Erasmus Intensive Programme

Education for Sustainable Development in Protected Areas

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Sustainable Management of Protected Areas

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natureconservationunit

"A protected area is a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values."

A '**protected area**' can be any area of land or water designated primarily for nature conservation.

Types of Protected Areas

- national parks
- wilderness areas
- community conserved areas
- nature reserves
- biosphere reserves
- privately owned reserves
- other protected areas.

- At the start of the 20th century, there were only a handful of protected areas in the world, although many have existed for generations.
- Over time they have been recognised as a mainstay of biodiversity conservation as well as contributing to people's livelihoods.
- Today, there are approximately 200,000 protected areas in the world, which cover around 14.6% of the world's land and around 2.8% of the oceans.

Why are protected areas important?

- The earliest motives for protecting an area were probably to safeguard its spiritual significance or its importance as a hunting ground.
- What were once viewed as islands of wilderness are now increasingly perceived as parts of wider networks, involving and benefiting local communities.
- However, the intrinsic value of preserving nature is still a major motivating factor for setting up protected areas.

Why are protected areas important?

- Protected areas provide a wide range social, environmental and economic benefits to people and communities worldwide.
- They are a tried and tested approach that has been applied for centuries to conserve nature and associated cultural resources by local communities, indigenous peoples, governments and other organizations.
- For example, Natura 2000 sites receive between 1.2 and 2.2 billion visitor days every year, generating additional income of €50-85 billion.

Why are protected areas important?

- More than instruments for conserving nature, protected areas are vital to respond to some of today's most pressing challenges, including food and water security, human health and well-being, disaster risk reduction and climate change.

Why are protected areas important?

- As the world continues to develop at a rapid pace, pressure on ecosystems and natural resources intensifies.
- Protected areas, when governed and managed appropriately and embedded in development strategies, can provide nature-based solutions to this pressure, and take their place as an integral component of sustainable development.

Protected areas…

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- … enhance food security by boosting fisheries and preserving wild relatives of crops;

Global Food Security

Sustainable, healthy food for all

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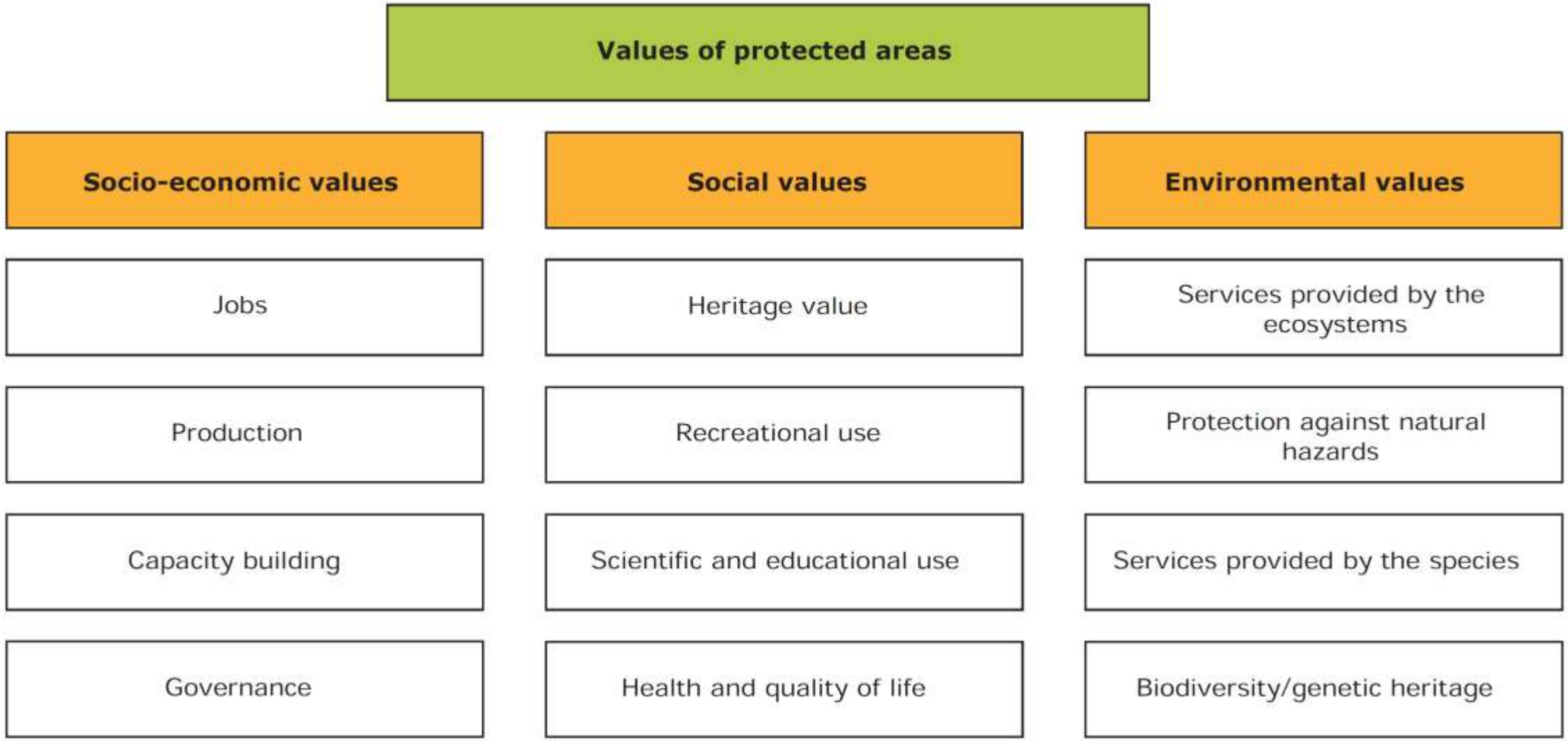
- … enhance food security by boosting fisheries and preserving wild relatives of crops;
- … provide homes, jobs and livelihoods to millions of people around the world.
- … provide education opportunities and tourism

Figure 2.1 Values of protected areas

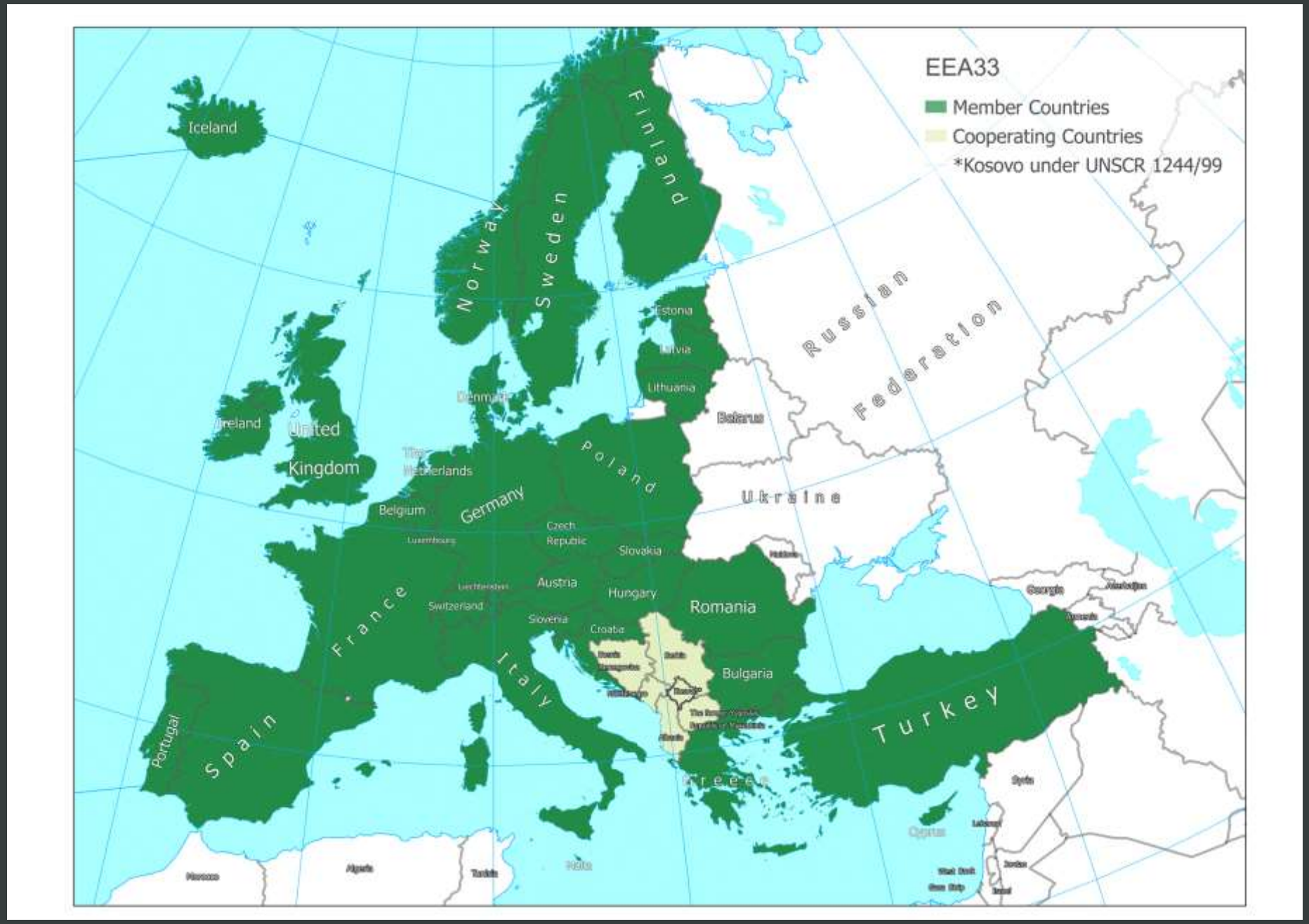


Source: Adapted from Dujin et al., 2008.

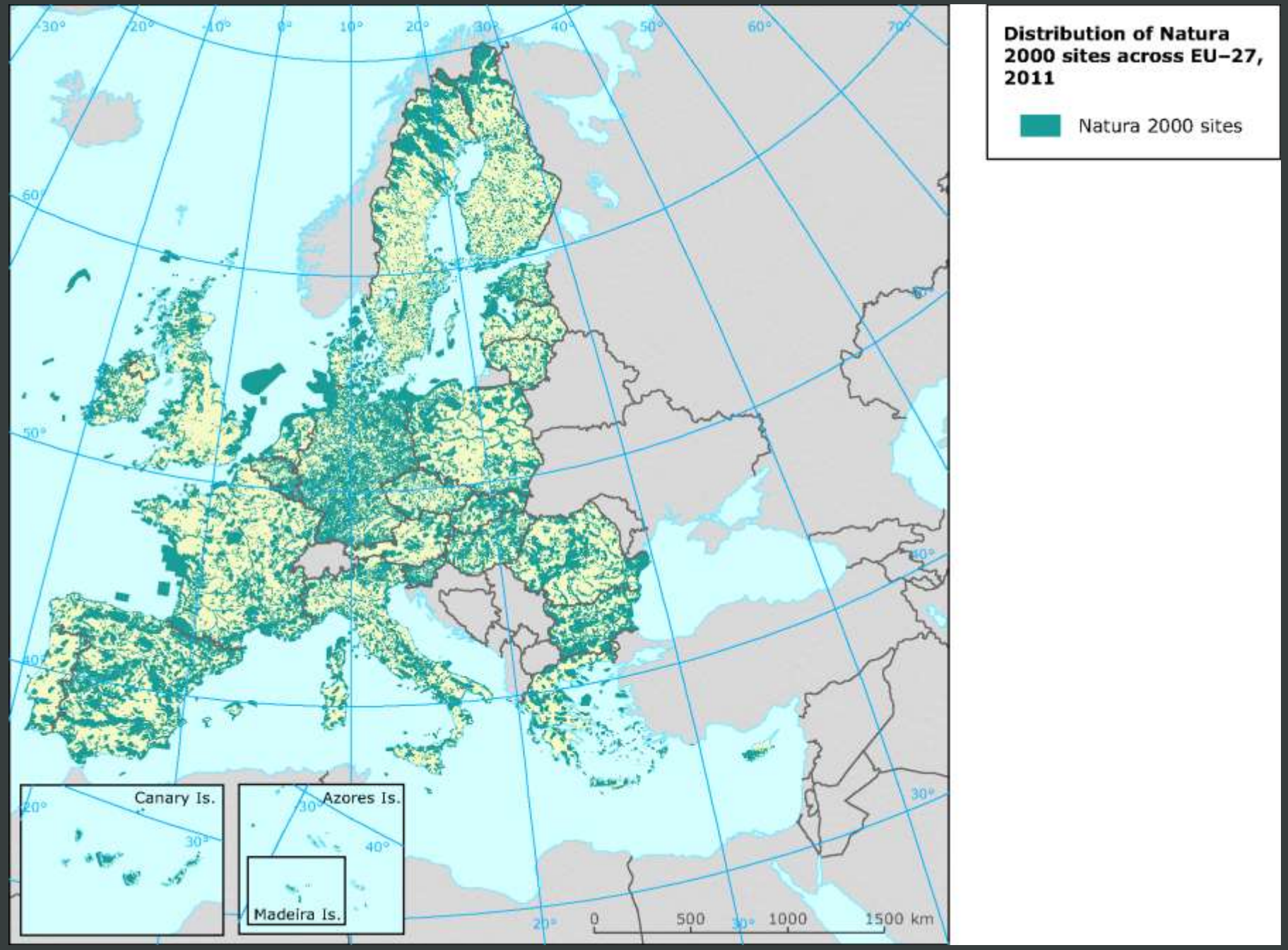
Protected areas…

- can place very different limits on human activity.
- for example, some allow building, fishing and industry, while others are closed to most human intervention.

- More than 21% of the land has some kind of protected status in the 33 countries which work with the European Environment Agency (EEA).

