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“Conservation and Sustainable Management of Turkey’s
Steppe Ecosystems Project”

GCP/TUR/061/GFF

GUIDELINES FOR ESTABLISHING PROTECTED AREAS



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January, 2021

Conservation and Sustainable Management of Turkey's Steppe Ecosystems Project

Guidelines for Establishing Protected Areas

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LIST OF ABBREVIATIONS

CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
DHKD	Turkish Society for the Protection of Nature
FAO	Food and Agriculture Organisation
GDNCNP	General Directorate for Nature Conservation and National Parks
GDPNA	General Directorate for Protection of Natural Assets
GEF	Global Environmental Facility
GGN	Global Geoparks Network
GIS	Geographic Information System
IBA	Important Bird Area
INA	Important Natural Area
IPA	Important Plan Area
IUCN	International Union on Conservation of Nature
KBA	Key Biodiversity Area
MFWA	Ministry of Forestry and Water Affairs
MAB	Man and the Biosphere Programme
MAF	Ministry of Agriculture and Forestry
MCF	Ministry of Culture and Tourism
MEU	Ministry of Environment and Urbanisation
MPA	Marine Protected Areas
NGO	Non-Governmental Organization
NGS	The National Geographic Society
OUV	Outstanding Universal Value
PA	Protected Area
PAWP	The Programme of Work on Protected Areas
SAC	Special Area of Conservation
SCP	Systematic Conservation Planning

SEPA	Special Environmental Protection Area
SPA	Special Protection Area
SPP	Systematic Protection Planning
UNCCD	United Nations Convention to Combat Desertification
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
WCMC	World Conservation Monitoring Centre
WCPA	World Commission on Protected Areas
WDPA	World Database on Protected Areas
WNBR	World Network of Biosphere Reserves
WWF	World Wide Fund for Nature

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EXECUTIVE SUMMARY

Protected areas can be found in a wide variety of environments, ranging from mountains to the sea, deserts, forests and freshwater lakes, and even traverse borders. They differ in almost every respect, including the purposes for which they are managed, their size, the types of sites and resources they protect, and their management. In recent decades, the number of protected areas has increased rapidly. Although, there has been good progress in expanding the coverage of terrestrial protected areas 14.9%, the further areas are needed for a full representation of areas of particular importance for biodiversity and ecosystem services (UNEP-WCMC, IUCN and NGS, 2018).

In general, this rapid and recent growth in protected areas has not been accompanied by commensurate expansion in management capacity. The designation of protected status both on land and water has often failed to resolve (and in some cases has heightened) conflicts over access, use or control of the areas concerned. Economic recession and hardship have thrown such issues into sharper focus in recent years. Protected areas will not survive unless they enjoy broad public support, which is dependent on people's fundamental needs being met. Land use and resource management conflicts, inequities or impacts do not cease to exist simply because an area is granted protected status. When established by nation states or related entities, protected area boundaries often reflect considerations of sovereignty, governance and tenure as much as the environment types they seek to protect. For all these reasons, the planning and management of protected areas must be coordinated with the use and management of other areas rather than treated in isolation. The long-term success of protected areas must be framed by the search for more sustainable patterns of development in general. The present Guidelines are intended to support the establishment process for protected areas.



Purpose and use of the Guidelines

The Guidelines are a product of The Conservation and Sustainable Management of Turkey's Steppe Ecosystems Project (GCP/TUR/061/GFF), which is financed by the Global Environment Facility (GEF) and implemented by the United Nations Food and Agriculture Organization (FAO). The Turkish Ministry of Agriculture and Forestry (MAF) is the project's executing partner, and the General Directorate of Nature Conservation and National Parks (GDNCNP), and the General Directorate of Plant Production (GDPP) are the leading MAF units actively involved in project implementation.

The Guidelines are designed for use by those involved in the establishment of protected areas in Turkey. In particular, they can assist protected area managers and decision-makers, such as staff of the MAF as well other ministries responsible for protected areas, such as the Ministry of Environment and Urbanization (MEU) and the Ministry of Culture and Tourism, by helping them provide necessary key information to the responsible bodies in Turkey to support the process of establishing new protected areas.

This guide describes the process of determining of the protected areas based on the existing situation in Turkey and with international protected area categories. Chapter 1 provides an introduction to the definition and development of protected areas, with a particular focus on the growth of protected areas over the last 30 years. The chapter also covers international conventions, programmes and categories such as Ramsar Sites, UNESCO World Heritage Sites, biosphere reserves, Geoparks and the Convention on Biological Diversity, and lists their objectives and nomination criteria. Chapter 2 reviews protected area identification status in Turkey as well as the identification status of national parks, wildlife development areas and wetlands. The chapter identifies the different conservation categories in the country and analyses their distribution. It also details the laws applicable to the individual categories and the responsible ministries, as well as the process for nominating a protected area in Turkey. Chapter 3 explores the process of establishing a protected area in greater detail and explains the importance of a national system of protected areas.

The Guidelines also include a set of Annexes. These include the 2020 Biodiversity "Aichi" Targets, which were adopted during the course of the 10th Meeting of the Parties of the UN Convention on Biological Diversity (CBD) with the basic objective of stopping the loss of biological diversity across the world by 2020, an assessment checklist for candidate sites, a set of identification criteria and UN Sustainable Development Goals (SDGs).



INTRODUCTION

Within the framework of the project Conservation and Sustainable Management of Turkey's Steppe Ecosystems, seven sets of guidelines have been developed to provide standards and recommendations for the sustainable management and conservation of the country's natural assets. The present document is the first set in the series. The full list of guidelines is as follows:

- **The Guidelines for Establishing Protected Areas outline the standards for the establishment process, from site proposal to final establishment of the site (including ministerial and presidential approval).**
- **The Guidelines for Protected Area Management Planning outline the standards and methods for the management planning of established protected areas.**
- **The Guidelines for Biodiversity Monitoring outline the standards and methods for the development of monitoring systems at the protected area level.**
- **The Guidelines for Engaging Stakeholders in Managing Protected Areas outline the standards and recommended practices for engaging stakeholders in the participatory planning and management of protected areas.**
- **The Guidelines for Assessing the Management Effectiveness of Protected Areas outline the standards and methods for assessing the effectiveness and efficiency of protected area management.**
- **The Guidelines for Grazing Management Planning outline the standards and methods for transitioning Turkey's grazing management practices to align with globally defined ecological sustainability.**

The **Guidelines for Grazing and Livestock Monitoring** outline the standards and methods for monitoring animal performance and the impact of livestock on the ecosystem..

All the guidelines refer to both national and international standards and are closely linked, as shown in Figure 1.

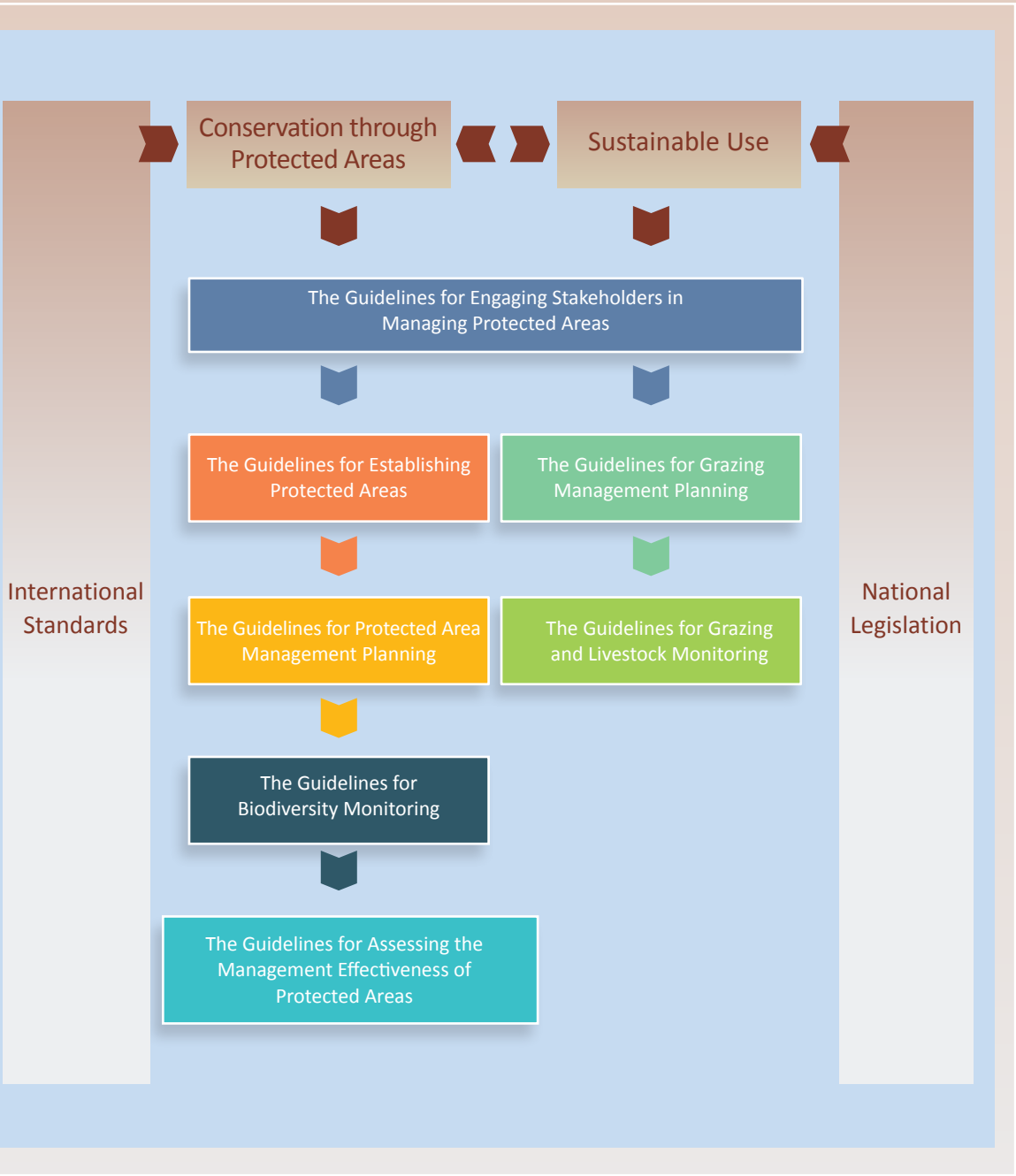


Figure 1. Overview of the seven guidelines and their interrelations

CHAPTER 1

PROTECTED AREAS: DEFINITION AND DEVELOPMENT



1. PROTECTED AREAS: DEFINITION AND DEVELOPMENT



Protected areas can be found in different environments ranging from mountains to the sea, deserts, forests and freshwater lakes and even traverse national boundaries. They are known by a multitude of names in different countries: national parks, nature reserves, natural monuments, wilderness areas, wildlife management areas, tourism management areas, ecological stations and sacred groves. Many of these nationally designated protected areas also form part of international systems of protected areas established under global conventions (e.g. World Heritage Sites, RAMSAR sites) and regional agreements (e.g. Natura 2000 Sites in Europe, Special Protected Areas under Barcelona Convention for Mediterranean Region). These mechanisms and the degree of protection vary considerably depending on the type of protected area.

The world's protected areas differ in almost every respect, including the purposes for which they are managed, their size, the type of sites and resources they protect, and the responsible management body (Phillips, 2002). For this reason, the International Union for the Conservation of Nature (IUCN) has created a classification system that identifies six categories of protected area according to their management objectives (Brown, Mitchell and Beresford, 2005).

A protected area is “a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values” (www.iucn.org). Table 1 presents explanations of the terminology used in the above definition.

