaces within the built-up area of Oslo. *Science and the Management of Protected Areas* pp. 87-95. London: Elsevier.
- Parks Victoria. 1998. *Port Campbell National Park and Bay of Islands Coastal Park management plan*. Melbourne: Parks Victoria.
- Parks Victoria. 2002. *Parks Victoria education resource kit: section 4B parks and SOSE*. Viewed 23 January 2005: <[http://www.parkweb.vic.gov.au/education/resource\\_kit/index.htm](http://www.parkweb.vic.gov.au/education/resource_kit/index.htm)>.
- Parks Victoria. 2002a. *Wilsons Promontory Marine National Park and Wilsons Promontory Marine Park Management Plan*. Melbourne: Parks Victoria.
- Parks Victoria. 2003. *Grampians National Park Management Plan*. Melbourne: Parks Victoria.
- Phillips, A. 1998. The nature of cultural landscapes: a nature conservation perspective. *Landscape Research*, 22 (1), 21-38.
- Phillips, A. 2002. *Management guideline for IUCN category V protected areas: protected landscapes/seascape*. Gland, Switzerland and Cambridge UK: IUCN.
- Pirot, J.-Y., Meynell, P.-J., and Elder, D. 2000. *Ecosystem management: lessons from around the world: a guide for development and conservation practitioners*. Gland Switzerland and Cambridge, UK: IUCN.
- Sandwith, T., Shine, C., Hamilton, L., and Sheppard, D. 2001. *Transboundary protected areas for peace and co-operation*. Gland, Switzerland and Cambridge, UK: IUCN.
- Sellers, R.W. 1997. *Preserving nature in the national parks: a history*. New Haven and London: Yale University Press.
- Shafer, C.L. 1990. *Nature reserves: island theory and conservation practice*. Washington: Smithsonian Institution Press.
- Thomas, Lee and Middleton, Julie, 2003. *Guidelines for Management Planning of Protected Areas*. IUCN Gland, Switzerland and Cambridge, UK.
- Vasiljević, M., Zunckel, K., McKinney, M., Erg, B., Schoon, M., Rosen Michel, T. 2015. *Transboundary Conservation: A systematic and integrated approach*. Best Practice Protected Area Guidelines Series. No. 23, Gland, Switzerland: IUCN. xii + 107 pp.
- Williams, J. 2002. Fire regimes and their Impacts in the Mulga (*Acacia aneura*) landscapes of Central Australia, in *Australian fire regimes: contemporary patterns* (April 1998 - March 2000) and changes since European settlement, Australia State of the Environment Second Technical Paper Series (Biodiversity). Canberra: Department of the Environment and Heritage.

- Worboys, G., Lockwood, M., and Lacy, T.D. 2001. Protected area management: principles and practice. New York: Oxford.
- Wright, R.G. 1996. National parks and protected areas: their role in environmental protection. Cambridge, Massachusetts: Blackwell Science.
- Yakhkashi, A. 2002. Identification, conservation and rehabilitation of the Iranian environment (In Persian). Tehran: Institution of Technical and Vocational Higher Education Jahad-e-Agriculture.