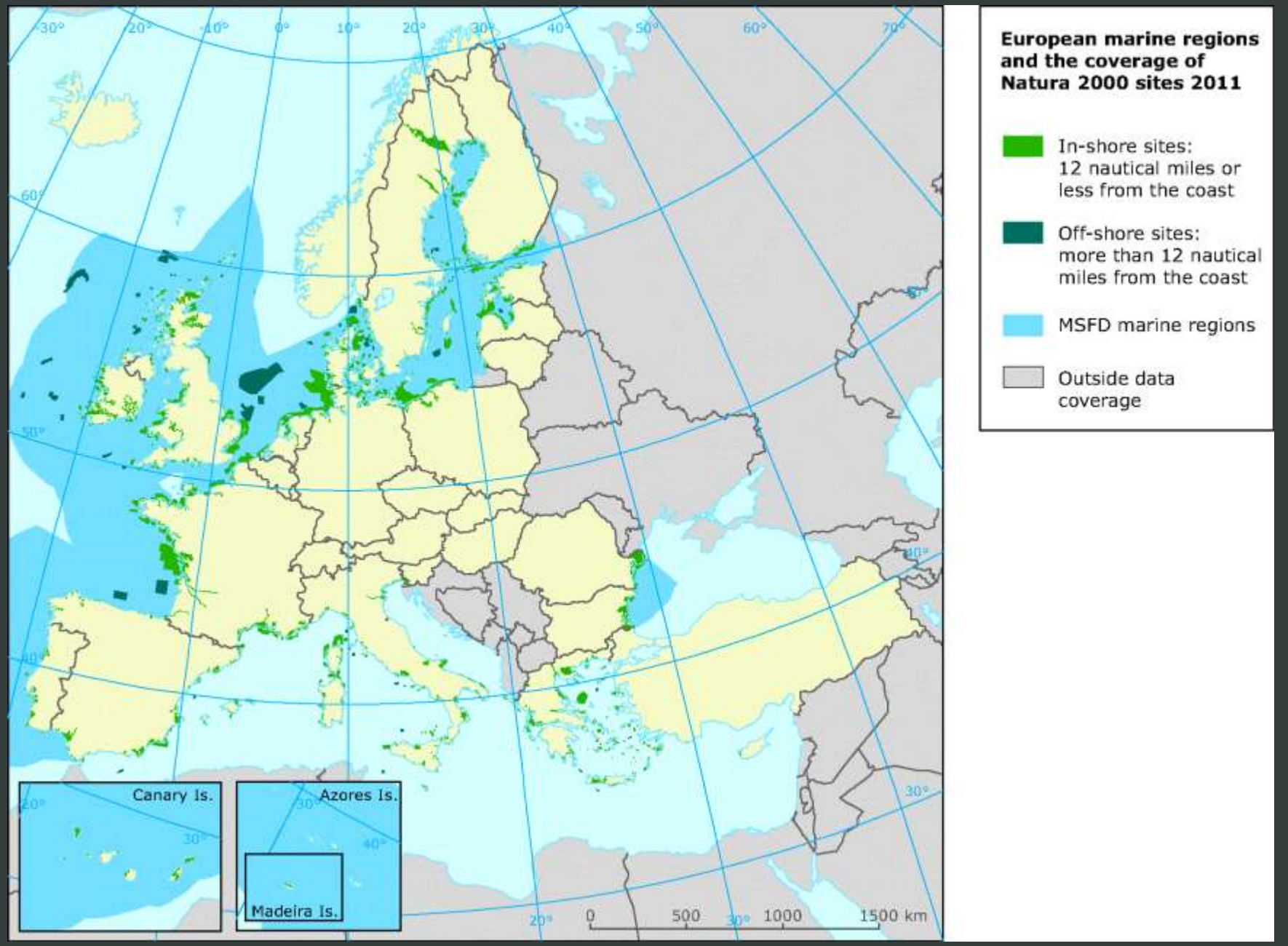


- 18% of the EU's land territory is protected under the Natura 2000 Network



- There are 105,000 nationally designated protected sites in European Environment Agency member and cooperating countries, ranging in size from the 1.3 million ha Vatnajokulsthjodgardur National Park in Iceland down to individual trees, such as the Kaèja smreka in Godovic, Slovenia.

- However, only 4% of the sea controlled by countries of the European Union is included within the Natura 2000 network of protected areas, according to a new report from the EEA.



Despite a huge growth in protected areas in recent years, many of Europe's species still face an uncertain future. Europe as a whole has seen more habitat fragmentation than any other continent. So we need to work harder to conserve species in the wider countryside.

EEA Executive Director Jacqueline McGlade

- The EU has a target for 10% of its seas to be designated as Marine Protected Areas (MPAs), although this aim has not yet been achieved. Further out, habitats at sea are particularly under-represented in Europe’s protected areas.

- Protected areas in Europe cover a huge variety of natural environments, across eleven distinct biogeographic regions, from the Arctic polar deserts and the boreal forests in the North to the arid or dense mattoral shrubland in the south.

Europe's protected areas encompass a wide variety of landscapes and management systems.

- Some protected areas are strict wildlife reserves, and even national parks, preserving the unique and precious biodiversity of Europe by means of strict regulations on development and building.
- Others are managed to ensure that European citizens are able to appreciate the great natural beauty of our mountains, forests and wilderness areas.

Europe's protected areas encompass a wide variety of landscapes and management systems.

- Many protected areas are established in regions of privately-held land, with the goal of encouraging agricultural practices that respect the natural environment.
- Often, protected area sites are managed with the aim of achieving a combination of these goals.

At all times, they ensure a sustainable and coordinated approach to the stewardship of nature, our most precious resource.

Management of protected areas throughout the years.

- Historically, ownership of the protected area was usually the domain of the monarch, who used the protected area for his or her personal benefit.
- In Europe's early history, the protected area was valued for either its wild game or as a resource for timber.
- But by the 16th and 17th centuries, the natural beauty of an area began to take precedence over the utility of the resources it contained.

Management of protected areas throughout the years.

- But starting in the 19th century, protected areas began to be created by private associations purchasing parcels of land.
- This time the intrinsic value of nature was emphasised over strictly aesthetic concerns.

Sierra de Guadarrama in the 1930s, Natura 2000 site, Spain

Photo courtesy of EUROPARC-España

Management of protected areas throughout the years.

- In the 20th century, ownership of the protected area began to change again, with the modern state taking ownership of the protected area on behalf of its citizens.
- This was the idea of the protected area as a 'national park'.

Danube Delta National Park, Natura 2000 site, Romania

© Carlos Romão

Management of protected areas throughout the years.

- The concept of the national park was established in the 19th century in North America, where large parcels of undeveloped land were protected from human exploitation or habitation.
- After the Second World War, the emphasis on nature's intrinsic value began to give way to a new concern: the importance of maintaining biodiversity in protected areas.

Management of protected areas throughout the years.

- The first European country to establish national parks that were owned by the state was Sweden, when it passed legislation to that end in 1909.
- Switzerland followed with similar legislation in 1914.

Management of protected areas throughout the years.

- Finally, in the past 30 years or so, a more blended model has emerged, in which protected areas are valued for several reasons: **as an aesthetic artefact, a repository of biodiversity, and a potential source of economic wealth (provided that wealth is sustainably used).**

Table 1.1 The changing perception of protected areas

	As it was (19th century) Protected areas were:	As it is becoming (21st century) Protected areas are:
Objectives	– Set aside for conservation – Established mainly for spectacular wildlife and scenic protection – Managed mainly for visitors and tourists – Valued as wilderness – About protection	– Run also with social and economic objectives – Often set up for scientific, economic and cultural reasons – Managed more with local people in mind – Valued for the cultural importance of 'wilderness' – Also about restoration and rehabilitation
Governance	– Run by central government	– Run by many partners
Local people	– Planned and managed against people – Managed without regard to local opinions	– Run with, for, and in some cases by local people – Managed to meet the needs of local people
Wider context	– Developed separately – Managed as 'islands'	– Planned as part of national, regional and international systems – Developed as 'networks' (strictly protected areas, buffered and linked by green corridors)
Perceptions	– Viewed primarily as a national asset – Viewed only as a national concern	– Viewed also as a community asset – Viewed also as an international concern
Management techniques	– Managed reactively within short timescale – Managed in a technocratic way	– Managed adaptively in long-term perspective – Managed with political considerations
Finance	– Paid for by taxpayer	– Paid for from many sources
Management skills	– Managed by scientists and natural resource experts – Expert led	– Managed by multi-skilled individuals – Drawing on local knowledge

Source: Phillips, 2003.

Biodiversity Under Pressure

- The EU aims to halt the loss of biodiversity and degradation of ecosystem services in the EU by 2020, and also work to slow biodiversity loss at the global level.
- Protected areas are important for meeting this target because they can provide a better environment for wildlife, which is increasingly under pressure in many parts of Europe.

Biodiversity Under Pressure

- The European landscape is increasingly fragmented by roads, railways and towns, blocking migration and dividing species into unsustainably small populations.
- Areas of land are often unable to support high levels of biodiversity when they are split into smaller and smaller parcels.

Biodiversity Under Pressure

- Between 1990 and 2006, the area of Europe covered by artificial surfaces increased by around 8%. Most dams prevent migratory fish species from reaching many inland river basins.

Biodiversity Under Pressure

- Agriculture has also intensified in many parts of Europe, leading to increased pollution from nitrates and other substances in some regions.
- This affects many species of plants and animals which are dependent on low-intensity farming.

Biodiversity Under Pressure

- Other environmental changes come from climate change, invasive alien species, overfishing and pollution.

All these pressures can have a cumulative effect, in the worst cases pushing species and ecosystems into irreversible decline.

EU biodiversity strategy to 2020

- The European Commission in 2011 also adopted a new biodiversity strategy 'Our life insurance, our natural capital: an EU biodiversity strategy to 2020'.
- The strategy also provides a framework for the EU to meet its own independent biodiversity objectives, and it sets out both a long-term vision and a short-term target as follows:

EU biodiversity strategy to 2020

2020 headline target

Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.

EU biodiversity strategy to 2020

2050 vision

By 2050, European Union biodiversity and the ecosystem services it provides — its natural capital — are protected, valued and appropriately restored for biodiversity's intrinsic value, and for their essential contribution to human wellbeing and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided.

Environmental policy instruments important for the establishment of protected areas in Europe

Conventions at the global level		
The Convention on Wetlands of International Importance (Ramsar Convention) *	1971	The Convention on Wetlands is an intergovernmental treaty signed in Ramsar, Iran, and came into force in 1975. It is the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.
The World Heritage Convention *	1972	The World Heritage Convention was adopted by the General Conference of UNESCO, and links nature conservation and the preservation of cultural properties.
The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)	1979	The Convention on the Conservation of Migratory Species of Wild Animals was signed in Bonn, Germany and came into force in 1983.
United Nations Convention on the Law of the Sea	1982	The Convention has been ratified or acceded to by more than 150 states and the European Union. It governs all aspects of ocean space from delimitations to environmental control, scientific research, economic and commercial activities, technology and the settlement of disputes relating to ocean matters.
Convention on Biological Diversity (CBD)	1992	The objectives of the Convention are: conservation and sustainable use of biological diversity; and the fair and equitable sharing of the benefits arising out of the use of genetic resources. The CBD came into force in 1993.

Environmental policy instruments important for the establishment of protected areas in Europe

Conventions at the pan-European level		
The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) *	1979	The Bern Convention is a binding international legal instrument in the field of nature conservation, which covers most of the natural heritage of the European continent and extends to some states of Africa. It was opened for signing in Bern, Switzerland, and came into force in 1982.
Alpine Convention	1994	The Alpine Convention sets out the basic principles and general measures for sustainable development in the Alpine region and includes the Protocol for the Implementation of the Convention in the field of Nature Protection and Landscape Conservation. The Convention entered into force in March 1995.
European Landscape Convention (Florence Convention)	2000	The European Landscape Convention promotes the protection, management and planning of European landscapes, and organises European cooperation on landscape issues. The Convention was adopted in Florence, Italy, and came into force in March 2004.
Carpathian Convention	2003	The Carpathian Convention, signed in Kiev, Ukraine, provides the framework for cooperation and multi-sectoral policy coordination, a platform for joint strategies for sustainable development, and a forum for dialogue between all stakeholders in the Carpathian region.

Environmental policy instruments important for the establishment of protected areas in Europe

Conventions on pan-European seas		
Barcelona Convention *	1976	The Convention for the Protection Of The Mediterranean Sea Against Pollution came into force in 1978. It was revised in Barcelona, Spain, in June 1995 as the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean.
Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki Convention)	1992	The Convention entered into force in January 2000. The Helsinki Commission (HELCOM) is the governing body of the Convention, which works to protect the marine environment of the Baltic Sea from all sources of pollution through intergovernmental cooperation between countries.
The Convention for the Protection of the marine Environment of the North-East Atlantic (the OSPAR Convention)	1992	The OSPAR Convention is the current legal instrument guiding international cooperation on the protection of the marine environment of the North-East Atlantic. It unified, up-dated, and extended the 1972 Oslo Convention against dumping and the 1974 Paris Convention covering land-based sources and the offshore industry. The new annex on biodiversity and ecosystems was adopted in 1998 to cover non-polluting human activities that can adversely affect the sea.
The Convention on the Protection of the Black Sea Against Pollution (Bucharest Convention)	1992	The Convention was signed in Bucharest, Romania, and was ratified by all six Black Sea countries in the beginning of 1994. The Convention has given rise to many schemes for the protection of natural habitats. They include the Black Sea Environmental Programme, which organizes conservation work in habitats that are critical for populations of priority species.
Arctic Council	1996	The Ottawa Declaration formally established the Arctic Council as a high level intergovernmental forum providing the means for promoting cooperation, coordination and interaction among the Arctic States, with the involvement of the Arctic indigenous communities and other Arctic inhabitants on common Arctic issues, in particular issues of sustainable development and environmental protection in the Arctic.