Terminology	Explanation
Clearly defined geographical space	Includes land, inland water, marine and coastal areas or a combination of two or more of these. "Space" can also include protection of the airspace above an area, protection of water up to a certain depth and protection of the seabed. Conversely, subsurface areas are sometimes not protected and may be open to mining. "Clearly defined" implies a spatially defined area with agreed and demarcated boundaries. These boundaries are sometimes defined by physical features that move over time, such as river banks, or in accordance with management measures, such as agreed no-take zones.
Recognized	Implies that protection may include a range of governance types that are declared both by individuals and the state, and that such sites should be recognized in some way, notably by listing them on the World Database on Protected Areas (WDPA).
Dedicated	Implies a specific, long-term binding commitment to conservation through: <ul style="list-style-type: none"> • international conventions and agreements • national, provincial and local law • customary law • covenants of NGOs • private trusts and company policies • certification schemes.
Managed	Assumes active steps to conserve the natural (and possibly other) values for which the protected area was established. "Managed" can also include a decision to leave the area untouched if this is deemed the best conservation strategy.
Legal or other effective means	Protected areas must either be gazetted (i.e. recognized under statutory civil law), recognized through an international convention or agreement, or otherwise managed through other effective but non-gazetted means, such as recognized traditional rules under which community conserved areas operate or the policies of established non-governmental organizations.
... to achieve	Implies some level of effectiveness. This element that was not present in the 1994 definition but has been strongly requested by many protected area managers and others. Although the category will still be determined by objectives, management effectiveness will be progressively recorded in the World Database on Protected Areas and over time will become an important contributory criterion in the identification and recognition of protected areas.
Long term	Protected areas should be managed in perpetuity and not as a part of short-term or temporary management strategy. In the context of the IUCN definition, conservation refers to the

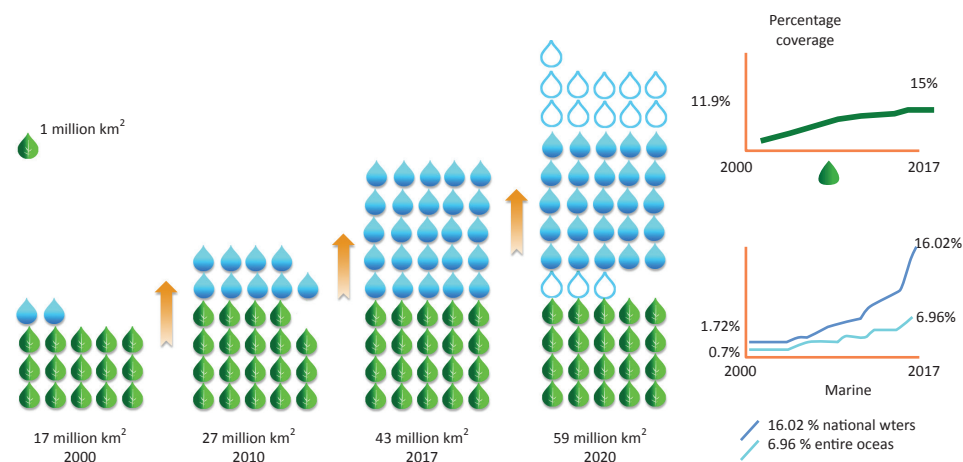
Conservation	in-situ maintenance of ecosystems and natural and semi-natural habitats, and of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species in the surroundings where they have developed their distinctive properties.
Nature	In this context, nature refers to biodiversity at the genetic, species and ecosystem level, and often also to geodiversity, landform and broader natural values.
Associated ecosystem services	In this context, ecosystem services are associated – and do not conflict – with the goal of nature conservation. They may include: provisioning services such as food and water; regulating services such as the regulation of floods, droughts, land degradation and diseases; supporting services such as soil formation and nutrient cycles, and cultural services such as recreational, spiritual, religious and other immaterial benefits.
Cultural values	Values that do not impede conservation outcomes (all cultural values in a protected area should meet this criterion), and include in particular: <ul style="list-style-type: none"> • those that contribute to conservation outcomes (e.g. traditional management practices on which key species have become reliant); • those that themselves are threatened.

Source: Dudley, Shadie and Stolton, (2013).

The main reasons for the creation of a protected area are the maintenance of essential ecological processes and life-support systems, the sustainable use of species and ecosystems, and the preservation of biotic diversity.

Over the last few decades, the worldwide extent of protected areas has increased at a rapid pace. As of 2018, 14.9 percent of terrestrial area and 16.8 percent of national marine waters are under protection (UNEP-WCMC, IUCN and NGS, 2018). The area covered increased from 17 million km² in 2000 to 43 million km² in 2017 (Figure 2). According to Target 11 of the Aichi Biodiversity Targets (see Annex I), by 2020 at least 17 percent of land and inland waters and 10 percent of coastal and marine areas should be designated as protected areas (i.e. a total of 59 million km²). The designation of an area as a protected area results in the need for suitable management and requires a variety of competencies.

PROGRESS TO DATA IN COVERAGE OF PROTECTED AREAS



Source: UNEP-WCMC, (December 2017).

1.1

International conventions and programmes for nature conservation

A variety of international conventions form the backbone of conservation efforts. Relevant examples include the following:

- International Convention for the Protection of Birds (1963¹, Paris)
- UNESCO Man and the Biosphere Programme (1971)
- Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat (1971, Ramsar, Iran)
- Convention Concerning the Protection of the World Cultural and Natural Heritage (adopted in 1972, Paris and entered in force in 1975)
- CITES – Convention on International Trade in Endangered Species of Wild Flora and Fauna (1975, Washington, DC)
- Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (1976, Barcelona, Spain), Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean
- Convention on the Conservation of European Wildlife and Natural Habitats (1979, Berne, Germany)
- Convention on the Conservation of Migratory Species of Wild Animals (1983, Bonn, Germany)
- CBD – Convention on Biological Diversity (1992, Rio de Janeiro)
- UN Forestry Principles (1992, Rio de Janeiro)

¹The date refers to the adoption of the Convention.

- UNFCCC – United Nations Framework Convention on Climate Change (entered into force in 1994 and has since become one of the world’s most universally supported multilateral environmental agreements)
 - UNCCD – United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/ or Desertification, Particularly in Africa (1994, Paris)
 - Kyoto Protocol to the UNFCCC (in 1997 the Protocol was adopted by Parties to the UNFCCC in Kyoto, Japan)
 - International Treaty on Plant Genetic Resources for Food and Agriculture (opened for signature in 2002)
 - Cartagena Protocol on Biosafety to the Convention on Biological Diversity (2003, Montreal, Canada)
 - European Landscape Convention (2004, Florence, Italy)
 - IPBES – Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (2012, Bonn, Germany)
- Within the European Union, there are two directives which together form a network of protected sites called Natura 2000:
- The Birds Directive (2009)
 - The Habitats Directive (1992).

The conventions contain global targets and strategies, and when ratified, form part of national conservation legislation.

1.1.1 Convention on biological diversity

The Convention on Biological Diversity (CBD) entered into force on 29 December 1993, inspired by the global community’s growing commitment to sustainable development. It has three main objectives: The conservation of biological diversity, the sustainable use of the components of biological diversity, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

The 7th meeting of the Conference of Parties (COP) adopted a Protected Areas Work Program’ “The overall purpose of this programme is to support the establishment and maintenance (by 2010 for terrestrial and by 2012 for marine areas) of comprehensive, effectively managed, and ecologically representative national and regional systems of protected areas that collectively, inter alia, through a global network contribute to achieving the three objectives of the Convention and the 2010 target to significantly reduce the current rate of biodiversity loss at the global, regional, national and sub-national levels and contribute to poverty reduction and the pursuit of sustainable development, thereby supporting the objectives of the Strategic Plan of the Convention, the World Summit on Sustainable Development Plan of Implementation and the Millennium Development Goals²” (Secretariat of the Convention on Biological Diversity, 2004).

²www.cbd.int

The 10th meeting of the Conference of the Parties, held from 18 to 29 October 2010, in Nagoya, Aichi Prefecture, Japan, adopted a revised and updated Strategic Plan for Biodiversity, including the Aichi Biodiversity Targets, for the 2011-2020 period³.

Parties agreed to translate this overarching international framework into revised and updated national biodiversity strategies and action plans within two years. Additionally, under the decision (X/10), the Conference of the Parties decided that the fifth national report, due on 31 March 2014, would focus on the implementation of the 2011-2020 Strategic Plan and progress achieved towards the Aichi Biodiversity Targets⁴.

Article 8 of the CBD calls for a system-based approach to national protected area planning in order to address the worldwide loss of biodiversity, (Davey, 1998). When system planning is applied to protected areas, it aims to maximize the desirable characteristics of a national protected area system. This should be done in a way that recognizes the prevailing conditions in each country arising from its environmental inheritance, history, and social, political, economic and cultural context.

1.1.2 Ramsar sites

Ramsar sites are wetlands of international importance. Their designation is based on the Convention on Wetlands, commonly referred to as the Ramsar Convention (1971). The convention provides the framework for the conservation and wise use of wetlands and their resources.

The mission of the Ramsar Convention is “the conservation and wise use of all wetlands through local and national actions and international cooperation”. The Convention employs a broad definition of wetlands that includes, among others, all types of lakes and rivers, underground aquifers, wet grasslands, peatlands and all human-made wetland sites.

Under the “three pillars” of the Convention, the Contracting Parties commit to:

- work towards the wise use of all their wetlands;
- designate suitable wetlands for the list of Wetlands of International Importance (Ramsar List) and ensure their effective management;
- cooperate internationally on transboundary wetlands, shared wetland systems and shared species.

At the time of joining the Convention, each Contracting Party must designate at least one wetland site within their territory for inclusion on the Ramsar List. A wetland can be considered to be internationally important if any of the following nine criteria apply:

- **Criterion 1.** It contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.
- **Criterion 2.** It supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

³ibid.

⁴ibid.

- **Criterion 3.** It supports populations of plant and/ or animal species important for maintaining the biological diversity of a particular biogeographic region.
- **Criterion 4.** It supports plant and/ or animal species at a critical stage in their life cycles or provides refuge during adverse conditions.
- **Criterion 5.** It regularly supports 20,000 or more water birds.
- **Criterion 6.** It regularly supports 1% of the individuals in a population of one species or subspecies of water birds.
- **Criterion 7.** It supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/ or populations that are representative of wetland benefits and/ or values and thereby contributes to global biological diversity.
- **Criterion 8.** It is an important source of food for fishes, spawning ground, nursery and/ or migration path on which fish stocks, either within the wetland or elsewhere, depend.
- **Criterion 9.** It regularly supports 1% of the individuals in a population of one species or subspecies of wetland-dependent non-avian animal species (Ramsar Regional Center – East Asia. 2017).

For further information, see: www.ramsar.org.

1.1.3 UNESCO World Heritage sites

The World Heritage Convention, held by the UNESCO in 1972, concerns the protection of the world’s cultural and natural heritage.

The aim of the Convention is to identify and protect the world’s natural and cultural heritage of “outstanding universal value”. This term refers to the global value of the heritage site and the requirement for a site to have integrity and effective management. The World Heritage List consists of 725 cultural heritage sites and landscapes, 183 natural properties and 28 mixed properties.

The criteria to inscribe a site on the World Heritage List are:

- the inclusion of all elements necessary to express the outstanding universal value for which it is being nominated for inscription to the world heritage list;
 - the property must be of adequate size to ensure the complete representation of the features and processes which convey the site’s significance;
 - the site must not suffer from the adverse effects of development and/ or neglect.
- Potential World Heritage sites are judged against several criteria, two of which (ecosystems and biodiversity) are particularly relevant to protected areas⁵.
- **Criterion IX (ecosystems):** the site “should have sufficient size and contain the necessary elements to demonstrate the key aspects of processes that are essential for the long-term conservation of ecosystems and the biological diversity they contain”.

⁵ World Heritage sites are not categorized as protected areas in Turkey. Therefore, these sites are not managed as protected areas and do not have a management plan. However, World Heritage sites should be managed as a national park, which is a protected area category.

- Criterion X (biodiversity): the site “should contain habitats for maintaining the most diverse fauna and flora characteristic of the bio-geographic province and ecosystems under consideration”.

For further information, see: <https://whc.unesco.org>.