Environmental policy instruments important for the establishment of protected areas in Europe

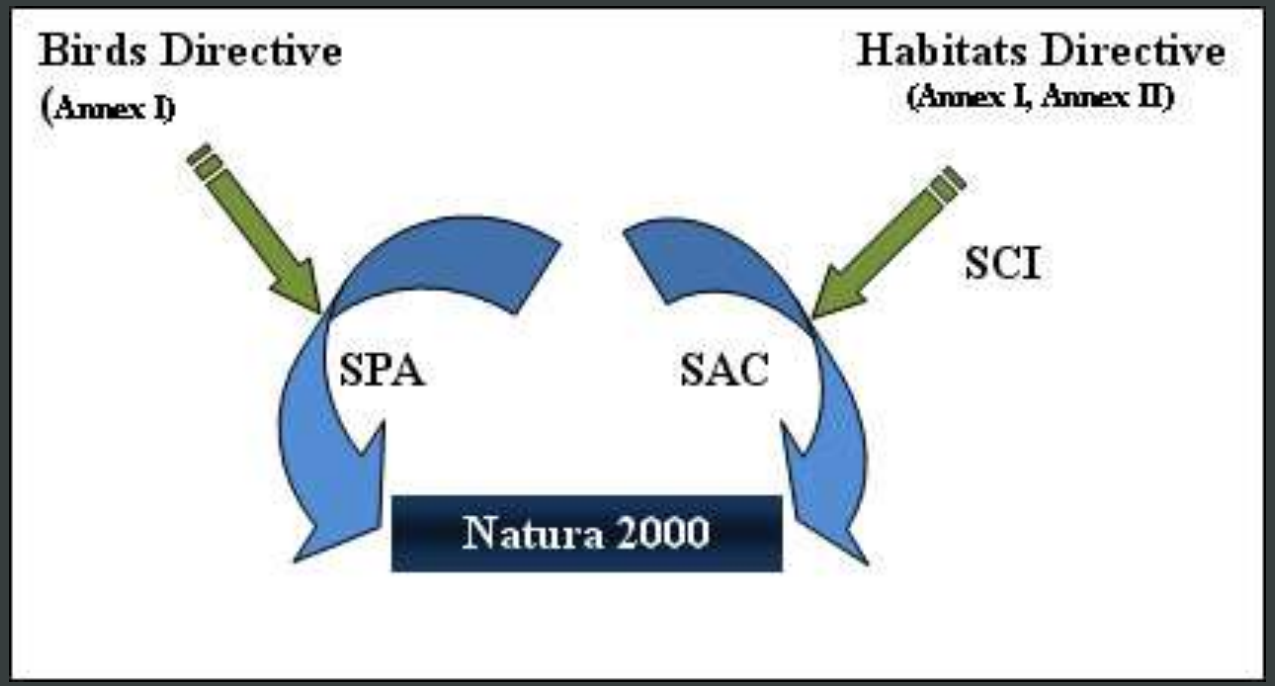
Directives of the European Union		
Directive 79/409/EEC on the conservation of wild birds (Birds Directive) *	1979	The Birds Directive is the EU's oldest piece of nature legislation and one of the most important, creating a comprehensive scheme of protection for all wild bird species naturally occurring in the Union. Following numerous updates over the years, the codified version was published in 2009 (Directive 2009/147/EC).
Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) *	1992	The Habitats Directive forms the cornerstone of Europe's nature conservation policy. It is built around two elements: the Natura 2000 network of protected sites and the strict system of species protection.
Directive 2008/56/EC establishing a framework for community action in the field of marine environmental policy *	2008	The Marine Strategy Framework Directive identifies spatial protection measures as a tool for achieving good environmental status.

Environmental policy instruments important for the establishment of protected areas in Europe

Other instruments		
The London Convention Relative to the Preservation of Fauna and Flora in their Natural State	1933	This Convention had objectives to protect species of value as hunting trophies and to create protected areas in Africa. For the first time at international level the Convention provided a definition of national parks and nature reserves.
European Diploma of Protected Areas	1965	This instrument of the Council of Europe is awarded to protected areas because of their outstanding scientific, cultural or aesthetic qualities; they must also be the subject of a suitable conservation scheme which may be combined with a sustainable development programme.
Man and the Biosphere Programme (MAB) *	1971	UNESCO's MAB Programme is an Intergovernmental Scientific Programme aiming to set a scientific basis for the improvement of the relationships between people and their environment globally, among which through the creation of Biosphere reserves.
European Network of Biogenetic Reserves *	1976	The network of Biogenetic Reserves was started by the Council of Europe to encourage Member States to cooperate with a view to conserving representative examples of natural habitats that are especially valuable for nature conservation in Europe.
Global Geoparks Network *	1991	The Geoparks initiative was launched by UNESCO in response to the perceived need for an international initiative that recognises sites representing an earth science interest. For the purpose, a new internationally recognised label 'UNESCO Geopark' was developed.

Natura 2000 network

- **Natura 2000** is the centrepiece of EU nature & biodiversity policy.
- It is an EUwide network of nature protection areas established under



Natura 2000 network

- The aim of the network is to protect vulnerable habitats (231 different types) and species (over 900 taxa) across their natural range in Europe and
- ensure that they are restored to, or maintained at, a favourable conservation status.

Natura 2000 network

- It is comprised of Special Areas of Conservation (SAC) designated by Member States under the Habitats Directive, and also incorporates Special Protection Areas (SPAs) which they designate under the 1979 Birds Directive.

It is the most extensive protected area system worldwide, at the moment comprising more than 26.000 sites.

Natura 2000 network

- Natura 2000 is not a system of strict nature reserves where all human activities are excluded.
- Whereas the network will certainly include nature reserves most of the land is likely to continue to be privately owned and the emphasis will be on ensuring that future management is sustainable, both ecologically and economically.
- The establishment of this network of protected areas also fulfils a Community obligation under the UN Convention on Biological Diversity.

Natura 2000 network

- Member States have to prepare appropriate management plans and other measures which correspond to the ecological requirements of the natural habitat types and the species of Community interest.
- SPA designated under the Birds Directive need to be managed in accordance with the ecological needs of habitats of birds.

Natura 2000 network

- According to the EU nature directives the conservation objectives should be met while taking account of economic, social, cultural, regional and recreational requirements.
- It is for the Member States to establish the most appropriate methods and instruments for implementing the directives and for achieving the conservation objectives of Natura 2000 sites.

Natura 2000 network

Natura 2000 network is

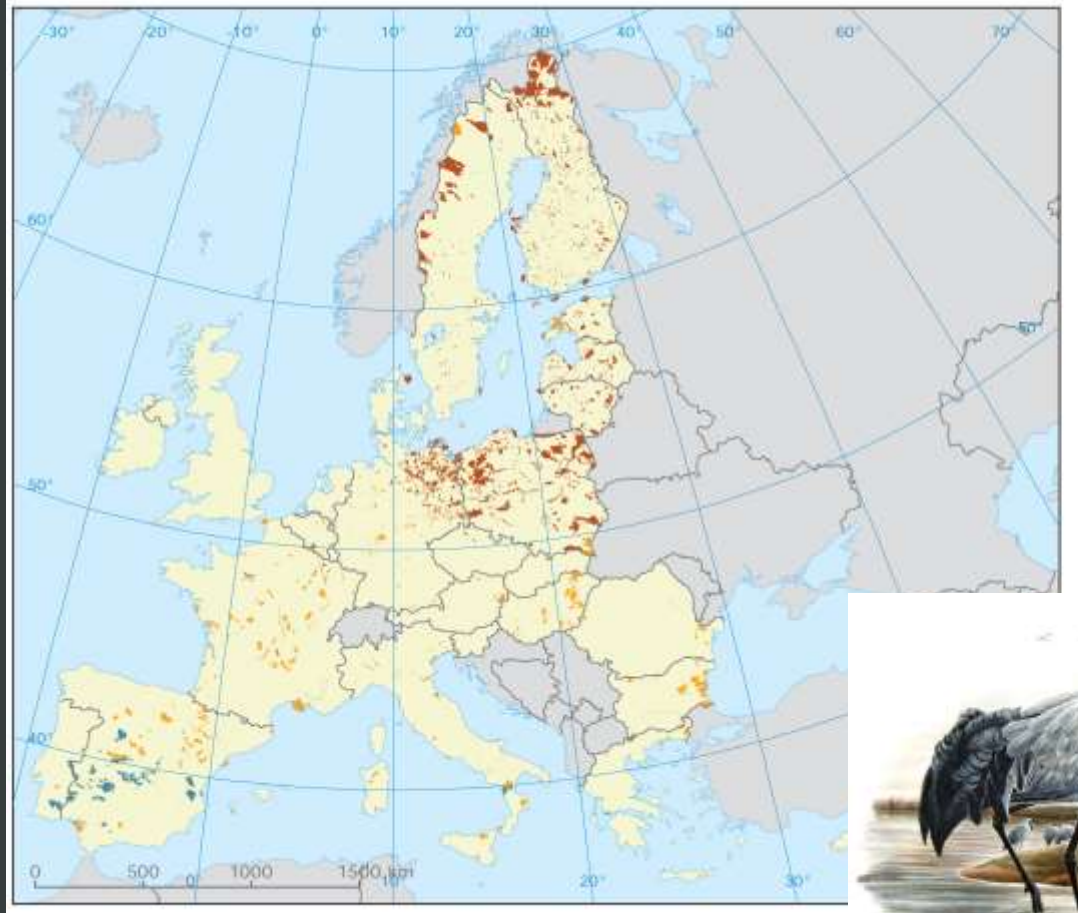
- ecologically coherent if it includes sufficient sites — in number and area — distributed over a wide geographic area to achieve favourable conservation status and covers the full range of variation of habitat types and species mentioned in the European Union's Habitats Directive.
- In addition, migration, dispersal and genetic exchange of individuals between sites should be possible: this important additional feature of ecological coherence is 'connectivity' between the sites of the network.

Natura 2000 network

This can be illustrated by the case of the crane (*Grus grus*) for which Special Protection Areas — the bird component of Natura 2000 — have been classified across its European range and flyways.

These SPAs cover all key areas of the cranes' life cycle.

Map 5.1 Special Protection Areas classified for the crane (*Grus grus*) across EU



Source: Natura 2000 database, December 2011.

Natura 2000 network

- At the end of 2011, the network accounted for over 26.400 sites with a total surface area of about 986.000 km^2, comprising nearly 768.000 km^2 of land, and close to 218.000 km^2 of sea.
- The terrestrial component of the network represents 17.9% of the EU-27 land territory, whereas the sea component covers only a small part of the marine waters under the jurisdiction of EU Member States (about 4%).

Natura 2000 network

- The size of the sites across Europe varies considerably, with almost a third of the sites bigger than 1.000 ha, another third smaller than 100 ha, and the rest between 100 and 1.000 ha.

- The biggest marine site is Dogger Bank in the United Kingdom (1.233.115 ha), and the largest terrestrial site is Vindelfjällen in Sweden (554.675 ha).

Table 5.1 Percentage of Natura 2000 sites in each area-size class

Area-size	Natura 2000 sites (%)
< 1 ha	2
1–100 ha	33
100–1 000 ha	33
1 000–10 000 ha	23
> 10 000 ha	9

Source: Natura 2000 database, December 2011.

Natura 2000 network

Main ecosystems represented in the network

The network covers various types of ecosystems. Forests account for nearly half of the network land cover, and agro-ecosystems for more than one-third.

Table 5.2 Surface (%) of Natura 2000 (SPAs and SCIs together), SPAs (under Birds Directive) and SCIs (under Habitats Directive) covered by different ecosystems

Ecosystem type	Natura 2000	SPAs	SCIs
Agro-ecosystems	38.0	40.5	33.0
Regularly cultivated	17.5	20.0	11.5
Need extensive practice	14.0	14.0	15.5
Complex agro-ecosystems	6.5	6.5	6.0
Grassland ecosystems	11.0	12.0	10.5
Heath and scrub ecosystems	16.0	15.0	18.0
Forest ecosystems	46.0	43.0	48.0
Wetland ecosystems	11.0	12.0	13.0
Lake and river ecosystems	4.0	4.0	4.0
Coastal ecosystems	3.0	4.0	3.5

Note: It is not possible to add percentages of each column due to overlap between the different CLC classes used as proxies for the ecosystem types. For example some grassland ecosystems are also agro-ecosystems. This means a simple addition would 'double count' some areas.

Source: Natura 2000, CLC 2006 for the EU except Greece and the United Kingdom (where CLC 2000 was used).

Natura 2000 network

Main ecosystems represented in the network

These agro-ecosystems include a substantial proportion of regularly cultivated land. Wetlands and grasslands cover slightly more than 10% each.

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Management of Protected Areas

Six management categories (according to IUCN)

1.a **Strict nature reserve**: Strictly protected for biodiversity and also possibly geological/ geomorphological features, where human visitation, use and impacts are controlled and limited to ensure protection of the conservation values.

1.b **Wilderness area**: Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition.

The Seychelles remote Category Ia Aldabra Atoll in the Western Indian Ocean provides an ideal natural laboratory for studying tropical marine ecosystems and related environments (such as seagrass and mangroves). © *Sue Stolton*

The highly productive waters protected by the Atol das Rocas Nature Reserve (Category Ia, Brazil) provide feeding grounds for species such as tuna, billfish, cetaceans, sharks and marine turtles as they migrate to the Eastern Atlantic coast of Africa. © *Pedro Rosabal*

The Imfolozi Wilderness Area (in the Imfolozi Game Reserve, KwaZulu Natal, South Africa) is a provincially managed category 1b area from which came the impetus to create other wilderness areas in Africa. Here, "trailists" with the Wilderness Leadership School visit the area on a five-day walking trail that utilizes low-impact camping practices. © *Vance G. Martin*

Management of Protected Areas

Six management categories (according to IUCN)

2. **National park**: Large natural or near-natural areas protecting large-scale ecological processes with characteristic species and ecosystems, which also have environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities.

Kaziranga is a classic category II National Park. Famous for the Great Indian one-horned rhinoceros, the landscape of Kaziranga can be enjoyed by tourists on elephant rides or boat trips on the Brahmaputra River. © *Nigel Dudley*

The Category II Grampians National Park in Victoria, Australia protects 975 vascular species; one third of the State's flora, 148 species of which are threatened in Victoria. © *Nigel Dudley*

Management of Protected Areas

Six management categories (according to IUCN)

3. **Natural monument or feature**: Areas set aside to protect a specific natural monument, which can be a landform, sea mount, marine cavern, geological feature such as a cave, or a living feature such as an ancient grove.

Organ Pipe Cactus National Monument (category III) protects the majority of the organ pipe cactus found in the United States. © *Nigel Dudley*

Management of Protected Areas

Six management categories (according to IUCN)

4. **Habitat/species management area**: Areas to protect particular species or habitats, where management reflects this priority. Many will need regular, active interventions to meet the needs of particular species or habitats, but this is not a requirement of the category.

Covering less than 1 km², the category IV Insel Vilm Nature Reserve has some of the oldest oak and beech woods in Germany; visitation is strictly controlled and much of the island is closed to human presence. © *Sue Stolton*

The only remaining rainforest areas in Singapore are protected in the Bukit Timah Nature Reserve (164 ha) and the adjacent Central Catchment Nature Reserve (about 2000 ha), both category IV protected areas. Together they comprise less than 4 percent of the original rainforest. © *Nigel Dudley*

Management of Protected Areas

Six management categories (according to IUCN)

5. **Protected landscape or seascape**: Where the interaction of people and nature over time has produced a distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature onservation and other values.

The category V Snowdonia National Park in Wales protects extensive areas of windswept uplands and jagged peaks within a cultural landscape, dominated by the impacts of pastoralism and the former mining industry. © *Nigel Dudley*

Management of Protected Areas

Six management categories (according to IUCN)

6. **Protected areas with sustainable use of natural resources**: Areas which conserve ecosystems, together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims.

The Mamirauá Sustainable Development Reserve (category VI) in Brazil is part of a large conservation complex (over 6 million hectares) in the Amazon Basin. Its management balances the need to conserve biodiversity whilst providing options to enhance the sustainable livelihoods of local people. © *Jim Barborak*

Figure 1. Naturalness and IUCN protected area categories

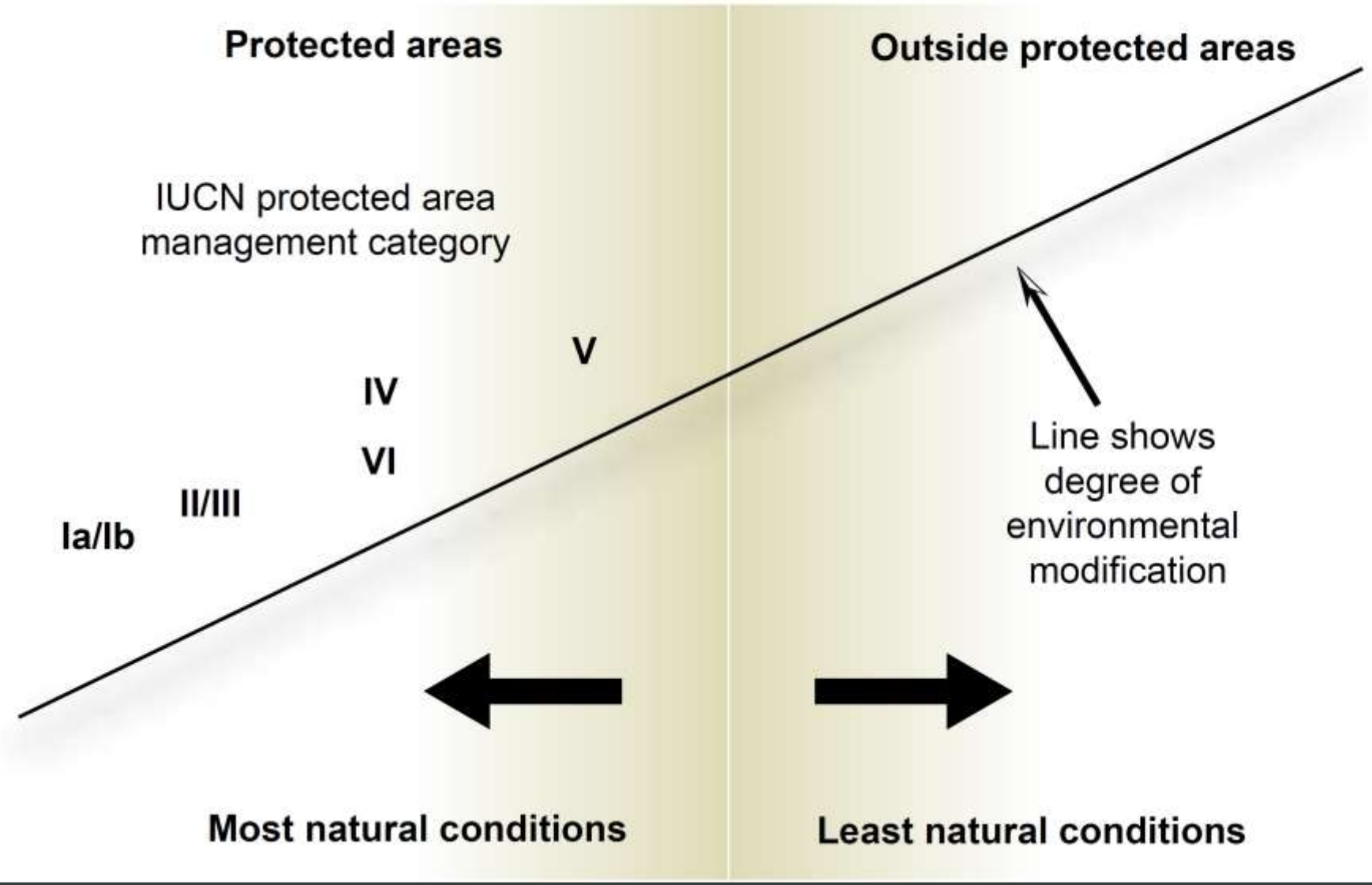


Table 2.2 Matrix of management objectives and IUCN protected area management categories (IUCN, 1994)

Management objective	Ia	Ib	II	III	IV	V	VI
Scientific research	1	3	2	2	2	2	3
Wilderness protection	2	1	2	3	3	–	2
Preservation of species and genetic diversity (biodiversity)	1	2	1	1	1	2	1
Maintenance of environmental services	2	1	1	–	1	2	1
Protection of specific natural/ cultural features	–	–	2	1	3	1	3
Tourism and recreation*	**–**	**2**	**1**	**1**	**3**	**1**	**3**
Education	–	–	2	2	2	2	3
Sustainable use of resources from natural ecosystems	–	3	3	–	2	2	1
Maintenance of cultural/traditional attributes	–	–	–	–	–	1	2

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

Management of Protected Areas

Potential benefits of tourism in protected areas

- Tourism in protected areas produces benefits and costs
- Tourists visit these protected areas to understand and appreciate the values for which the area was established and to gain personal benefits.
- Tourism planning and development aims to take advantage of the interest shown by tourists so as to: enhance economic opportunities, protect the natural and cultural heritage, and advance the quality of life of all concerned.

Management of Protected Areas

Potential benefits of tourism in protected areas

Enhancing economic opportunity	▫ Increases jobs for local residents ▫ Increases income ▫ Stimulates new tourism enterprises, and stimulates and diversifies the local economy ▫ Encourages local manufacture of goods ▫ Obtains new markets and foreign exchange ▫ Improves living standards ▫ Generates local tax revenues ▫ Enables employees to learn new skills ▫ Increases funding for protected areas and local communities

Management of Protected Areas

Potential benefits of tourism in protected areas

Protecting natural and cultural heritage	▫ Protects ecological processes and watersheds ▫ Conserves biodiversity (including genes, species and ecosystems) ▫ Protects, conserves and values cultural and built heritage resources ▫ Creates economic value and protects resources which otherwise have no perceived value to residents, or represent a cost rather than a benefit ▫ Transmits conservation values, through education and interpretation ▫ Helps to communicate and interpret the values of natural and built heritage and of cultural inheritance to visitors and residents of visited areas, thus building a new generation of responsible consumers ▫ Supports research and development of good environmental practices and management systems to influence the operation of travel and tourism businesses, as well as visitor behaviour at destinations ▫ Improves local facilities, transportation and communications ▫ Helps develop self-financing mechanisms for protected area operations

Management of Protected Areas

Potential benefits of tourism in protected areas

Enhancing quality of life	▫ Promotes aesthetic, spiritual, and other values related to well-being ▫ Supports environmental education for visitors and locals ▫ Establishes attractive environments for destinations, for residents as much as visitors, which may support other compatible new activities, from fishing to service or product-based industries ▫ Improves intercultural understanding ▫ Encourages the development of culture, crafts and the arts ▫ Increases the education level of local people ▫ Encourages people to learn the languages and cultures of foreign tourists ▫ Encourages local people to value their local culture and environments

Management of Protected Areas

Potential risks of tourism in protected areas

- Negative effects can and do result from tourist visitation, but many of them can be competently managed and alleviated.
- Tourism brings increased demand for goods, services and facilities, such as lodging, restaurants, other attractions, and personal vacation properties.
- Poorly planned tourism development can lead to increased congestion, littering, vandalism and crime.

Management of Protected Areas

Potential risks of tourism in protected areas

Ecosystems	▫ The construction of accommodation, visitor centres, infrastructure, and other services has a direct impact on the environment, from vegetation removal, animal disturbance elimination of habitats, impacts on drainage etc. ▫ Wildlife habitat may be significantly changed (travel routes, hunting areas, breeding areas, etc.) by all kinds of tourist development and use.
Soils	▫ Soil compaction can occur in certain well-used areas. ▫ Soil removal and erosion also occurs, and may continue after the disturbance is gone.
Vegetation	▫ Concentrated use around facilities has a negative effect on vegetation. ▫ Transportation may have direct negative impacts on the environment (e.g. vegetation removal, weed transmission, animal disturbance). ▫ Fire frequency may change due to tourists and park tourism management.

Management of Protected Areas

Potential risks of tourism in protected areas

Water	▫ Increased demands for fresh water. ▫ Disposal of sewage or litter in rivers, lakes or oceans. ▫ Release of oil and fuel from ships and smaller craft. ▫ Propeller-driven watercraft may affect certain aquatic plants and species.
Air	▫ Motorised transportation may cause pollution from emissions (from plane, train, ship or automobile).

Management of Protected Areas

Potential risks of tourism in protected areas

Wildlife	▫ Hunting and fishing may change population dynamics. ▫ Hunters and fishers may demand the introduction of foreign species, and increased populations of target animals. ▫ Impacts occur on insects and small invertebrates, from effects of transportation, introduced species, etc. ▫ Disturbance by visitors can occur for all species, including those that are not attracting visitors. ▫ Disturbance can be of several kinds: noise, visual or harassing behaviour. ▫ The impact can last beyond the time of initial contact (e.g. before heart-rate returns to normal, or before birds alight, or mammals resume breeding or eating). ▫ Marine mammals may be hurt or killed by boat impacts or propeller cuts. ▫ Habituation to humans can cause changed wildlife behaviour, such as approaching people for food.

Management of Protected Areas

Protected Area Management Planning System

- Each protected area needs a plan that describes how tourism and associated development will be managed.
- The plan represents the desired future state or condition of the protected area and the most efficient and equitable path to that future.

Management of Protected Areas

Protected Area Management Planning System

- Such a plan details the specific goals and objectives mandated for the area in its founding legislation, decree or government policy
- Describes the objectives for tourism development
- Specifies the management actions, budgeting and financing

Black Bear in camp-site in Killarney Provincial Park, Ontario, Canada

Management of the interface between dangerous wildlife and park visitors is a unique challenge.
©*Paul F. J. Eagles*

Management of Protected Areas

Guidelines for successful planning

Criteria	Planning guidelines	Comments
Clarity in plan production	n State how the protected area is to be managed. n State how surprises are to be dealt with. n State how funding and personnel will be raised and allocated. n State how monitoring will occur. n State a specific time frame. n Provide for periodic review.	n Protected area personnel may change, so the document "outlives" any one person. n Provides continuity between changes in government.

Management of Protected Areas

Guidelines for successful planning

Implementation oriented	▫ Make provisions for implementation during the planning process. ▫ Indicate roles and responsibilities. ▫ Work with politicians, interest groups and local communities to ensure implementation.	▫ Plans are written to change or work toward future conditions. This only happens if they are implemented. Without implementation, plans are useless.
Socially acceptable	▫ Invite input from a large range of interests. ▫ Use consensus-building processes. ▫ Use technical planning assistance. ▫ Social acceptability increases potential for implementation.	▫ Those affected by plans must find them acceptable, as must those with "veto" powers. ▫ Consensus is not necessarily unanimity.

Management of Protected Areas

Guidelines for successful planning

Mutual learning oriented	▫ Obtain expectations about anticipated experiences/ programmes/facilities from visitors. ▫ Determine how park plans and business plans affect each other, jointly define the tourism product, and develop marketing plans cooperatively. ▫ Managers should outline legal mission of the park, implications of different management strategies, and mitigation approaches. ▫ Scientists should determine cause-effect relationships, and social-environmental consequences of actions. ▫ Determine importance of benefits and values from citizens. ▫ Techniques that empower stakeholders to become more aware of the issues increase their ability to generate innovative approaches.	▫ Enabling different publics and stakeholders to come together provides opportunities for mutual learning and appreciation. ▫ Many-way dialogue helps active mutual involvement. ▫ Avoid underestimating the competence of citizens. ▫ Providing a range of venues for this learning is helpful, not only formal venues. ▫ Do not forget associated agency staff and volunteers.

Management of Protected Areas

Guidelines for successful planning

Responsibility and shared ownership	n Use many involvement techniques at all stages of the planning process (e.g. workshops, field trips, open houses, focus groups, advisory committees, etc.). n Create responsibilities for stakeholder groups. n Encourage stakeholder participation in issue identification, evaluation of alternatives and implementation. n Share information (e.g. about briefings or meetings) rather than provide information (e.g. displays, draft plans) – this creates more legitimate stakeholder involvement.	n Implementation of the plan is much enhanced if all stakeholders take responsibility and ownership of the plan. n The publics "own" the plan, not the agency. n Some workshops can be run over several days to build strong sense of ownership.

Management of Protected Areas

Guidelines for successful planning

The making of a protected area

Representative of wide interests	▪ Recognise that protected area tourism affects, and is affected by, many political and social interests at national and community level. ▪ Embody a wide range of values and interests through public participation. ▪ Conduct a stakeholder analysis to identify the types of values affected by plan.	▪ Active engagement of stakeholders secures support. ▪ Even those fundamentally opposed to park's objectives can benefit from seeing their interests honestly handled.
Relationship building oriented	▪ Use planning process to strengthen relationships, secure community commitment and build support for funding and personnel. ▪ Demonstrate to local communities how they might benefit from tourism in the protected area. ▪ Seek information, rather than provide information: this builds greater levels of trust.	▪ Agencies need to overcome distrust or other problems, by openness. ▪ Open communication is necessary with the community and within the agency.

Management of Protected Areas

Environmental Impact Assessment

- Each project within or nearby a Natura 2000 site requires a EIA study on the effects of the project on the environment
- The EIA procedure ensures that the environmental consequences of projects are identified and assessed before authorisation is given.

Management of Protected Areas

Conserving biodiversity in protected areas

- Discouraging random path-making that causes erosion and destroys habitat

Some urban protected areas are transected by long-distance trails. In Angeles National Forest near Los Angeles, hikers set out on a section of the 4,300-kilometre-long Pacific Crest Trail. Ted Trzyna.

Management of Protected Areas

Conserving biodiversity in protected areas

- Discouraging random path-making that causes erosion and destroys habitat
- Taking advantage of volunteers to remove invasive alien plant species

Although volunteers can contribute in many ways, cleaning up litter is a common and very welcome activity. Along the beach in Table Mountain National Park in Cape Town. TMNP

Management of Protected Areas

Conserving biodiversity in protected areas

- Discouraging random path-making that causes erosion and destroys habitat
- Taking advantage of volunteers to remove invasive alien plant species
- Preventing littering that harms or kills wildlife

Providing separate containers encourages recycling of bottles and cans. A bin in the Hong Kong Country Parks. Ted Trzyna.

Management of Protected Areas

Conserving biodiversity in protected areas

- Discouraging random path-making that causes erosion and destroys habitat
- Taking advantage of volunteers to remove invasive alien plant species
- Preventing littering that harms or kills wildlife

Globally, cigarette butts are the most common form of litter. A juvenile red billed gull examines one in New Zealand (the photographer assures us the bird didn't swallow it). Tony Wills/Creative Commons BY-SA-3.0.