1.1.4 UNESCO biosphere reserves

Biosphere reserves are areas that “promote solutions to reconcile the conservation of biodiversity with its sustainable use”. They aim to establish a scientific basis for the improvement of relationships between people and their environments. These sites are designated by UNESCO’s Man and the Biosphere Programme (MAB), which was launched in 1971. Every biosphere reserve is intended to fulfil three basic functions, which are complementary and mutually reinforcing:

- **a conservation function** – to contribute to the conservation of landscapes, ecosystems, species and genetic variation;
- **a development function** – to foster economic and human development that is socio-culturally and ecologically sustainable;
- **a logistic function** – to provide support for research, monitoring, education and information exchange related to local, national and global issues of conservation and development (UNESCO, 2015).

The World Network of Biosphere Reserves (WNBR) currently consists of 669 sites in 120 countries worldwide, and includes 20 transboundary sites⁶.

For further information, see: www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves.

1.1.5 UNESCO global geoparks

UNESCO Global Geoparks are single, unified geographical areas where sites and landscapes of international geological significance are managed using a holistic concept of protection, education and sustainable development. They promote a bottom-up approach of combining conservation with sustainable development while involving local communities, which is becoming increasingly popular. At present, there are 147 UNESCO Global Geoparks in 41 countries. A webpage of each UNESCO Global Geopark is available, with detailed information on each site.

UNESCO’s work with geoparks began in 2001. In 2004, 17 European and 8 Chinese geoparks came together at UNESCO headquarters in Paris to form the Global Geoparks Network (GGN), where national geological heritage initiatives contribute to and benefit from their membership of a global network of exchange and cooperation. According to UNESCO, for a geopark to apply to join the GGN, it needs to:

⁶ More information on the main characteristics of biosphere reserves can be found here: www.unesco.org/new/en/phnompenh/natural-sciences/biosphere-reserves/tonle-sap-biosphere-reserve/what-is-a-biosphere-reserve.

- have a management plan designed to foster socio-economic development that is sustainable, and based on geotourism;
- demonstrate methods for conserving and enhancing geological heritage and provide means for teaching geoscientific disciplines and broader environmental issues;
- have joint proposals submitted by public authorities, local communities and private interests acting together, which demonstrate the best practices with respect to Earth heritage conservation and its integration into sustainable development strategies.

For further information, see: www.unesco.org/new/en/natural-sciences/environment/earth-sciences/unesco-global-geoparks.

1.1.6 Natura 2000 sites

Natura 2000 is a network of nature protection areas in the territory of the European Union. It consists of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) designated, respectively, under the Habitats Directive and the Birds Directive. The network includes both terrestrial and marine sites, the latter known as Marine Protected Areas (MPAs). The habitats and species protected are deemed to be of European importance because they are endangered, vulnerable, rare, endemic or present outstanding examples of typical characteristics of one or more of Europe's nine biogeographical regions. The network stretches across all 28 EU countries, covering both land and sea. The aim of the network is to ensure the long-term survival of Europe's most valuable and threatened species and habitats, listed under the Birds Directive and the Habitats Directive.

In terms of the selection of Natura 2000 sites, the following scientific criteria apply:

- [nominate] the "most suitable territories", both in number and surface area, to protect bird species listed in Annex I of the Directive as well as migratory species;
- ensure that the natural habitat types listed in Annex I and the habitats of the species listed in its Annex II are maintained or, where appropriate, restored to a favourable conservation status in their natural range.

For further information, see: <http://ec.europa.eu/environment/nature/natura2000>

In total, there are around 2,000 species and 230 habitat types for which core sites need to be designated as Natura 2000 Sites⁷.

⁷ More information on the characteristics of Natura 2000 sites can be found at: http://ec.europa.eu/environment/nature/natura2000/faq_en.htm



1.1.7 Barcelona convention

The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean is a regional convention adopted in 1976 to prevent and abate pollution from ships, aircraft and land-based sources in the Mediterranean Sea. The Convention includes, but is not limited to, dumping, run-off and discharges. Signers agreed to cooperate and assist in dealing with pollution emergencies, monitoring and scientific research. The convention was adopted on 16 February 1976 and amended on 10 June 1995. Under the Barcelona Convention, **the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean** is most relevant for protected areas. The Protocol was adopted on 10 June 1995 by the Conference of Plenipotentiaries for the Protection of the Mediterranean Sea against Pollution and its Protocols, held in Barcelona. This Protocol, which replaces the Protocol concerning Mediterranean Specially Protected Areas of 1982 in accordance with its Article 32, entered into force on 12 December 1999.

1.1.8 Convention on the conservation of european wildlife and natural habitats

It was signed in Bern, Switzerland in 1979 in order to conserve the existence of wild flora and and fauna species and their habitats, especially to protect the environments requiring the cooperation of more than one state and to develop this cooperation. This Agreement was signed by Turkey, date 09.01.1984 and approved by the Council of Ministers Decision No. 84/7601, 20.02.1984 date and was published in the Official Gazette No. 18318 (Official Gazette 18318 / 02.20.1984).

Within the scope of the Convention on the Conservation of European Wildlife and Natural Habitats, the “Emerald Network” was established to more effectively conserve wild flora and fauna and their natural habitats that are under threat of extinction, and their habitats. Areas identified by the Party States to the Convention and the observing countries, as per certain criteria, are brought together within the scope of the above-mentioned ecological network. The final objective is to monitor and protect the species and habitats under threat of extinction which are found in these areas, and which require special protection measures (Bern Convention, 1979).

The Emerald Network has been implemented with pilot projects launched in 1999, for which the European Council provided technical support and financial aid. Turkey took part in the “Year 2000 Emerald Network Pilot Project Activities” as a pilot country. Within this scope, 10 areas were identified by the Emerald Network National Committee (chaired by the Ministry of Environment of the time and consisting of the Ministry of Agriculture and Rural Affairs, the Ministry of Forestry, the Ministry of Culture, Undersecretary of the State Planning Organization, the General Directorate of Rural Services, and the Turkish Scientific and Technical Research Institution, as well as representatives from various universities), and were nominated to the European Council as “Areas Worthy of Special Protection”, to be considered for inclusion in the Emerald Network. These 10 areas have also been accepted by the Convention Secretariat, and incorporated into the Emerald Network. The 10 Emerald Network Areas identified in Turkey as per the convention are as follows: **1) Akyatan Lagoon, 2) Çıglıkara Natural Preservation Area – Cedar of Lebanon (*Cedrus libani*) Forest, 3) Gediz Delta, 4) Göksu Delta, 5) Ilgaz Mountains National Park, 6) Manyas Lake, 7) Kızilliman Region, 8) Sultan Marshes, 9) Tuz Lake and its surroundings, 10) Uluabat Lake.**



1.1.9 IUCN categories of protected areas

The category system of IUCN is a guiding tool for determining the appropriate management for each type of protected area worldwide. Recommendations for planning and management of these categories were elaborated and published by the IUCN. They propose six categories, as described below, with definitions, which differ in terms of the degree of naturalness and human use of the landscape (Table 2). One of IUCN's scientific commissions, the World Commission on Protected Areas (WCPA), is responsible for categorizing the protected areas. WCPA supports governments and others in planning and integrating protected areas into all areas by providing strategic advice to policy-makers, strengthening capacities and investment in protected areas, and bringing together the various stakeholders in the protected area to address difficult issues. Together with the UNEP World Conservation Monitoring Centre (UNEP-WCMC), they manage the World Database on Protected Areas (WDPA). UNEP-WCMC activities include biodiversity assessment, support for international conventions such as the Convention on Biological Diversity (CBD), capacity building and management of both spatial and non-spatial data on relevant species and habitats.

Table 2. IUCN categories of protected areas and definitions

Categories of protected areas

Category Ia: Strict nature reserve

Category Ib: Wilderness area

Category II: National park

Category III: Natural monument or feature

Category IV: Habitat/ species management area

Category V: Protected landscape/ seascape

Category VI: Protected area with sustainable use of natural resources

Category Ia: Strict nature reserve

Definitio

Category Ia strictly protected areas are established to ensure the protection of biodiversity and possibly geological/ geomorphological features. Human visitation, use and impacts are strictly controlled and limited to ensure the protection of conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring.

Primary objective	To conserve regionally, nationally or globally outstanding ecosystems, species (occurrences or aggregations) and/ or geodiversity features. These attributes will have been formed mostly or entirely by non-human forces and will be degraded or destroyed when subjected to all but very light human impact.
Distinguishing features	<p>The area is left to natural succession and ecological processes are in place.</p> <p>The area should be surrounded (when feasible) by land uses that contribute to the achievement of the area’s specified conservation objectives.</p> <p>The area should be suitable as a baseline monitoring site for monitoring the relative impact of human activities.</p>

Category Ib: Wilderness area	
Definition	Category Ib protected areas are usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.
Primary objective	To protect the long-term ecological integrity of natural areas that are undisturbed by significant human activity, free of modern infrastructure and where natural forces and processes predominate, so that current and future generations have the opportunity to experience such areas.
Distinguishing features	<p>The area should be free of modern infrastructure, development and industrial extractive activity.</p> <p>The area should be of sufficient size to protect biodiversity; o maintain ecological processes and ecosystem services, (biological intactness).</p> <p>The area should offer outstanding opportunities for solitude, enjoyed once the area has been reached, by simple, quiet and non-intrusive means of travel.</p>

Category II: National park

Definition	Category II protected areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities.
Primary objective	To protect natural biodiversity along with its underlying ecological structure and supporting environmental processes, and to promote education and recreation.
Distinguishing features	The area should contain representative examples of major natural regions, and biological and environmental features or scenery, where native plant and animal species, habitats and geodiversity sites are of special spiritual, scientific, educational, and recreational or tourist significance. The composition, structure and function of biodiversity should be to a great degree in a “natural” state or have the potential to be restored to such a state, with relatively low risk of successful invasions by non-native species.

Category III: Natural monument or feature

Definition	Category III protected areas are set aside to protect a specific natural monument, geological feature or even a living feature such as an ancient grove. Such protected areas are generally quite small and often have high visitor value.
Primary objective	To protect specific outstanding natural features and their associated biodiversity and habitats.
Distinguishing features	These relatively small sites focus on one or more prominent natural features and the associated ecology, rather than on a broader ecosystem. They are the most heavily influenced of all the categories in terms of human perceptions of what is of value in a landscape or seascape, rather than more quantitative assessments of value.

Category IV: Habitat/ species management area

Definition	<p>Category IV protected areas aim to protect particular species or habitats, and management reflects this priority. Many category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.</p>
Primary objective	<p>To maintain, conserve and restore species and habitats.</p>
Distinguishing features	<p>Usually, help to protect or restore flora, fauna species and/ or habitats (not ecosystems). These often include fragments of an ecosystem. Such areas may not be self-sustaining and will require regular and active management interventions to ensure the survival of specific habitats and/ or species. There are a number of approaches for interventions:</p> <ul style="list-style-type: none"> • protection of particular species or habitats, (or their restoration); • active management to maintain target species, (e.g. artificial habitat creation or water-level maintenance, supplementary feeding, etc.); • active management of natural or semi-natural ecosystems that are either too small or too profoundly altered to be self-sustaining, (e.g. if natural herbivores are absent, they may need to be replaced by livestock or manual cutting).



Category V: Protected landscape/seascape

<p>Definition</p>	<p>Category V refers to protected areas where the interaction of people and nature over time has produced an area of 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 conservation and other values.</p>
<p>Primary objective</p>	<p>To protect and sustain important landscapes/ seascapes and associated nature conservation and other values created by interactions with humans through traditional management practices.</p>
<p>Distinguishing features</p>	<p>Category V protected areas result from biotic, abiotic and human interaction and should have the following essential characteristics:</p> <p>A landscape (and/ or seascape) of high and/ or distinct scenic quality with significant associated habitats, flora and fauna and associated cultural features and unique or traditional land-use patterns, (e.g. as evidenced in sustainable agricultural and forestry systems and human settlements that have evolved in balance with their landscape).</p> <p>A balanced interaction between people and nature that has endured over time and still has integrity, or where there is reasonable hope of restoring that integrity.</p>



Category VI: Protected area with sustainable use of natural resources

Definition	Category VI protected areas conserve ecosystems and habitats together with associated cultural values and traditional natural resource management systems. They are generally large in size with most of the area in a natural condition. A proportion is under sustainable natural resource management where low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area.
Primary objective	To protect natural ecosystems and use natural resources sustainably, when conservation and sustainable use can be mutually beneficial.
Distinguishing features	Category VI protected areas, uniquely among the IUCN categories system, cite the sustainable use of natural resources as a means to achieve nature conservation, together and in synergy with other actions more common to the other categories, such as protection. In general, IUCN recommends that a proportion of the area be retained in a natural condition, which in some cases might imply its definition as a no-take management zone.