Management of Protected Areas

Conserving biodiversity in protected areas

- Discouraging random path-making that causes erosion and destroys habitat
- Taking advantage of volunteers to remove invasive alien plant species
- Preventing littering that harms or kills wildlife
- Avoiding human-wildlife conflict

Large predators are a concern in and around some urban protected areas. In Los Angeles, this mountain lion found its way to a toilet in a city park well beyond the boundaries of Santa Monica Mountains National Recreation Area. SMMNRA.

Management of Protected Areas

Conserving biodiversity in protected areas

- Discouraging random path-making that causes erosion and destroys habitat
- Taking advantage of volunteers to remove invasive alien plant species
- Preventing littering that harms or kills wildlife
- Avoiding human-wildlife conflict
- Controlling poaching

Collectors seek specimens of rare species of animals and plants for pleasure or profit. In Golden Gate National Recreation Area in the San Francisco region, the mission blue butterfly is such a target. GGNRA.

Management of Protected Areas

Conserving biodiversity in protected areas

- Discouraging random path-making that causes erosion and destroys habitat
- Taking advantage of volunteers to remove invasive alien plant species
- Preventing littering that harms or kills wildlife
- Avoiding human-wildlife conflict
- Controlling poaching
- Reduce impacts of noise

Noise is often a problem in urban protected areas. This sign is in Muir Woods National Monument near San Francisco, where a pilot project is looking into ways of reducing noise and promoting appreciation of natural sounds. Ted Trzyna.

Management of Protected Areas

Conserving biodiversity in protected areas

- Controlling invasive species of animals and plants that destroy natural habitat and native species

Exotic pets that find their way into protected areas can pose serious problems. In Everglades National Park in Florida, invasive Burmese pythons are voracious feeders on native wildlife. USNPS.

Management of Protected Areas

Conserving biodiversity in protected areas

- Controlling invasive species of animals and plants that destroy natural habitat and native species
- Maintaining connectivity with other natural areas in the face of habitat fragmentation caused by urbanization

Corridors linking natural areas can include tunnels and bridges designed to enable wildlife movement. This "toad tunnel" under a German highway was built to be used by migrating amphibians. Christian Fischer/Creative Commons SA-3.0.

Management of Protected Areas

Conserving biodiversity in protected areas

- Looking at cities and their surroundings as ecological systems that include biodiversity along with built, social and other elements

Although they are not protected areas as IUCN defines them, conventional city parks bring a degree of nature into the built environment. Planty, a tree-lined park surrounding the Old Town of Kraków, Poland's second-largest city, was created in the early 19th century. Ferdzi/Creative Commons SA-3.0.

Management of Protected Areas

Conserving biodiversity in protected areas

- Incorporating “green infrastructure” into the built urban environment

Very small protected areas are commonly included in comprehensive local biodiversity strategies. The 0.8-hectare Camley Street Natural Park, seen from across Regent's Canal, is one of many such areas described in the London Mayor's Biodiversity Strategy. © Pierre Terre/Creative Commons BY-SA-2.0.

Management of Protected Areas

Conserving biodiversity in protected areas

- Provide access for all

Accommodating disabled people should be a priority for urban protected areas. Shown here: visitors to Yangmingshan National Park near Taipei, Taiwan, Province of China. Ted Tizyna.

Management of Protected Areas

Conserving biodiversity in protected areas

- Provide access for all
- Transportation to the protected area

Some urban protected areas provide transportation to and within their lands. A busload of schoolchildren visit Nairobi National Park. Glen Hyman.

Management of Protected Areas

Conserving biodiversity in protected areas

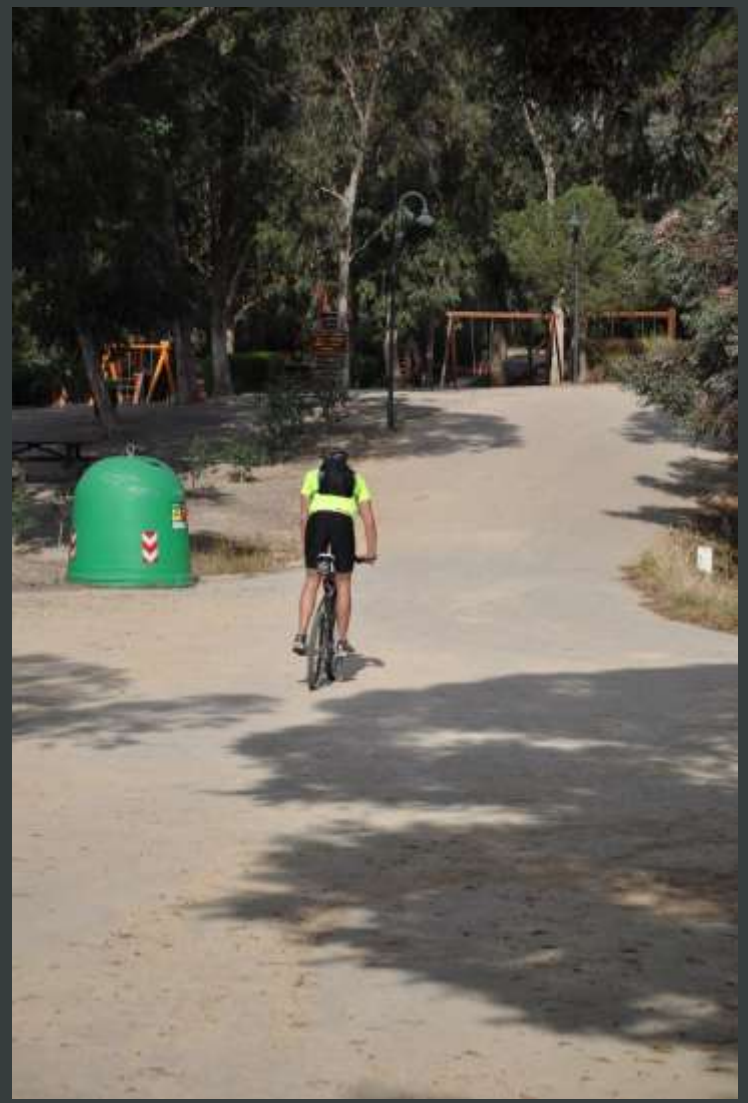
- Provide access for all
- Transportation to the protected area
- Direct visitors to specific trails

Well-marked trails like this one in a country park on Lantau Island in Hong Kong enable visitors to guide themselves safely. Ted Trzyna.

Management of Protected Areas

Conserving biodiversity in protected areas

- Provide access for all
- Transportation to the protected area
- Direct visitors to specific trails
- Allow bicycles (where appropriate)



Management of Protected Areas

Conserving biodiversity in protected areas

- Provide access for all
- Transportation to the protected area
- Direct visitors to specific trails
- Allow bicycles (where appropriate)
- Provide explanatory materials (e.g. guides, booklets), interpretive facilities (e.g. in visitor centres) and interpretive guiding (e.g. ecotours).

Management of Protected Areas

Conserving biodiversity in areas

- Put a set of restrictions (if needed)

❑ Fire

❑ Limited access to areas or seasonal limit

❑ Limit to the maximum No of people

❑ Length of stay limit

❑ Differential pricing

❑ Barriers

❑ Zoning in protected areas etc

Management of Protected Areas

Conserving biodiversity in protected areas

- Monitoring and managing water quality and quantity to protect biodiversity from pollution and extremes of drought and flooding

Integrated watershed management is an effective means of ensuring water quantity and quality in protected areas at the edge of cities, as in Kenya's Lake Nakuru National Park, renowned for its flamingos. BIT 1992/Creative Commons SA-3.0.

Management of Protected Areas

Conserving biodiversity in protected areas

- Managing wildfires in ways that protect native species and ecosystems

Unusually extensive wildfires have occurred in recent years, especially in Mediterranean-type climates. A fire crew in California. Andrea Booher, US Federal Emergency Management Agency.

Management of Protected Areas

Conserving biodiversity in protected areas

- Managing wildfires in ways that protect native species and ecosystems
- Reducing the effects of noise and artificial nighttime light on wildlife

In Canada, the Royal Astronomical Society of Canada designates Urban Star Parks based on consistence with standards such as strict control of artificial lighting. © 2013 RASC. Used by permission.

Management of Protected Areas

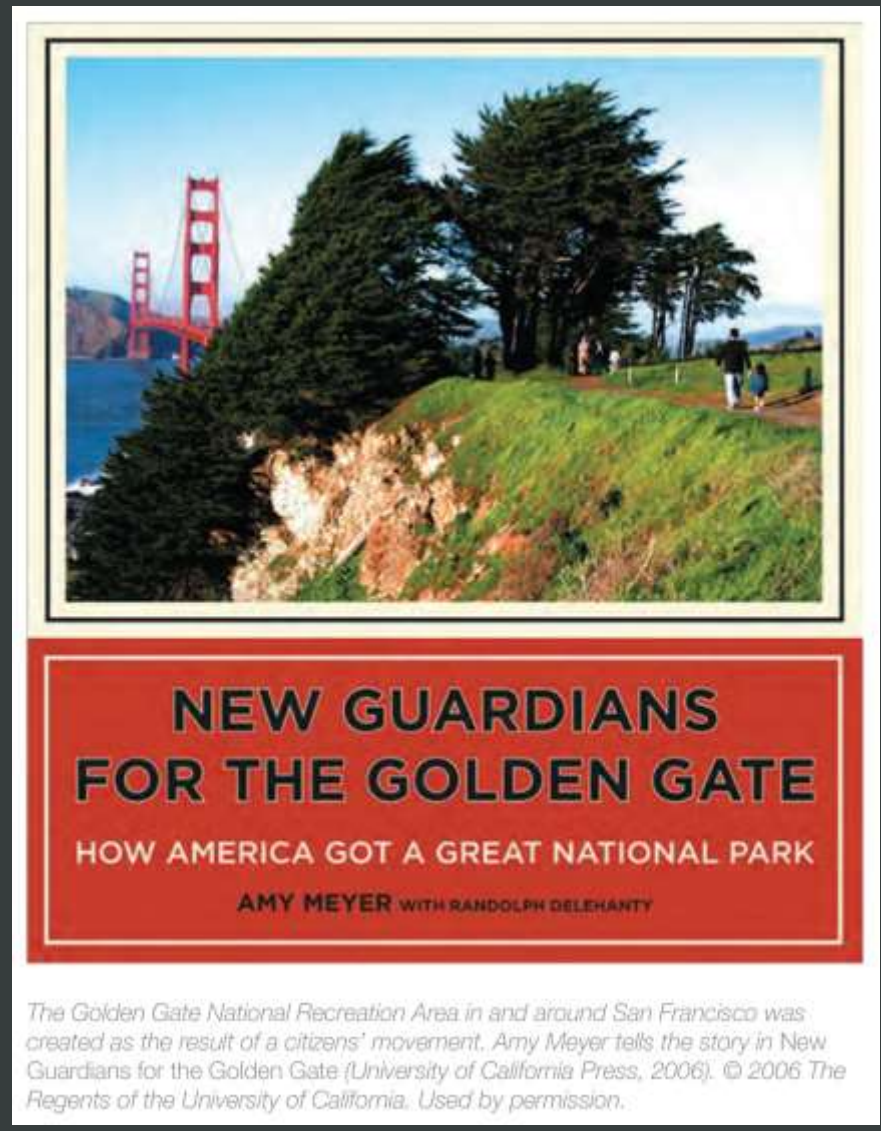
Conserving biodiversity in protected areas

- Managing wildfires in ways that protect native species and ecosystems
- Reducing the effects of noise and artificial nighttime light on wildlife
- Facilitating research on biodiversity and helping to disseminate and archive research results

Management of Protected Areas

Conserving biodiversity in protected areas

- Creating and expanding urban protected areas, keeping in mind priorities for biodiversity conservation



The Golden Gate National Recreation Area in and around San Francisco was created as the result of a citizens' movement. Amy Meyer tells the story in New Guardians for the Golden Gate *(University of California Press, 2006). © 2006 The Regents of the University of California. Used by permission.*

Management of Protected Areas

Conserving biodiversity in protected areas

- Creating and expanding urban protected areas, keeping in mind priorities for biodiversity conservation
- Developing research agendas that include studies aimed at protecting biodiversity

Management of Protected Areas

Conserving biodiversity in protected areas

- Encouraging museums and similar institutions to provide information and exhibits about nature and conservation challenges in their regions

Natural history museums can work with urban protected areas to encourage people to visit natural areas and inform them about local conservation efforts. At this map table, visitors to Chicago's Field Museum can learn about fragmentation and restoration in the Chicago region. © 2013 Field Museum of Natural History. Used by permission.

Management of Protected Areas

Conserving biodiversity in protected areas

- Connecting culture and nature

Preserving rural culture can be an important goal of urban protected areas. In Italy, Rome's nature parks include small farms that use traditional methods to produce foods such as bread and cheese. Pecorino romano cheese. Jon Sullivan/Creative Commons, public domain.

Religious sites in urban protected areas connect those visiting them to their natural surroundings. Yangmingshan National Park near Taipei has both Buddhist and Taoist temples. Ted Trzyna.

Management of Protected Areas

Conserving biodiversity in protected areas

- Hosting events of governmental agencies,

  NGOs, local communities and businesses

The WWT London Wetland Centre has rooms designed for this purpose and they are well-appointed and suitable for high-level events, including government press conferences.

Management of Protected Areas

Conserving biodiversity in protected areas

- Communicating with the general public

More and more visitors to urban protected areas depend on mobile apps for information. At a trail junction, Tim Caughman checks a map on his tablet computer to decide which path to take. Rick Caughman.

Management of Protected Areas

Conserving biodiversity in protected areas

- Communicating with the general public

Print publications

Websites, blogs and social media

Visitor centres often sell field guides and other publications related to nature, culture and history in their regions. This well-stocked bookstore in Golden Gate National Recreation Area in San Francisco is operated by its cooperating association, the Golden Gate National Parks Conservancy. Ted Trzyna.