1.1.10 Relationship between the IUCN categories

The categories do not imply a simple hierarchy, either in terms of quality and importance or in other ways – for example, the degree of intervention or naturalness. However, neither are all categories equal: all make a contribution to conservation, but objectives should be chosen with respect to the particular situation. Not all categories are equally useful in every situation, (Figure 3).



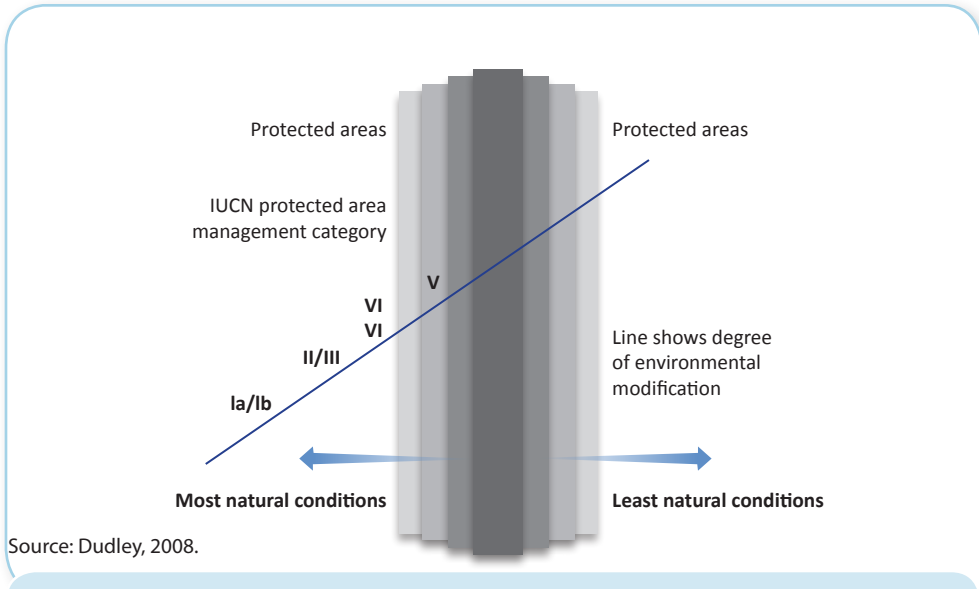


Figure 3. Relationship between the categories

The relationship between categories and management objectives is shown in Table 3.

Table 3. Relationship between categories and management objectives

Management objectives	Ia	Ib	II	III	IV	V	VI
Scientific research	1	3	2	2	2	2	3
Natural area protection	2	1	2	3	3	-	2
Conservation of genetic diversity and species	1	2	1	1	1	2	1
Preservation of environmental services	2	1	1	-	1	2	1
Conservation of specific natural and cultural features	-	-	2	1	3	1	3
Tourism and recreation	-	2	1	1	3	1	3
Training/ education	-	-	2	2	2	2	3
Sustainable use of resources in natural ecosystems	-	3	3	-	2	2	1
Conservation of cultural and traditional values	-	-	-	-	-	1	2

Note: 1 = first priority, 2 = second priority; 3= third priority.

1.2 The protected area system in Turkey

Turkey is a high-value biodiversity country and displays the character of a small continent in terms of biological diversity. The country has three different types of bioclimate (terrestrial, Black Sea and Mediterranean) and three biogeographical zones, namely: Euro-Siberian, Mediterranean and Irano-Turanian. Other reasons contributing to this rich biodiversity are Turkey's topographic, geological, geomorphologic and soil diversity; the existence of different types of aquatic bodies such as the sea, lakes, rivers, and fresh water, salt water and mineral water lakes; the altitude differences which range between 0 and 5 000 metres, the fact that the country has deep canyons and very different types of ecosystems and was less affected by the glacial period in comparison with European countries, the existence of the Anatolian Diagonal which links Northern Anatolia to Southern Anatolia, and the resulting ecological and floristic differences; and the fact that the country is situated at the intersection of three continents. In brief, Turkey has agricultural, forest, mountain, steppe, wetland, coastal and marine ecosystems as well as different forms and combinations of these ecosystems (Anonymous 2007, 2014).

Protected areas in Turkey are one of the most important tools for the conservation of biodiversity, and natural and cultural resources. These areas are also of vital importance for the health and welfare of people. Aside from biodiversity, the protected areas in Turkey supply people with ecosystem services such as food, cultural, and spiritual and recreational values, and offer opportunities to increase scientific knowledge through the study of ecological processes. Lands and waters under protective management also provide wider social and environmental benefits (Yenilmez Arpa, 2013).

Turkey has declared approximately 6.7 million hectares (ha) of land as protected areas. This corresponds to 6.69 percent of the total area of the country. The country has 18 types of protection categories, ranging from national parks to seed stands, (GDNCNP Protected Areas Statistics, 2019; Report on Nature Conservation, 2018).

Activities for the preservation of natural areas in Turkey began with the Forestry Regulations of 1870. Efforts towards the conservation of natural areas in Turkey were carried out within the scope of Forest Law No. 3116, adopted in 1937, and Terrestrial Hunting Law No. 3167. Until 1983, these actions were defined, planned and managed mostly in areas qualified as forests by units of the Ministry of Forestry and Agriculture (GDNCNP Working Group Report, 2017).

These two laws were the first pieces of legislation on the conservation of nature and wildlife in Turkey. The term "national park" was first used in Forest Law no. 6831 issued in 1956. Within the protective limits of this law (Article 25), national parks were accepted as rare and unique landscapes. National parks were also given the opportunity to create recreational areas for public use and outdoor activities. The

Belgrad Forest Recreational Area (İstanbul) was declared the first recreational site in 1956 and Yozgat Çamlığı was declared a National Park in 1958 under this law. Belgrad Deer Production Station became the first station for wildlife, established in 1958 under Terrestrial Hunting Law No. 3167. Studies on national parks, hunting and wildlife, and recreational areas were carried out by General Directorate of Forestry until 1976. Today, nature conservation and protected areas management studies are conducted by both government institutions and non-governmental organizations, (Yenilmez Arpa *et al.*, 2017).

By 1983, the following regulations had established specific types of protected areas:

- Forest Law No. 6831 defined Forest Reserves, Gene Conservation Forests and National Parks.
- Terrestrial Hunting Law No. 3167 defined Wildlife Development Areas.

After 1983, in order to identify, protect, plan and manage ecosystems and habitats where non-forest ecosystems are located, and fulfil the obligations of international and regional conventions to which Turkey is part, the following legislative acts entered into force:

- Law on the Protection of Cultural and Natural Assets No. 2863
- Environmental Law No. 2872
- National Parks Law No. 2873
- Decree Law (KHK) 383 for Special Environmental Protection Areas (SEPA)
- Terrestrial Hunting Law No. 4915, which became effective in 2003, is introduced pursuant to an amendment made to Terrestrial Hunting Law No. 3167 of 1937.

In addition to the terms in existence prior to 1983, the following regulations added further definitions (GDNCNP Institutional Report, 2018):

- National Parks Law No. 2873 defined Natural Parks, Natural Reserves and Natural Monuments.
- Law on the Protection of Cultural and Natural Assets No. 2863 defined Natural Sites, Historical Sites, Archaeological Sites and Urban Sites.
- Environment Law No. 2872 defined Wetlands of National and Local Importance.
- Terrestrial Hunting Law No. 4915 defined Wildlife Protection Areas and Wildlife Development Sites.
- Decree No. 383 defined Special Environmental Protection Areas.

Efforts to conserve biodiversity continued in a more systematic manner, especially after the 1990s with the emergence of concepts such as Important Bird Areas, Important Plant Areas, Important Turtle Nesting Areas and Key Biodiversity Areas. During the last ten years, the General Directorate of Nature Conservation and National Parks (GDNCNP), the General Directorate of Forestry (GDF), civil society organizations (CSOs) and universities, with some support from the private sector, have conducted protected area studies in a variety of regions and ecosystems, while the Ministry of Environment and Urbanization has carried out Special Environmental Protected Areas under the Barcelona Convention. Furthermore, natural sites and natural assets and related management activities are governed by Law No. 2863 and Decree Law No. 644. Historical and cultural values are managed and conserved under the responsibilities of the Ministry of Culture and Tourism (Yenilmez Arpa, 2005a; 2005b).

Table 4 provides a list of protected areas in Turkey by type. The statistical data related to protected areas managed by the MAF have been provided by the General Directorate of Nature Conservation and National Parks, the Department of Wildlife, the Department of National Parks, the Department of Sensitive Areas, the General Directorate of Forestry, the Forest Tree Breeding and Seed Research Institute, and the Department of Non-Wood Forest Products and Services (Protected Areas Statistics, 2019; www.milliparklar.gov.tr).

The statistical data related to protected areas managed by the MEU have been gathered from the General Directorate for Protection of Natural Assets (GDPNA) (<https://tvk.csb.gov.tr>).



Table 4. List of protected areas in Turkey

Protected areas managed by the Ministry of Agriculture and Forestry		
(MAF)	Number	Area (ha)
1. National parks	44	880,019.79
2. Natural parks	248	107,230.09
3. Natural reserves	30	46,726.71
4. Natural monuments	114	9,389.58
5. Wildlife development areas	84	1,162,788.47
6. Wetlands		
Wetlands of National Importance	59	869,697
Wetlands of Local Importance	13	14,513
Ramsar sites	14	184.487
7. Forest reserves	55	251.519
8. Gene conservation forests (in-situ)	328	43,813.90
9. Seed stands (in-situ)	315	41,558.60
10. Seed orchards (ex-situ)	183	1,423.40
11. Urban forests	136	10,263.00
12. Biosphere reserves	1	25,258
Protected areas managed by Ministry of Environment and Urbanization (MEU)	Number	Area (ha)
13. Special protected areas	18	2,582,968.00
14. Natural sites (Sensitive Areas for Absolute Protection, Qualified Natural Protection Areas, Sustainable Protection and Controlled Use Areas)	2,554	1,768,948.00
15. Natural assets (Monumental trees, Caves)	–	–
Monumental trees	8,411	
Caves	148	
Natural and cultural conservation projects by the Ministry of Culture and Tourism		
16. Cultural heritage sites	16	
17. Natural heritage sites	-	
18. Mixed heritage sites	2	

Note: Information on protected areas was updated on June 2020.

Source: GDNCNP Report on Nature Conservation, Protected Areas Statistics (2019); UBEP (2018-2028), 2019; www.says.gov.tr/istatistik, www.ogm.gov.tr; <https://kvmgm.ktb.gov.tr/dunya-miras-listesi.html>).

Figures 4 and 5 reflect the distribution of protected areas and special protected areas in Turkey.



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Source: Ministry of Agriculture and Forestry, (2020).