Management of Protected Areas

Conserving biodiversity in protected areas

- Communicating with policy-makers, opinion leaders and the media

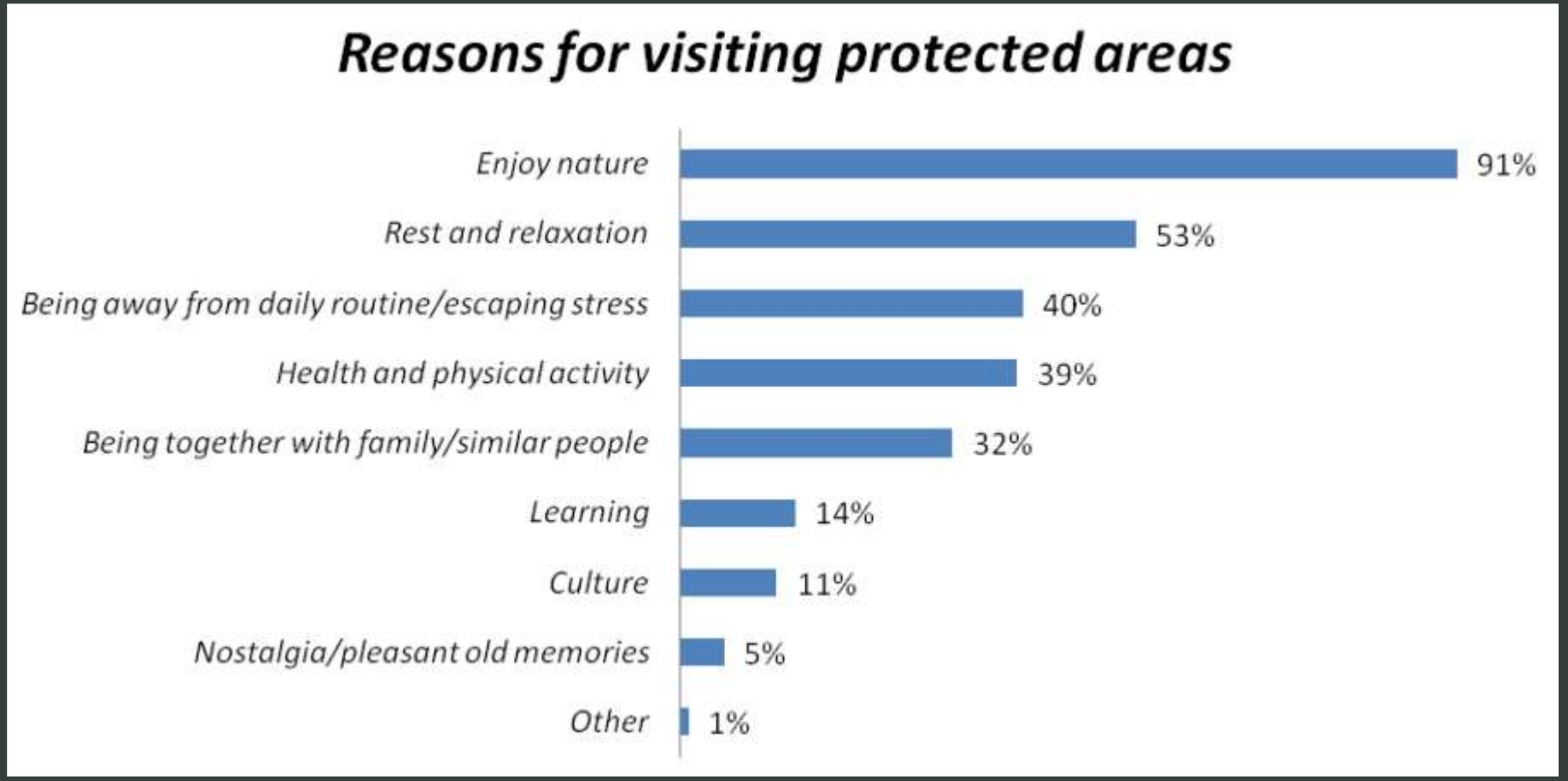
Management of Protected Areas

Conserving biodiversity in protected areas

- Learn from others' experience with collaboration; pay careful attention to structure and process, as well as to substance.

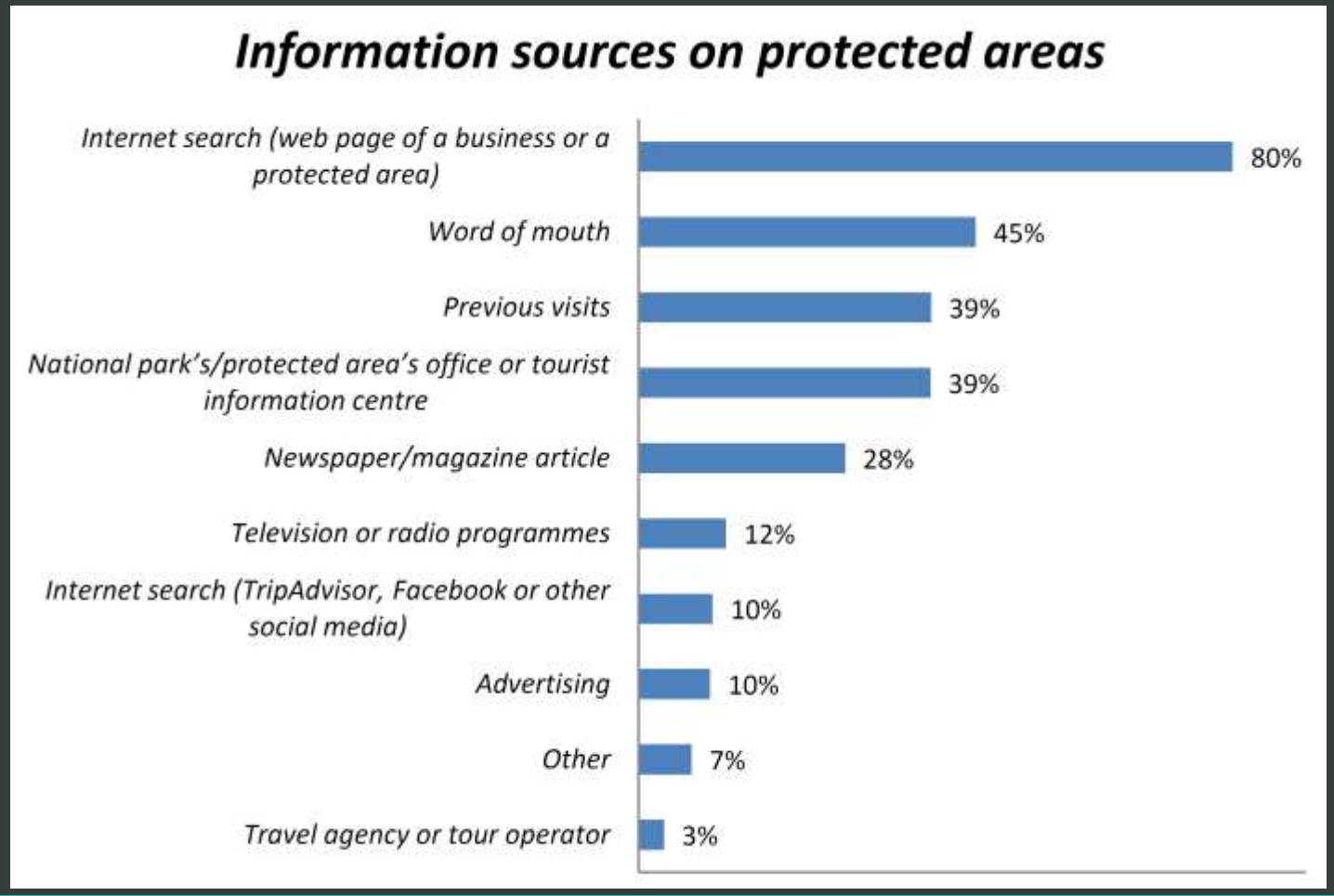
Management of Protected Areas

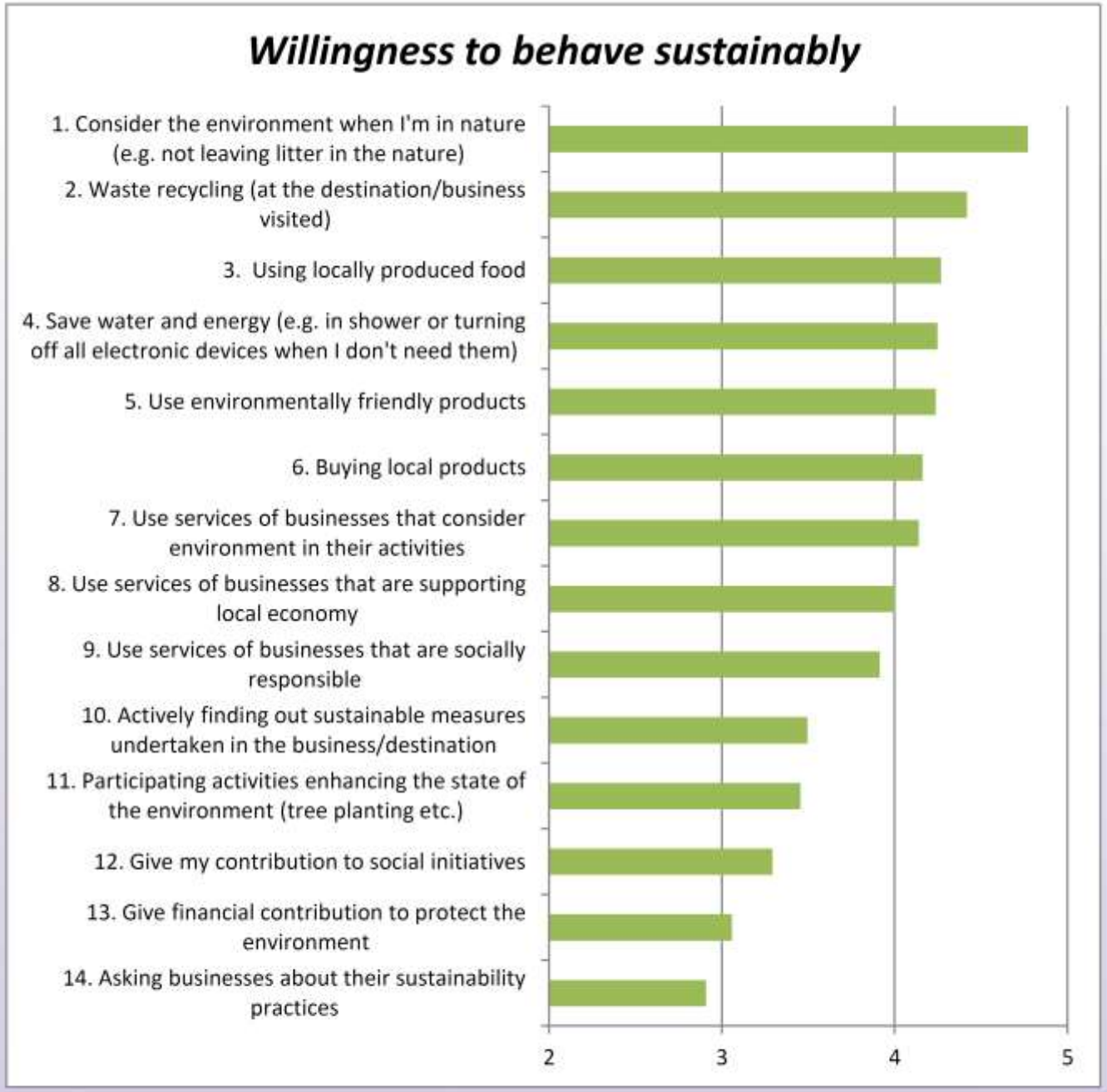
Tourism in Protected Areas



Management of Protected Areas

Tourism in Protected Areas





GRAPH 6: WILLINGNESS TO TAKE PART IN DIFFERENT SUSTAINABLE ACTIVITIES WHILST TRAVELLING (1 = not willing at all, 5 = very willing)

Management of Protected Areas

Tourism in Protected Areas

- Visitors of protected areas are generally willing to participate in sustainable activities:

❑ waste recycling

❑ saving water and energy

❑ considering the environment when being in nature

❑ using environmentally friendly products

❑ using locally produced food.

Management of Protected Areas

Green certificates and Ecolabels

- Visitors find ecolabels a reliable way to recognize environmentally friendly products, businesses and services
- They find favouring ecolabelled products a way to act sustainably

By purchasing an ecolabelled product or service I feel that I help the nature conservation

Ecolabels and sustainability schemes have increased my knowledge concerning environmental issues

Management of Protected Areas

Protected Area Staff Training

- Qualified, competent and committed staff are central to the success of protected areas
- According to IUCN, “not only technical skills are required, but professional staff also need a wider range of backgrounds including a high level of managerial and communication abilities”

Management of Protected Areas

Protected Area Staff Training

- The Vth World Parks Congress (September 2003) declared that “effective management of protected areas in the context of global change requires that managers, protected areas staff including rangers, local communities and other stakeholders have the knowledge, attitudes, skills, capabilities and tools to plan, manage and monitor protected areas”.

Management of Protected Areas

Protected Area Staff Training

- Managers and stakeholders also need the skills to be able to establish and maintain the complex relationships and networks that are essential for sustainable and effective management of protected areas

Management of Protected Areas

Ecological Restoration for Protected Areas

a. It should be effective

- Guideline 1: ‘Do no harm’ by first identifying when active restoration is the best option

West Lake Park, USA: Time series pictures of mangrove restoration project from 1989, 1991 and 1996. Mangroves recolonized the area naturally following restoration of the hydrology. © Robin Lewis

Management of Protected Areas

Ecological Restoration for Protected Areas

a. It should be effective

- Guideline 1: ‘Do no harm’ by first identifying when active restoration is the best option
- Guideline 2: Re-establish ecosystem structure, function and composition

West Lake Park, USA: Time series pictures of mangrove restoration project from 1989, 1991 and 1996. Mangroves recolonized the area naturally following restoration of the hydrology. © Robin Lewis

Management of Protected Areas

Ecological Restoration for Protected Areas

a. It should be effective

- Guideline 1: ‘Do no harm’ by first identifying when active restoration is the best option
- Guideline 2: Re-establish ecosystem structure, function and composition
- Guideline 3: Maximize the contribution of restoration actions to enhancing resilience

Canaveral National Seashore, USA: Volunteers measure the height of oyster growth on a natural reef. This serves as a reference for determining success of restored reefs. (Case study 12) © Anne P. Birch, The Nature Conservancy

Management of Protected Areas

Ecological Restoration for Protected Areas

a. It should be effective

- Guideline 4: Restore connectivity within and beyond the boundaries of protected areas

Diawling National Park, Mauritania: The Lemur sluicegate allows flooding of the Bell basin by the Senegal River and was installed as part of a project to restore seasonal flooding to the delta. (Case study 6) © Diawling National Park, Mauritania

Management of Protected Areas

Ecological Restoration for Protected Areas

a. It should be effective

- Guideline 4: Restore connectivity within and beyond the boundaries of protected areas
- Guideline 5: Encourage and re-establish traditional cultural values and practices that contribute to the ecological, social and cultural sustainability of the protected area and its surroundings

Fandriana Marolambo Forest Landscape Restoration project, Madagascar: Establishment of community nurseries and engagement with local people have helped develop knowledge of indigenous species and built long-term support for restoration activities (Case study 3) © Appolinaire Razafimahatratra (WWF)