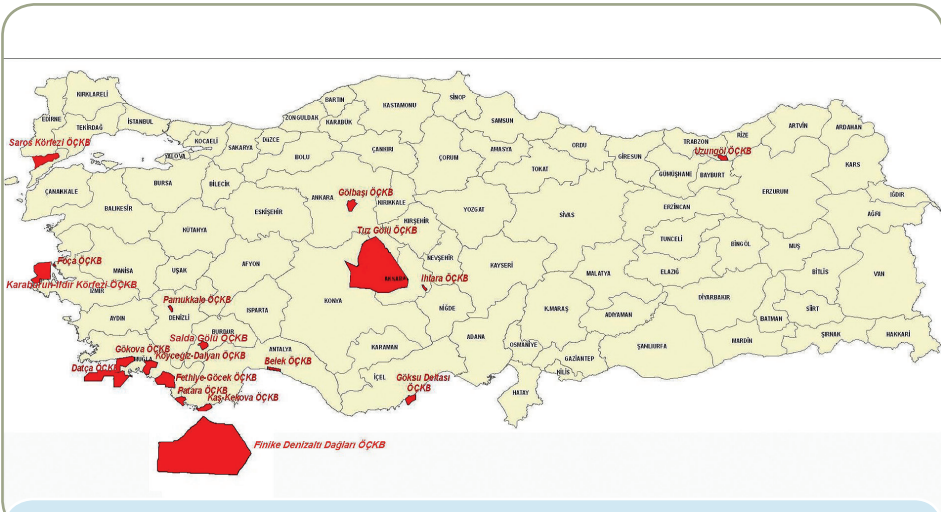


Figure 5. Distribution of special protected areas in Turkey

Source: Ministry Environment and Urbanization, (2020).

1.2.1 Protected areas under the national parks law (no. 2873)

The current National Parks Law was enacted in 1983 to establish the principles governing the selection and designation of national parks, natural monuments, nature parks, and nature reserve areas of national and international value, and the development and management of such places. (The approximate equivalent IUCN category is shown for each Turkish Category):

- “National Parks” are natural areas from a scientific and aesthetic standpoint, which have both natural and cultural values of rare national and international standing and include natural, recreational and touristic sites. (Closest IUCN Equivalent: Category II).
- “Nature Reserves” are natural areas designated to be used only for scientific and educational purposes, containing rare, threatened or endangered ecosystems and/or species and outstanding samples brought about by natural phenomena, which should be strictly protected. (Closest IUCN Equivalent: Category Ia).
- “Nature Parks” are natural areas containing characteristic vegetation and wildlife features, suitable for recreational activities and public repose. (Closest IUCN Equivalent: Category II or V, although Nature Parks tend to be much smaller than typical sites in these categories).
- “Natural Monuments” are natural areas with characteristic and scientific values, created by nature or natural phenomena, and protected within the framework of the principles of national parks (Closest IUCN Equivalent: Category III).

These areas fall under the overall administration of the General Directorate of Nature Conservation and National Parks within the Ministry of Agriculture and Forestry.

1.2.2 Protected areas under the forest law (no. 6831)

State forest land in Turkey is managed through the official Forest Management Plans under the overall administration of the General Directorate of Forests within the Ministry of Agriculture and Forestry. Many types of environmentally damaging management are prohibited under the Forest Law. Forest land can include four main categories of specially protected land:

- protection forests
- genetic conservation (reserve) areas
- seed stands
- seed gardens.

While Protection Forests can be classified under IUCN Category VI Areas within the scope of job descriptions for these areas and a closer review of management regimes, Gene Protection (Reserve) Areas can be considered under IUCN Category IV.

Due to rapid urbanization and in order to meet the recreational needs of citizens and expectations from green areas and forests in and around cities, the General Directorate of Forestry (GDF) began to consider the creation of urban forests in 2003.

The purpose of such forests is the cultivation and management of trees for their present and potential contribution to the physiological, sociological and economic well-being of urban society (Atmış et al., 2017).

1.2.3 Protected areas under the Culture and Natural Heritage Protection Law (No. 2863)

Enacted in 1983, the aim of this law is to define movable and immovable cultural and natural property to be protected, and to regulate proceedings and activities that establish principles and take implementation decisions in this field. The law covers:

- cultural properties
- natural properties
- conservation sites.

Turkey has been a party to the World Heritage Convention since 16 March 1983. There are three categories under the UNESCO World Heritage Convention:

- UNESCO Natural Heritage Sites
- UNESCO Cultural Heritage Sites
- UNESCO Mixed Heritage Sites.

As of 2017, there were 17 World Heritage Sites in Turkey, including 15 cultural sites and 2 mixed sites. The first three sites in Turkey, the Great Mosque and Hospital of Divriği, the Historic Areas of Istanbul and Göreme National Park and the Rock Sites of Cappadocia were inscribed on the list at the 9th Session of the World Heritage Committee, held in Paris in 1985. The latest inscription, Aphrodisias, was added to the list in 2017.

1.2.4 Protected areas under the decree law on the organization and duties for ministry of environment and urbanization (no. 644)

Specially protected areas

The Ministry of Environment and Urbanization is responsible for planning, management and monitoring Specially Protected Areas (SPAs) established under the Barcelona Convention.

Regarding the obligation of the Contracting Parties to the Barcelona Convention, areas at risk of destruction or disappearance due to pressures such as industry, tourism and construction are protected by the Council of Ministers decision No. 644 of 29 June 2011 (<https://tvk.csb.gov.tr/korunan-alanlar>).

Natural sites

As a conservation category, natural sites are protected areas that focus mainly on habitat conservation. They represent specific geological periods and have extraordinary characteristics due to their rare occurrence, whether above ground, underground or under water. The natural sites are also divided into three groups:

- 1st Degree Natural Sites
- 2nd Degree Natural Sites
- 3rd Degree Natural Sites.

As per the Principle Resolution on Natural Sites Protection and Use Conditions announced in Official Gazette No. 29959, of 25 January 2017, it was agreed that the current state of Natural Sites would be reassessed within the scope of Ecology-Based Scientific Research work to be carried out for four consecutive seasons in compliance with the Regulation on the Procedures and Principles for the Identification, Registration and Approval of Protected Areas, and that following such work, the existing sites would be re-registered as:

- sensitive areas under absolute protection
- qualified natural protection sites
- sustainable protection and controlled use areas.

Natural assets

Natural assets represent geological, prehistoric and historical periods, and must be protected for their rarity, features and natural beauty. Such sites may exist above ground, underground or under water: “monumental trees” and “caves” are protected as natural assets.

Monumental trees: These trees have extreme dimensions in terms of their age, diameter and height, and have a special place in the culture and history of local folklore. Their long life can act as a bridge between past and present, and present and future.

Caves : Both natural caves and cave ecosystems are protected as natural assets with their specific shapes and structures, living communities with vital links to each other, characteristic physical and chemical precipitates, and delicate living spaces where any intervention will break the cycle of development.

1.2.5 Protected areas under the regulation on Conservation of wetlands

Within the scope of this regulation, wetlands, Ramsar sites, Wetlands of National Importance and Wetlands of Local Importance are registered as protected areas in Turkey.

“Ramsar sites” are Wetlands of International Importance as identified and nominated by participating countries under the Ramsar Convention on Wetlands. The main responsible authority for wetlands areas is the Ministry of Agriculture and Forestry. National and local Wetland Commissions also play a vital role in managing wetland areas in Turkey.

1.2.6 Protected areas under terrestrial hunting law no. 4915 (Conservation and management of wildlife)

The Terrestrial Hunting Law describes two types of protected areas:

- **Wildlife Development Area:** areas that are conserved and developed for wild animals and hunting. Hunting precautions must be taken and hunting can only be carried out within the framework of a special hunting plan.
- **Wildlife Strict Reserves:** areas where priority is given to wildlife, where flora and fauna species are strictly protected together with their habitat.



1.2.7 UNESCO biosphere reserves

Camili (Artvin province) was designated as Turkey's first biosphere reserve under UNESCO's Man and the Biosphere (MAB) Programme on 29 June 2005. The main ecosystem types in the Camili Biosphere Reserve are alpine coniferous forests and temperate deciduous forests. The Camili basin forms part of the "Karçal Mountains Important Plant Area", one of the 122 Important Plant Areas (IPA) in Turkey. The basin is also the only region where the Caucasus bee has remained untouched, making it one of the three most important bee species in the world. The Camili Biosphere Reserve is also a highly significant part of the bird migration route within the Black Sea Basin. The area is situated within the "Eastern Black Sea Mountains Important Bird Area" and the "Karçal Mountains Important Bird Area". Camili is characterized by very traditional rural lifestyles with hazelnut farming and honey production – the main economic activities in the reserve. These forms of agriculture are marked by labour-intensive procedures and natural farming processes. Work is currently underway to establish a second biosphere reserve in the Yıldız Mountains and the Kırklareli Province in Trakya Region.

1.2.8 Biodiversity forest hotspots

Forests are among the most significant of Turkey's ecosystems in terms of biodiversity, but are under-represented in the protected area system. Despite their significance, the total extent of forest areas benefiting from some form of protection represents less than 4 percent of national forest cover. As a result of a regional Mediterranean forest gap analysis aimed at identifying ecologically representative forest areas not covered under the protected area system, nine important "gaps" or "hotspots" were identified in Turkey (Figure 6). In 1999, as Turkey's "Gift to the Earth", the government made a commitment to establish or extend protected areas at these nine forest hotspots: **Küre Mountains (Kastamonu), Amanos Mountains (Hatay), Babadağ (Fethiye), Datça Peninsula and Bozburun, Fırtına Valley (Rize), İstanbul Forests, Karçal Mountains (Artvin), Yenice Forests (Karabük), and İbradi- Akseki Forests (Antalya).**

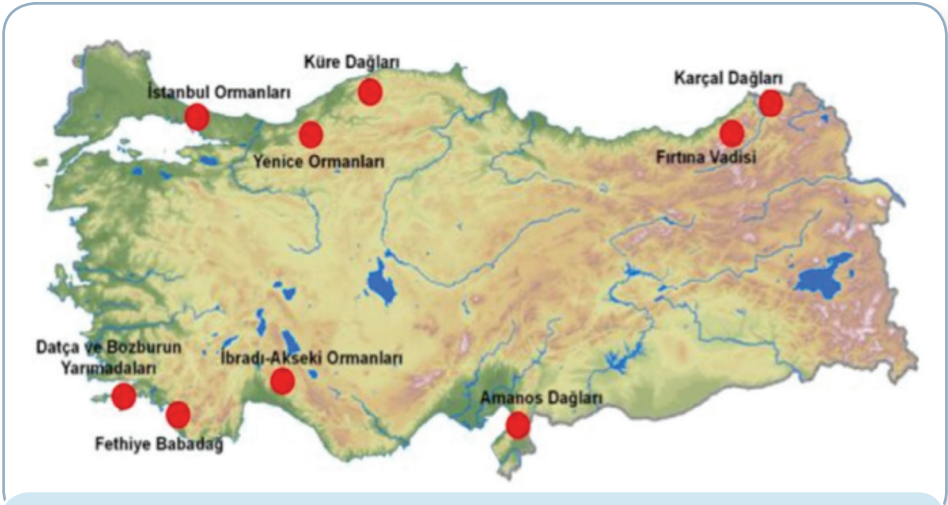
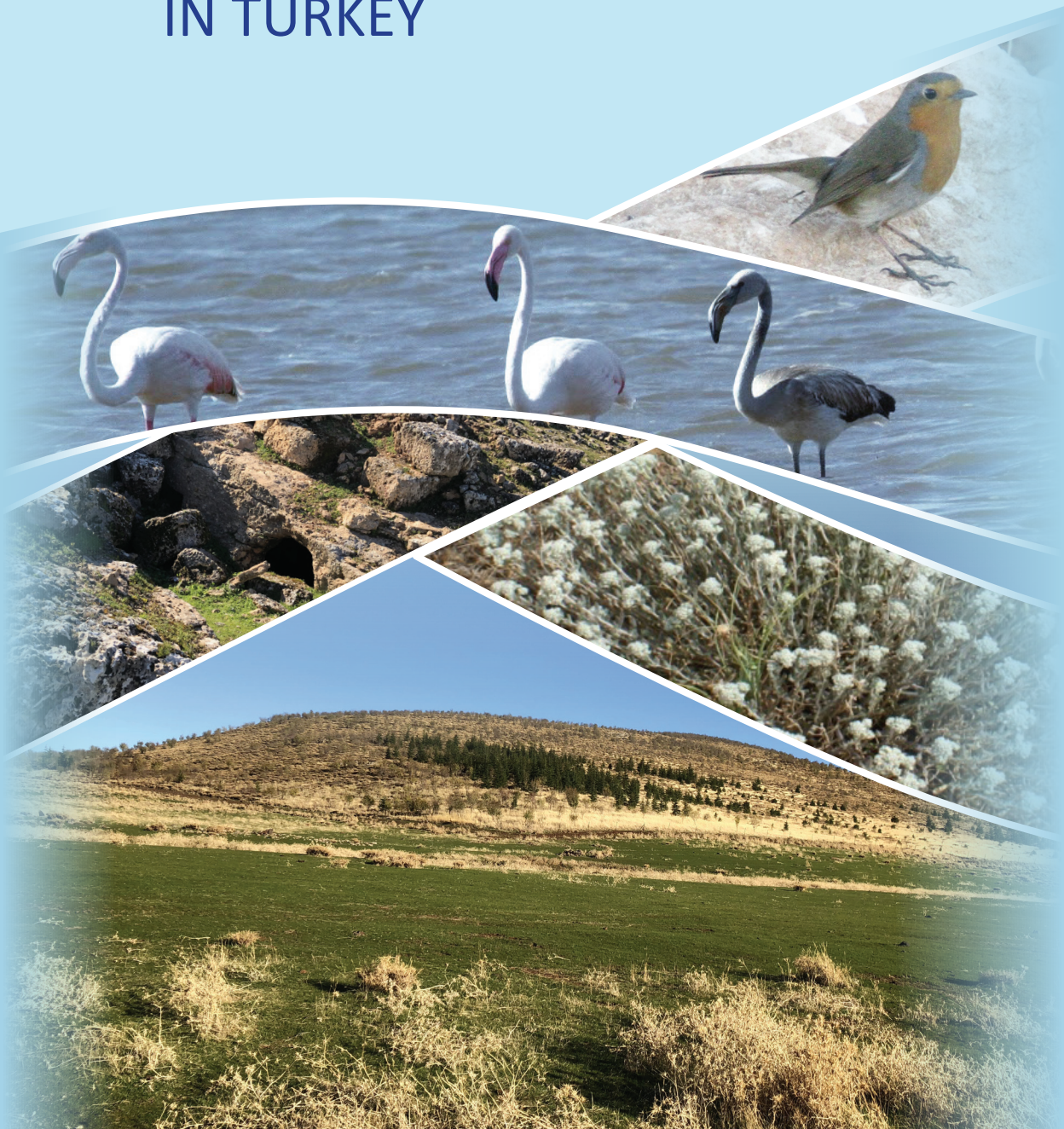