Management of Protected Areas

Ecological Restoration for Protected Areas

a. It should be effective

- Guideline 6: Use research and monitoring, including from traditional ecological knowledge, to maximize restoration success

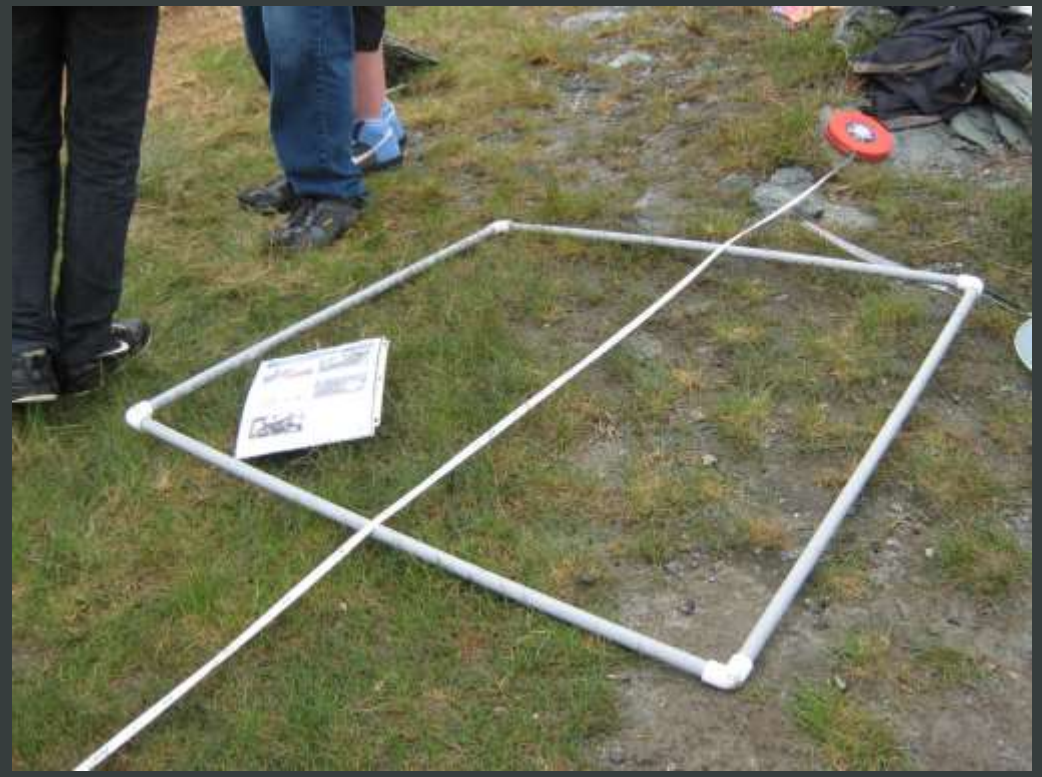
Springbrook Rainforest Project, Australia: Monitoring includes a state-of-the art, continuously operating wireless sensor network with 175 sensor nodes and 700 individual sensors providing long-term, catchment-wide micrometeorological, edaphic, and plant productivity data. A battery-powered wireless multi-media network monitors animal movements. (Case study 11) © Keith Scott

Management of Protected Areas

Ecological Restoration for Protected Areas

b. It should be efficient

- Guideline 1: Consider restoration goals and objectives from system-wide to local scales in prioritizing restoration activities
- Guideline 2: Ensure long-term capacity and support for maintenance and monitoring of restoration



Management of Protected Areas

Ecological Restoration for Protected Areas

b. It should be efficient

- Guideline 3: Maximize the contribution of restoration actions to enhancing natural capital and ecosystem services from protected areas

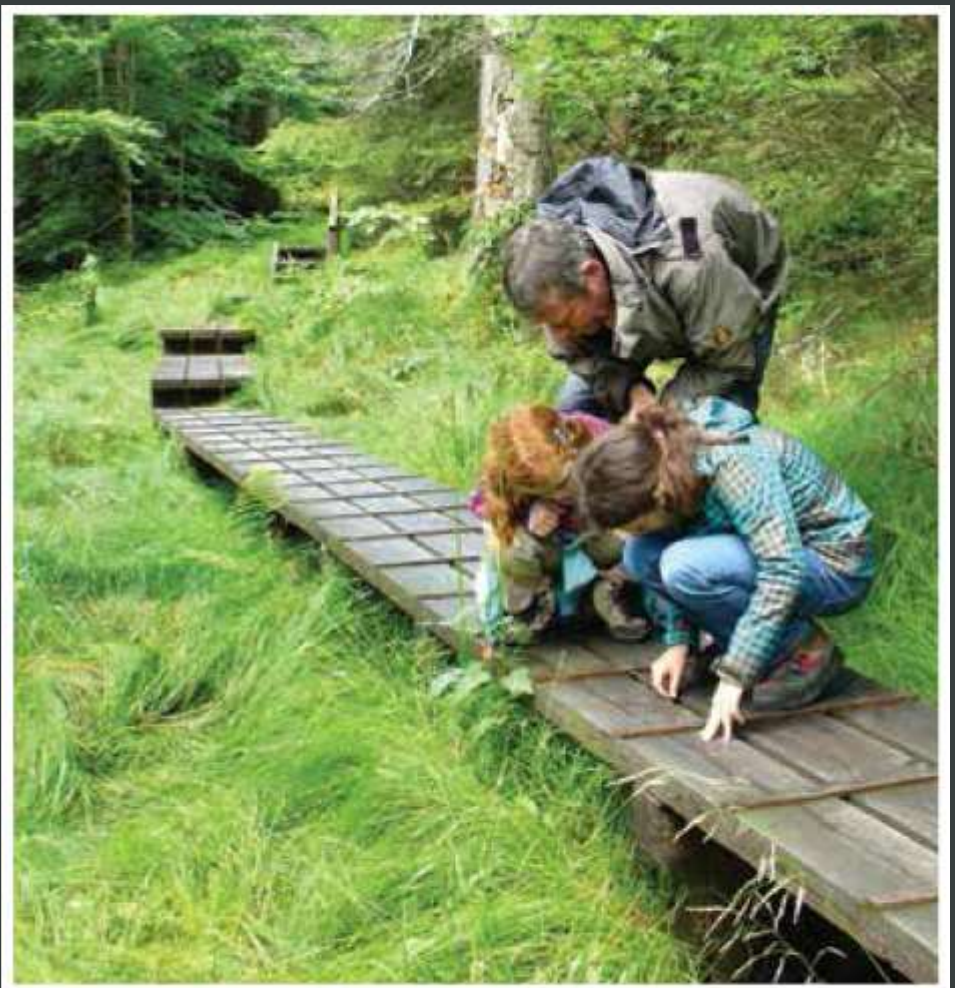
Niumi National Park, The Gambia: Local communities are growing seedlings to restore dune areas that have eroded. © Colleen Corrigan

Management of Protected Areas

Ecological Restoration for Protected Areas

b. It should be efficient

- Guideline 3: Maximize the contribution of restoration actions to enhancing natural capital and ecosystem services from protected areas
- Guideline 4: Contribute to sustainable livelihoods for indigenous peoples and local communities dependent on the protected areas



Bayerischer Wald National Park, Germany: The "Path of the Soul" boardwalk has been a successful way for visitors to learn about natural forest regeneration. © Maria Hußlein/Bavarian Forest NP

Management of Protected Areas

Ecological Restoration for Protected Areas

b. It should be efficient

- Guideline 5: Integrate and coordinate with international development policies and programming

Management of Protected Areas

Ecological Restoration for Protected Areas

c. It should be engaging

- Guideline 1: Collaborate with indigenous and local communities, landowners, corporations, scientists and other partners and stakeholders in planning, implementation, and evaluation

Canaveral National Seashore, USA: Mosquito Lagoon Oyster Reef Restoration project partners counting the number of live oysters on a restored oyster reef as one metric of restoration success (Case study 12) © Anne P. Birch, The Nature Conservancy

Management of Protected Areas

Ecological Restoration for Protected Areas

c. It should be engaging

- Guideline 2: Learn collaboratively and build capacity in support of continued engagement in ecological restoration initiatives

Riding Mountain National Park, Canada: Fire restoration programme © Parks Canada

Management of Protected Areas

Ecological Restoration for Protected Areas

c. It should be engaging

- Guideline 2: Learn collaboratively and build capacity in support of continued engagement in ecological restoration initiatives
- Guideline 3: Communicate effectively to support the overall ecological restoration process

Lacandon forest, Mexico: Working with farmers in the Lacandon community has led to more effective tools for management of invasive species and forest restoration. (Case study 5) © Antonio Sánchez Gómez

Management of Protected Areas

Ecological Restoration for Protected Areas

c. It should be engaging

- Guideline 2: Learn collaboratively and build capacity in support of continued engagement in ecological restoration initiatives
- Guideline 3: Communicate effectively to support the overall ecological restoration process
- Guideline 4: Provide rich experiential opportunities that encourage a sense of connection with and stewardship of protected areas

Point Pelee National Park, Canada: Planting seedlings for restoration of endangered sand spit savannah © Parks Canada

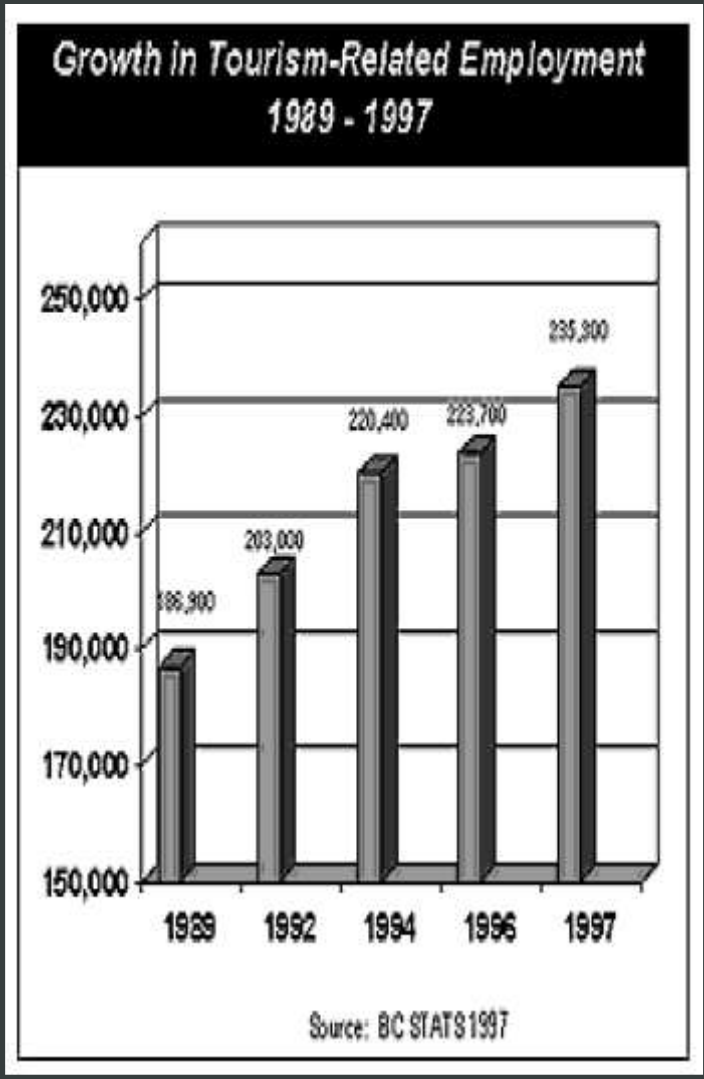
Economic Benefits of Protected Areas

- Most protected area systems in the world are under-funded
- Many are starved of funds, even when they are the central focus of a major tourism industry
- Economic evaluation data of tourism in protected areas are scarce, and often unreliable when available.
- As a result, societies and governments tend to undervalue the benefits derived, and therefore do not provide the funds needed to maximise the flow of benefits.

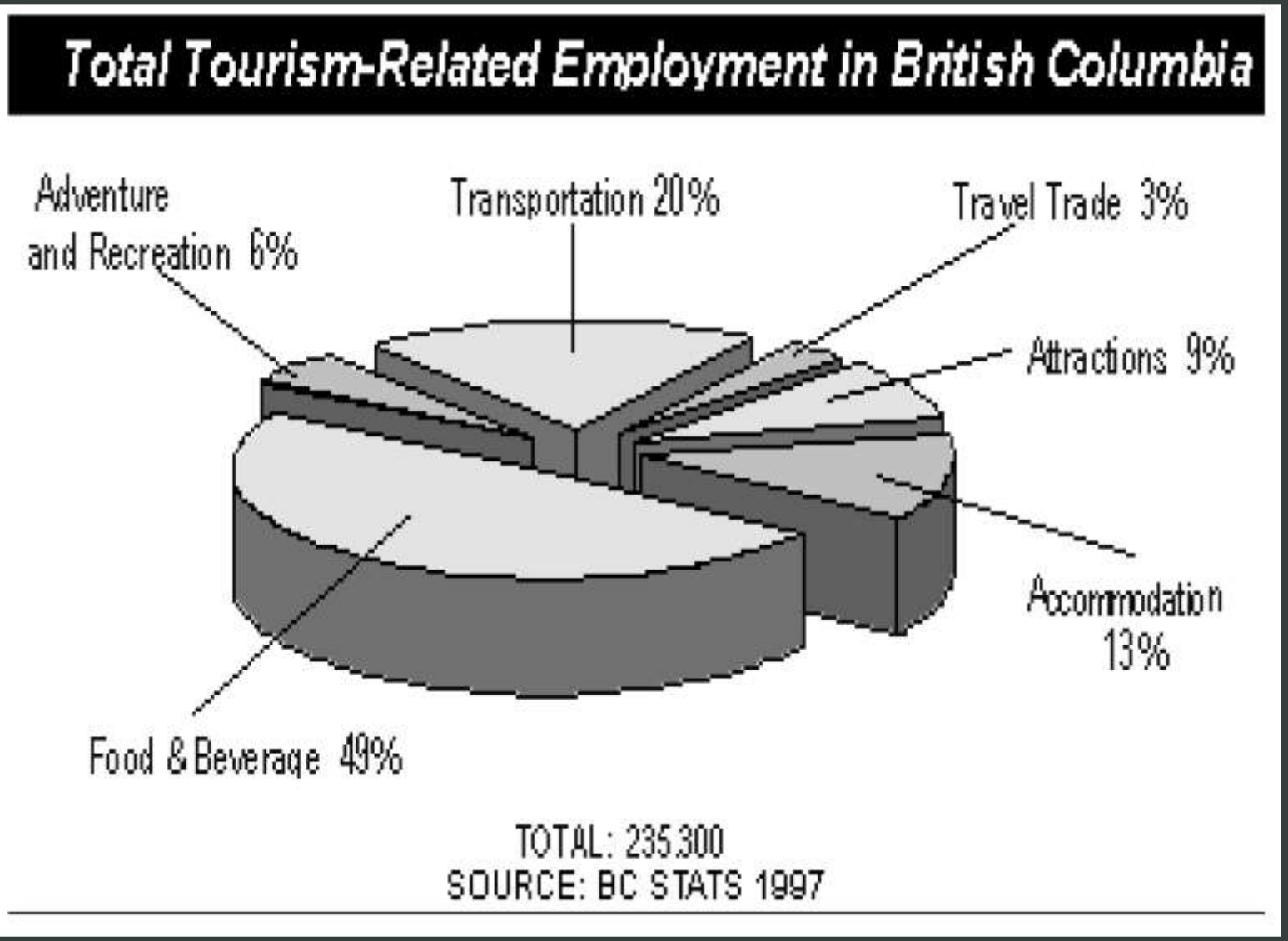
Economic Benefits of Protected Areas

Job creation

- A recent study commissioned by the Canadian Tourism Commission found that Canada's tourism industry is outpacing the overall economy and generating jobs at twice the pace of other businesses.
- More importantly, the study found that the fastest growing sector within the tourism industry was adventure travel and eco-tourism. This is consistent with recent job creation figures for British Columbia's tourism sector.