Figure 6. Forest protection hotspots in Turkey



CHAPTER 2

DESIGNATION PROCESS FOR PROTECTED AREAS IN TURKEY





2. DESIGNATION PROCESS FOR PROTECTED AREAS IN TURKEY



2.1 Current situation

The Ministry of Agriculture and Forestry, the Ministry of Environment and Urbanization and the Ministry of Environment and Urbanization are the main authorities responsible for the establishment and management of protected areas in Turkey. While in-situ conservation is carried out mainly by the General Directorate of Nature Conservation and National Parks, the General Directorate of Forestry also works on in-situ and ex-situ protection of forest areas and forest biodiversity within the framework of the MAF.

The General Directorate for Protection of Natural Assets is the main responsible authority for Special Environment Conservation Areas, Natural Site areas and Natural Assets. The main responsibilities for the establishment of different types of protected area and ecosystem in Turkey are summarized in Table 5.

Table 5. Relevant institutions and legislation for the protected areas of Turkey

Conservation category	Related legislation	Responsible Institution
National parks	National Parks Law No. 2873 and by-laws	Responsible Institution General Directorate of Nature Conservation and National Parks (GDNCNP) - Ministry of Agriculture and Forestry (MAF)
Nature parks	National Parks Law No. 2873 and by-laws	GDNCNP-MAF
Natural reserves	National Parks Law No. 2873 and by-laws	GDNCNP-MAF
Nature monuments	National Parks Law No. 2873 and by-laws	GDNCNP-MAF
Wildlife development areas and wildlife conservation areas	Terrestrial Hunting Law No. 4915 and by-laws	GDNCNP-MAF

Wetlands and RAMSAR sites	RAMSAR Convention and by-law on Management of Wetlands	GDNCNP-MAF
Protection forests	Forest Law No. 6831	General Directorate of Forestry (GDF)-MAF
Gene conservation forests (in-situ)	Forest Law No. 6831	GDF-MAF
Seed stands (in-situ)	Forest Law No. 6831	GDF-MAF
Seed orchard (ex-situ)	Forest Law No. 6831	GDF-MAF
Urban forests	Forest Law No. 6831	GDF-MAF
Biosphere reserves	MAB Programme of UNESCO	GDNCNP and GDF-MAF
Special environmental protection areas	Barcelona Convention and Presidential Decree No. 1i	General Directorate for Protection of Natural Assets (GDPNA), Ministry of Environment and Urbanization (MEU)
Natural sites	Presidential Decree No. 1	GDPNA-MEU
Natural assets	Presidential Decree No. 1	GDPNA-MEU
Cultural heritage sites	Conservation of Natural and Cultural Assets Law No. 2863	MCT
Natural heritage sites	Conservation of Natural and Cultural Assets Law No. 2863	MCT
Mixed heritage sites	Conservation of Natural and Cultural Assets Law No. 2863	MCT



2.1.1 Establishment process for a protected area by GDNCNP

At the beginning of the establishment process, the impulse to establish a new protected area usually comes from NGOs or local institutions and experts. The proposal is submitted to the Ministry of Agriculture and Forestry, and if accepted, the proposal is evaluated and the boundaries of the proposed area are established. The technical staff then visit and assess the proposed site. If the Ministry once again reach a positive decision, the inventory division and the field service prepare the site proposal document.

Regardless of its status, if the area falls under a forestry regime, the area identification file is submitted to the Ministry of Agriculture and Forestry. If the area does not fall under a forestry regime, the registration file is submitted to the Ministry of Environment and Urbanization. In the event that the area is a national park or a wildlife development area outside the scope of a forestry regime, the proposal is submitted to the Presidency (of Administrative Affairs under the General Directorate of Law and Legislation). All subsequent documents are posted online in the Official Gazette. The establishment process for a protected area by GDNCNP is summarized in Figure 7.

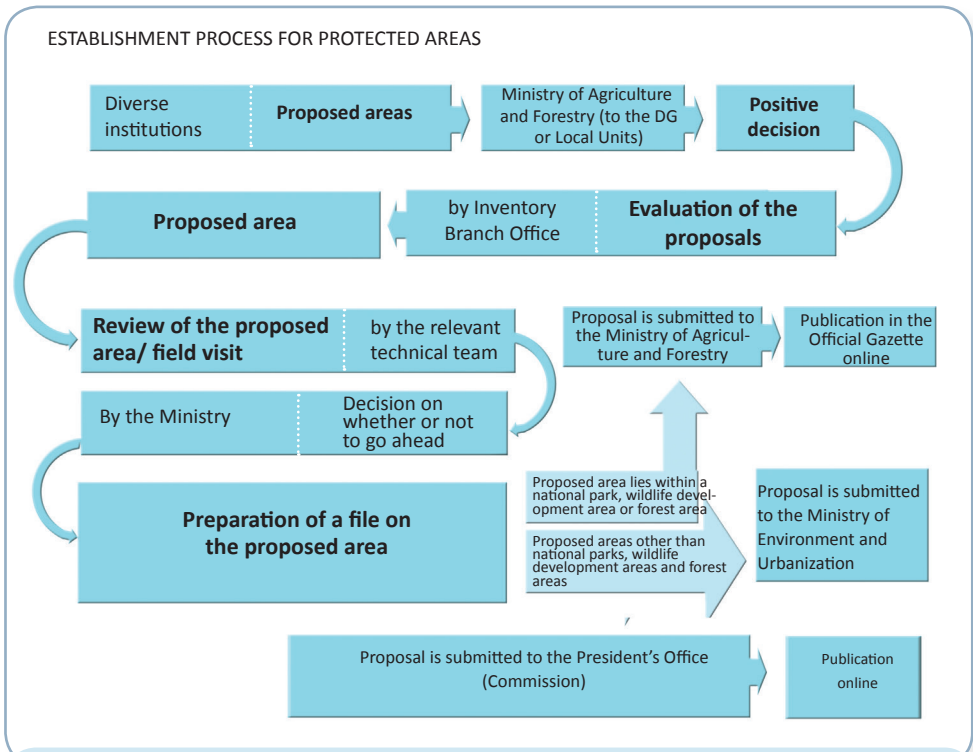


Figure 7. Establishment process for protected areas under the General Directorate of Nature Conservation and National Parks

2.1.2 Designation process for wetlands

By-law on Management of Wetlands, Article 18(1): The following procedures shall be applied for the determination of wetlands of national and local importance:

Determination and registration of wetlands with national importance: The survey and inventory report to be prepared by the field-based extension offices and divisions of the Ministry shall be submitted to the local wetland commission, taking into account the territorial boundaries where the area is located in order to determine an area as a national wetland. If it is decided by the local commission that the site is a nationally important wetland, the establishment dossier/file is sent to the Ministry for submission to the National Wetland Commission. If it is decided that the area is a nationally important wetland as a result of the evaluation made by the Ministry, the establishment dossier/ file is sent to the National Commission for consideration and decision. If the National Commission decides that the area is a nationally important wetland, it shall be registered and announced by the Ministry of Agriculture and Forestry for areas under the forest and forest regime. If the area falls outside the forest regime, the establishment file is submitted to the Ministry of Environment and Urbanization. The registration and announcement are conducted by the Ministry of Environment and Urbanization, (By-law on Management of Wetlands, 2014). The establishment process for a wetland area is summarized in Figure 8.

Determination of local wetlands: In order to determine whether the area is a wetland of local importance, the report prepared by the provincial organization of the Ministry of Agriculture shall be discussed and submitted for the approval of the General Directorate. If the area is considered a wetland with local importance, the boundaries of the area are determined, and the protection and usage principles of the area are determined. The activities to be carried out in and around the area shall be evaluated and finalized by the provincial organization of the Ministry within the framework of the principles for the application of protection. These areas are monitored with report submitted to the local commission once a year by field staff and units of the Ministry. Monitoring reports are evaluated by the local wetland commission and the evaluation report is submitted to the Ministry, (By-law on Management of Wetlands, 2014).



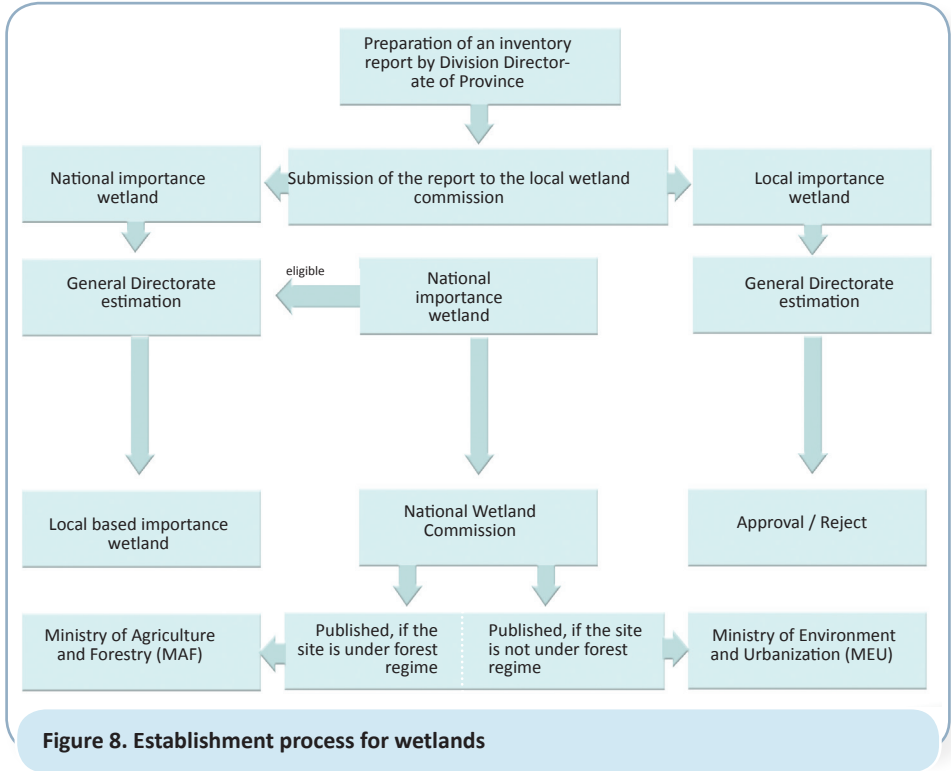


Figure 8. Establishment process for wetlands



2.1.3 Designation process for Ramsar sites

By-law on Management of Wetlands, Article 27(1): Areas to be included in the Ramsar List of nationally important wetlands shall be determined by the National Wetland Commission.

Determination and announcement of the boundaries of Ramsar areas:

By-law on Management of Wetlands, Article 28(1): Ramsar sites (Wetland of international importance): Evaluation of the wetland – which must meet at least one of the criteria for wetlands of international importance – is undertaken by the provincial organization. The establishment dossier/ file is then sent to the Ministry for a decision. After obtaining the comments and remarks/ opinions of the relevant ministries and organizations, the establishment dossier/ file is submitted to the National Wetland Commission and published in the Official Gazette for inclusion in the Ramsar list following the approval of the National Commission, (By-law on Management of Wetlands, 2014). The establishment process for a RAMSAR area is summarized in Figure 9.

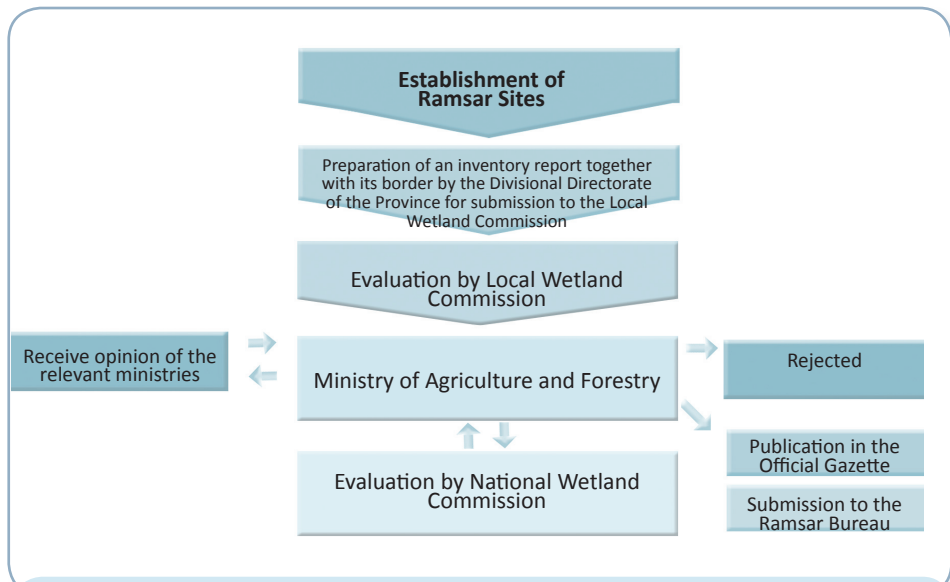


Figure 9. Establishment process for Ramsar sites

CHAPTER 3

DESIGN OF THE PROCESS FOR IDENTIFYING A PROTECTED AREA



3. DESIGN OF THE PROCESS FOR IDENTIFYING A PROTECTED AREA



Many countries across the world have started to protect and preserve natural landscapes of beauty and their associated values. However, there is a lack of a systematic approach to identifying areas for protection. Until recently, the selection of protected areas in Turkey was likewise characterised by the lack of a systematic approach. The process usually focused initially on aspects of the forestry regime, taking into account institutional powers and responsibilities. In general, identification of a protected area focused on:

- the visual landscape value
- the potential in terms of recreational means
- the existence of inaccessible natural components of the forest
- political pressures and the demands of local administrators
- the effectiveness of pressure from organizations working to protect nature, and universities.

Analyses have highlighted similarities in the selection of protected areas in many areas across the world. Most of the identified sites are located at high altitudes in hard-to-reach areas, or on infertile soils, rather than being recognized for their biodiversity (Zeydanlı *et al.*, 2017).

From a biological diversity standpoint, a more systematic approach has been adopted in determining areas for the protection of species under threat of extinction, particularly with the advent of international conventions in the 1980s.

For instance, conservation approaches that adopt a wider perspective, encompassing sites such as Important Bird Areas (IBA) and Important Natural Areas (INA), are considered a significant step in the transition towards more holistic and systematic approaches, as far as protected areas are concerned. However, although such approaches focusing on biological diversity cover a vast area, the target in general is usually a single group of species. Thus, even if they present a more systematic approach, they have shortcomings from a holistic standpoint (Zeydanlı *et al.*, 2017).

⁸ Turkey became a party to the Convention of Biological Diversity in 1996.

Such approaches that have been developed, and are evolving and being monitored at a global level are also starting to be implemented in Turkey in a similar manner. Identification protocols applicable to important bird areas and important natural areas, as well as plant areas, have been adopted in Turkey. The Systematic Protection Planning (SPP) approach, which has been widely used in recent years, has also been implemented in certain geographical regions, and is now accepted by the nature preservation public authorities, NGOs and universities at the national level, resulting in the acquisition of knowledge and experience.

However, it has also been noted that a systematic area identification approach is not used at present in the identification of protected areas in Turkey. This is in spite of the fact that the Protected Areas Work Schedule (PAWS) of the Convention of Biological Diversity (CBD) recommends that parties to the Convention create an effective system of protected areas and identify new protected areas using the ecosystem approach⁹.

The main objective of the PAWS is to encourage the creation of national protected area systems that are functional, effective and ecologically compatible; that can extend beyond national borders when required; and that are integrated into broader land, fresh water and marine area management in line with the ecosystem approach (adopted under the CBD) (Dudley *et al.*, 2005).

This section of the Guidelines covers the implementation steps during the course of creating a protected area. It aims to remove concerns associated with the identification of protected areas and to contribute to meeting the requirements set forth in the PAWS. It presents the process including the identification of the representation status of protected areas within the national protected area system, the gap analysis, the identification of protection priorities and targets, and the selection and announcement of the protection category taking into consideration the systematic protection planning approach and the IUCN protected area categorization system. A globally accepted Systematic Protection Planning (SPP) approach with broad implementation potential is suggested for identifying and categorizing candidate areas.

The suggested SPP approach is motivated by concern for the approach and methodology presently used to identify protected areas. When choosing protected areas, historically there has been a tendency to opt for areas that are relatively far from human pressures but have a low ecological value, rather than those whose priority is linked to biological diversity, sensitivity, vulnerability and protection needs. Another reason for suggesting the SPP approach is that political pressures and administrative decisions are factors in the process of determining protected areas. The declaration of protected areas may take into consideration pressures from certain environmental groups, local administrations, and sometimes the proposals and suggestions of the decision-makers – to the extent that even areas that are not a priority in protection terms, but which are cared for by such groups, may be proposed and declared as protected areas.

⁹ www.cbd.org

The significance of an SPP approach, as opposed to the identification and declaration of individual areas, is linked to a comprehensive rationale that encompasses the natural environment and other areas, and is holistic in terms of macro-level decision-makings, resulting in a new protected area system that covers several sectors and topics.

The SPP approach focuses on the compilation and synthesis of existing data, and offers a general framework geared towards understanding the entire system. It contributes to the identification of protection priorities at a regional and national level, and to the actualization of protection efforts within a holistic and a longer-term planning approach. The approach aims to identify the priorities of protected areas as a topic of national importance, define the relationships between different departments and categories of protected areas, and identify specific protected zones and land use types. While adopting a more strategic outlook to protected areas, it also identifies shortcomings, needs and opportunities within the protected areas system (Davey, 1998).

Systematic Protection Planning is a spatial prioritization tool that supports the decision-making process by determining where and how biological diversity should be preserved in the most suitable manner. It is based on two main objectives: representativeness and permanence. Biological diversity acts in accordance with the principle that species must be adequately represented in a protected area network, thus allowing for the continuation and permanence of species, characteristics and processes (Harris *et al.*, 2019).

SCP is used to identify priority areas for biodiversity (Critical Biodiversity Areas [CBAs] and Ecological Support Areas [ESAs]), a desired state or management objective is set for these areas, and then activities compatible with achieving or maintaining that state are specified (Harris *et al.*, 2019).

According to Zeydanlı *et al.* (2017), SPP is “a process of creating a protection management system (not limited to the protected areas only) whereby the entire biological diversity the protection targets of which have clearly been identified is represented in a permanent (long term) manner”. As its methodology requires, it is implemented across large areas (countries, geographical regions, ecological or subecological regions) and sets protection priorities for territories covering millions of hectares.

The SPP approach relies on two processes: gap analysis (the identification of priority areas for Protection) and complementarity efforts (Zeydanlı *et al.*, 2017).

Gap analysis refers to the identification of biological diversity components that are not under protection in a specific area. These are called protection gaps. The protection system to be developed must be planned in such a way as to fill these gaps.

The complementarity approach utilizes computer applications to ascertain how best to offer protection to the highest number of biological diversity components in the fewest number of places (Zeydanlı *et al.*, 2017).

Zeydanlı et al. (2017) has summarized some of the basic aspects of the SPP approach.

Integrity – geographical scope: the scope covers a vast area at the level of a certain geographical region, sub-region, or national or international ecological region, rather than individual areas. It allows areas to be identified in a complementary manner by making an assessment that covers the entire country or region through an integral approach, resulting in a high rate of representativeness.

Integrity – biological scope: other components of biological diversity (e.g. ecosystem, habitat, process diversity) are added to the evaluation process to the extent possible, as well as data on species. The approach strives to take into consideration all components of biological diversity.

Integrity – protection and use: the SPP approach assesses important areas from a biological diversity standpoint, using a management approach that does not limit assessment to protection areas, but also takes into account the protection management approach in production landscapes.

Representativeness: the rate of inclusion of biological diversity components (e.g. species and species cohabitation, ecosystems, ecological and evolutionary processes) in the area which constitutes the subject of the protection system assessment provides the degree of representativeness for the specific area. Biological diversity components not represented within the system are identified as protection gaps. The systematic approach considers representativeness and efficiency together.

Efficiency: the SPP approach aims to incorporate as many protection components as possible across as few places as possible. Supported by special algorithms, the approach works to ensure that the identified areas do not repeat each other in terms of protection components, but rather complement each other.

Permanence – ecological and evolutionary processes: the SPP approach takes into account all components that ensure or hinder the long-term continuity of the relevant area. Such factors include species, ecological and evolutionary processes, human activities that exert pressure on biological diversity goals, and climate change. To maintain existing protection goals for the identified locations, possible changes and effects must also be taken into consideration.

Permanence – climate change: the SPP approach takes into consideration the effects of climate change on biological diversity components, in relation to permanence. These include impacts on species and cohabitation, as well as changes in distribution across areas.

Objectivity and scientific soundness: it is important that the methods applied in priority areas for protection are objective and scientifically consistent. SPP places importance on the use of methods of analysis that are data based, quantitative and repeatable.

Participation: the SPP approach values participation both during the data compilation and analysis stage and during implementation in terms of the permanence and ownership of the process. It emphasizes the importance of working with key

stakeholders at each stage, and highlights their importance in joint decision-making and subsequent implementation.

Prioritization: once key areas of biological diversity have been identified, and analyses and stakeholder meetings have been conducted, the next stage is to prioritize protection. This stage must consider legal and managerial restrictions and means, including threats where work has been undertaken, protection opportunities and any associated biological significance.

Implementation: this covers the identification of general protection for Priority Biological Diversity Areas, sustainable resource use and sustainable development approaches, with a view to ensuring that implementation can proceed. SPP employs an implementation-driven approach from the outset.