Economic Benefits of Protected Areas



Between 1996-1997, employment in the eco-tourism industry grew faster than all other sectors increasing by 11% and creating a total of 13,000 jobs.

British Columbia - Canada

Economic Benefits of Protected Areas

Job creation

- Federal, provincial and territorial governments hire a significant number of staff for park management, operations and visitor services.
- In the Yukon and NWT, Parks Canada employs approximately 155 full-time equivalents and spends around $7 million in salaries and wages
- Employment opportunities for local people include monitoring, documentation of local history, construction and maintenance.

Economic Benefits of Protected Areas

Job creation

- Parks also generate jobs in tourism and other service industries that provide food, accommodation, transportation and guiding or nature interpretation to people visiting protected areas.
- As mentioned earlier, visitor spending associated with parks also creates indirect jobs such as construction and manufacturing through demand for local products and services.

Economic Benefits of Protected Areas

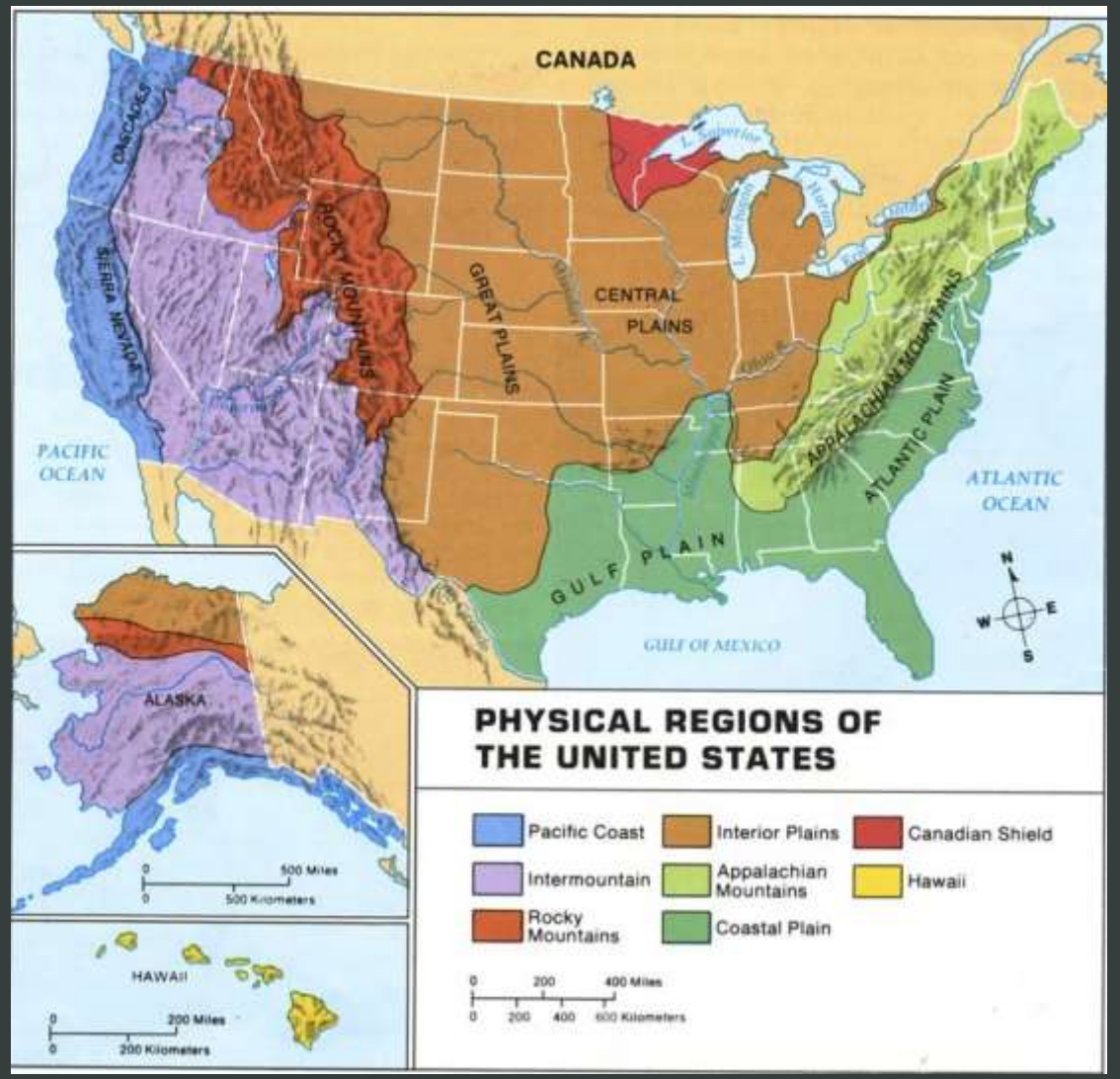
Visitor spending

- 41% of visitors to Canada's Yukon in 1999 participated in one of the following activities: visiting natural attractions, wildlife watching, hiking, and guided walks or tours.

Economic Benefits of Protected Areas

Visitor spending

- Recent studies of the Rocky Mountain region stretching from Wyoming to the Yukon found that the largest source of income was from the service and professional industries.
- Together, these industries generated 20 times the income earned in farming and 11 times the income earned in mining, oil and gas, and forestry combined.



Economic Benefits of Protected Areas

Visitor spending

- Visitor spending from nature related tourism represents a huge export market for Canada.
- A 1996 survey by the U.S. Census Bureau revealed that during that year 1.1 million U.S. visitors spent $383 million on fishing and $322 million on wildlife viewing while in Canada
- The study concluded that the improved and expanded park and tourism facilities in the territory were attracting more tourists to the territory and encouraging them to remain longer.
- For every dollar spent to operate park facilities in 1993, tourists were leaving behind 3.5 dollars

Economic Benefits of Protected Areas

Government Spending and Revenues

- Public investment in protected area establishment, facilities and management is essential to realize the potential community and regional economic benefits.
- Government spending on protected areas can be an effective way to stimulate private spending in the economy.
- In 1994, the $35 million B.C. provincial parks budget was less than ten percent of the total direct spending generated by the park system.

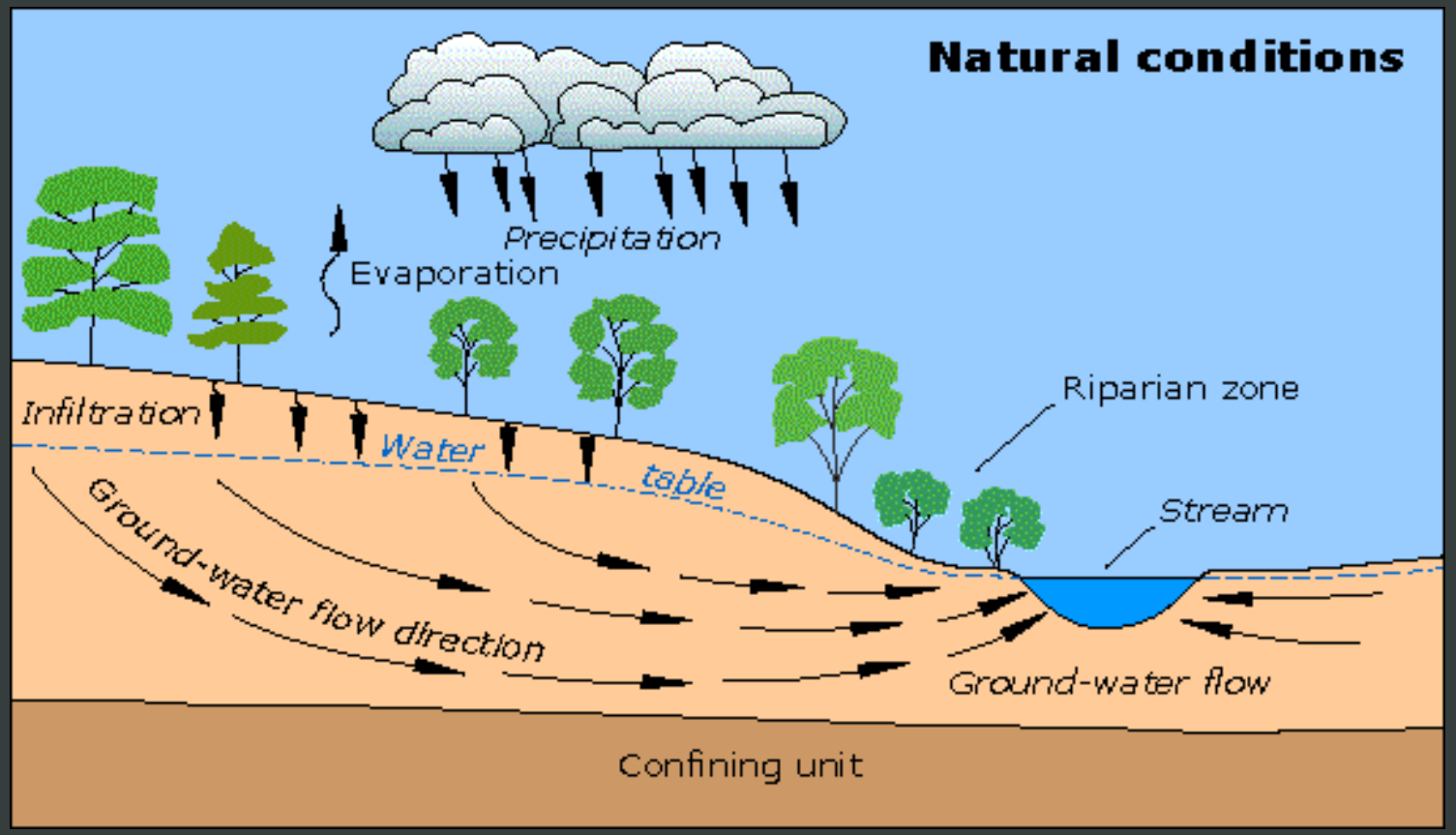
Economic Benefits of Protected Areas

Government Spending and Revenues

- The British Columbia government received about $42 million in tax revenues from the operation of its parks system in 1994, more than enough to cover the $35 million required to fund it.

Economic Benefits of Protected Areas

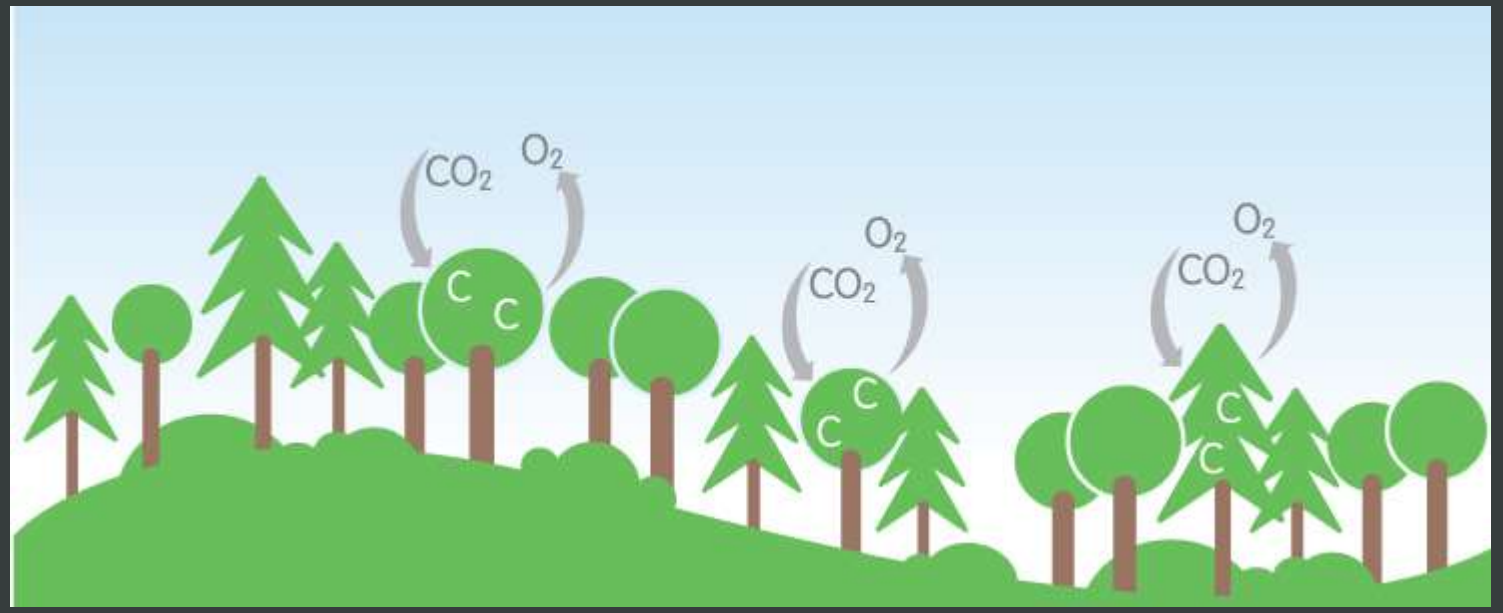
Groundwater infiltration



Economic Benefits of Protected Areas

Carbon sequestration

- Carbon sequestration depends on the dynamics and management of the vegetation. It is generally high in young forests, and declining in mature forests.



Economic Benefits of Protected Areas

Air pollution removal

Wildlife Management Areas in Tanzania, Promoting Community Based Conservation and Livelihoods