Currently, the SPP approach is being used as a guide by many countries and organizations. In Turkey, work based on this approach was initiated by NGOs and universities in the 2000s. Identification processes for Important Bird Areas, (Kılıç and Eken, 2004; Yazar and Magnin, 1997) and Important Plant Areas, (Özhatay et al., 2003), initiated by the Turkish Society for the Protection of Nature (DHKD), were the initial first steps in systematic protection planning in Turkey. These processes played an important role both in identifying new protected areas and in helping ensure a transition to systematic protection planning.

Subsequently, more comprehensive work was carried out within the scope of the WWF Mediterranean Programme (2001), including a gap analysis that covered the entire Mediterranean Basin. The Turkish Society for the Protection of Nature (DHKD) planned and undertook a more detailed national gap analysis in 1999 based on the results of the former gap analysis. This work ensured the technical infrastructure and experience necessary for the creation of a national gap analysis programme in Turkey (Zeydanlı *et al.*, 2017).





The SPP approach, as a decision support tool, has been implemented in the Mediterranean Region, the South East Anatolian Region, the Black Sea Region, the Aegean Region, the Lower Caucasus Region and the Anatolian Cross Region in Turkey¹⁰. NGOs, universities and the Ministry of Agriculture and Forestry have collaborated – and continue to do so – throughout these processes. However, this approach has not yet been adopted as a national policy and is limited to projects carried out at the regional level.

However, Turkey has acquired a leading position among countries applying the approach, and has further expanded SPP with the “Threat Analysis Method”, carried out particularly within the scope of the Coastal Aegean Region Gap Analysis and its application in protection planning (Ün et al., 2009).

Application of the SPP approach within ecological regions and across vast areas involves:

- research on biological diversity, socio-economic aspects, protection possibilities, threats and pressures, as well as the priorities of the implementing entities;
- the identification of protection goals, and protection priorities and needs;
- the creation of a Protection Management System to ensure that biological diversity and natural resources are preserved in a permanent manner.

This system identifies the locations of priority protection areas in the region as well as the forms of protection required. The process including the identification and categorization of the protected area up to its inclusion in a protection programme through a systematic approach is presented in Figure 10.

¹⁰ www.dkm.org.

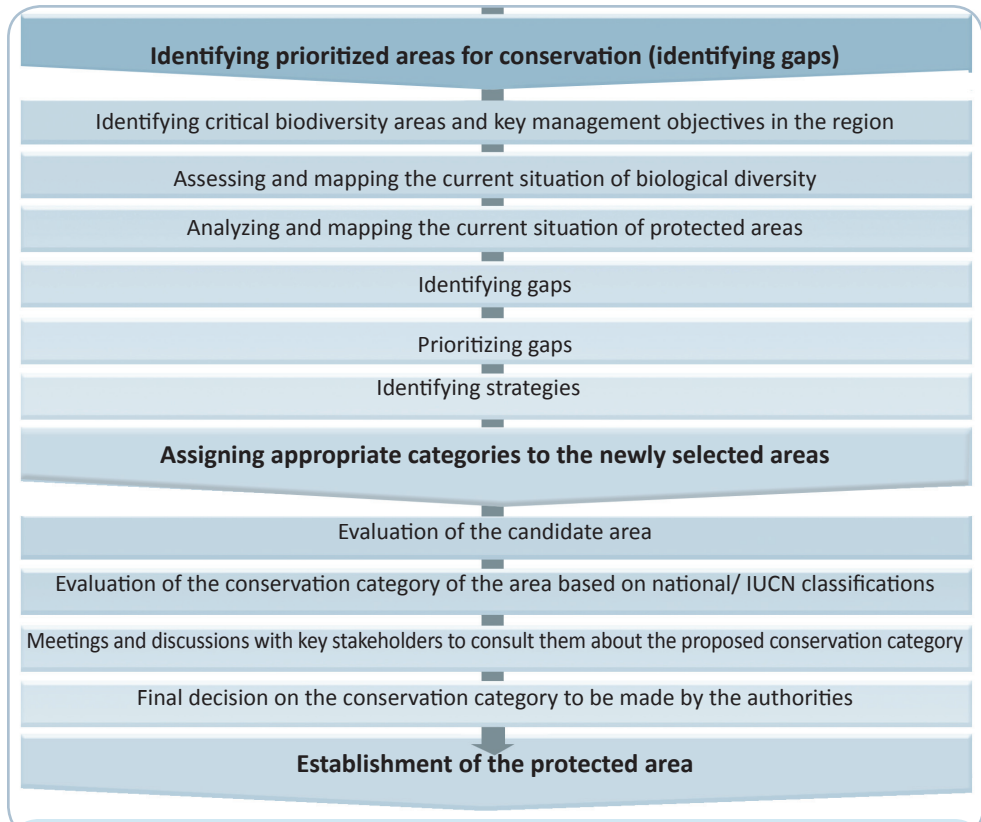


Figure 10. Recommended protected area identification process

The following sections examines two stages out of those listed in Figure 10: “Identifying priority areas for protection” and “Allocating relevant categories for newly selected areas”

3.1 Identifying priority areas for protection

There are many reasons to create a protected area. Notable among these are the preservation of biological diversity components (i.e. habitats, the ecosystem and species as well as ensuring the continuity of extraordinary landscapes). In the present day, protected areas are generally established to eliminate threats to sensitive landscapes or to prevent loss of biological diversity. However, in situ (and ex-situ) protection of genetic resources is assuming increasing importance in terms of ensuring food safety.

From this perspective, the objectives of these Guidelines are to

- create the comprehensive protected area systems suggested in the Protected Areas Work Schedule (PAWS) of the Convention of Biological Diversity (CBD), and to implement the ecosystem approach during this process;

- monitor the process of systematic protection planning;
- ensure the declaration of the protected area taking into account the protection categories raised in IUCN and other internationally accepted conventions, to which Turkey is a party.

The first step in the process is to carry out a gap analysis with the purpose of identifying priority areas for protection.

While the number of gap analyses conducted at a global level has risen rapidly, the number of fully comprehensive examples of national gap analyses is still not sufficient. The CBD Secretariat has prepared an Ecological Gap Analysis Technical Guide¹³ to enable countries to conduct national gap analyses in protected area systems. These Guidelines have drawn significantly from this guide.

Gap analysis in the protection context is used to identify biological diversity components (i.e. species, ecosystems and ecological processes) that are not adequately represented in the current protected areas network or are not sufficiently protected with other effective, long-term protection approaches. It is also used to identify the represented areas¹².

Gap analysis should be implemented across wide areas, ideally encompassing the entire ecoregion, as holistic decisions on protection are possible only at this scale. Moreover, working within ecological rather than administrative helps to clarify the demands of the ecosystem regarding the protection of biological diversity and its components. Gap analyses may range from simple practices based on a comparison of representativeness of biological diversity within the existing protected area network to complicated mapping works that require detailed data compilation and analyses, and the use of software decision packages to identify optimum protected area networks¹³.

Ecological gap analysis is used to determine gaps in order to identify biological diversity and its components along with an appropriate supportive framework, which can include ecological corridors and buffer zones, nature preservation requirements and candidate protected areas. During the initial stage, the analysis determines general objectives such as the required efforts to protect all threatened species, the existing rates of all main habitat types, and so on. A gap analysis approach is recommended to identify the requirements related to protected area management from an ecological perspective and an ecosystems approach, and the new areas most suitable for protection.

Even though gap analysis encompasses several different methods ranging from simple to complex, all consist of three stages:

- 1) identifying and mapping key areas for biological diversity,
- 2) mapping current protected areas, and
- 3) comparing these two sets of information to identify differences.

¹¹ www.cbd.int/protected-old/gap.shtml

¹² *ibid.*

¹³ *ibid.*

Gap analysis can contribute to the development of plans for expanding protected area systems and to the protection of all representative elements of biodiversity in a country. Whenever possible, gap analyses should benefit from regional planning works such as ecoregional plans, and analyses of specific biological characteristics such as endemic or globally rare and threatened species. While a certain species may be rare in one country due to natural boundaries or historical reasons, it may be present in larger numbers in other countries. Consequently, the protection priority of such species will be lower compared to globally rare or endemic species. Works undertaken with a broader scope will clearly identify cross-boundary protected areas and areas where they may be a need for other types of regional cooperation (Dudley et al., 2005). All gap analyses highlight a range of “gaps” including representation gaps within the protected area network, ecological gaps and management gaps.

Representation gaps occur where the examples of certain species or an ecosystem in a protected area or situation are insufficient to ensure long-term protection.

Ecological gaps occur where either the treatment of a species or an ecosystem is insufficient, or the required specific ecological conditions are not adequately met in terms of protected area(s), species movement and long-term survival, or the functioning of the ecosystem when creating the protected area system.

Management gaps occur where protected areas have been created but spatial conditions in terms of area management practices (management targets, governance types or management efficacy) cannot ensure complete security for specific species or ecosystems¹⁴.

The Protected Areas Work Schedule of the Convention of Biological Diversity emphasizes that gap analyses should aim not only to increase the number of protected areas but also to ensure that biological diversity is preserved. Furthermore, the gap analysis must be conducted as part of a multi-stakeholder process. A target was set for completing gap analyses by the end of 2006, (see Box 1).

Box 1. Commitment to gap analyses

Action 1.1.5: “By 2006, complete protected area system gap analyses at national and regional levels based on the requirements for representative systems of protected areas that adequately conserve terrestrial, marine and inland water biodiversity and ecosystems. National plans should also be developed to provide interim measures to protect highly threatened or highly valued areas wherever this is necessary. Gap analyses should take into account Annex I of the Convention on Biological Diversity and other relevant criteria such as the irreplaceability of target biodiversity components, minimum effective size and viability requirements, species migration requirements, integrity, ecological processes and ecosystem services.”

Source: CBD Programme of Work on Protected Areas, www.cbd.int/protected-old/gap.shtml

¹⁴ <https://www.cbd.int/protected-old/gap.shtml>

The Protected Areas Work Program of the Convention of Biological Diversity is a comprehensive programme that defines the steps to be taken towards the improvement of the protected area system and the creation of effective protected areas. Gap analysis is a key stage that contributes to the improvement of the protected areas system.

The steps that can be taken during the course of the gap analysis are specified in Figure 11.

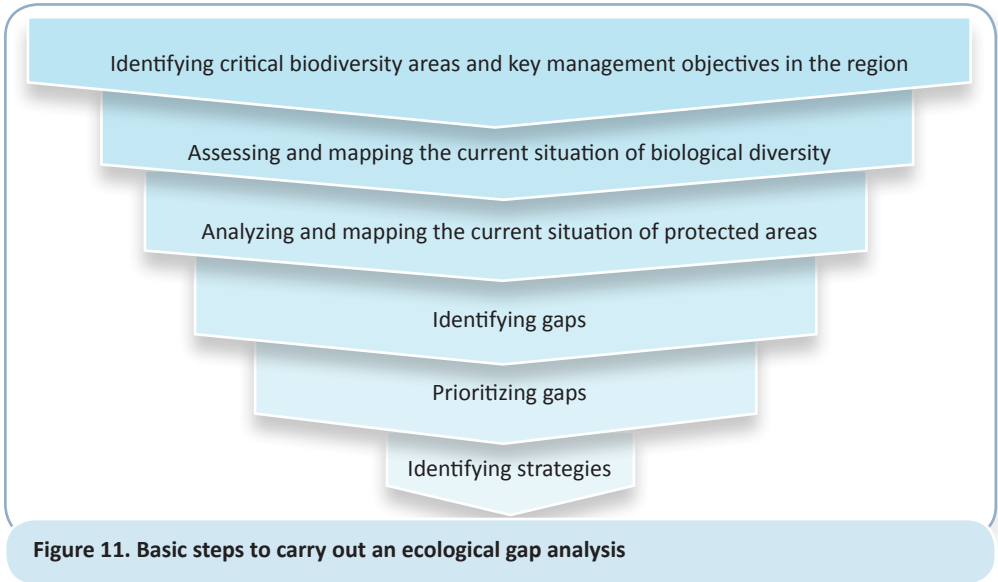


Figure 11. Basic steps to carry out an ecological gap analysis

Source: Dudley and Parish (2006).

3.1.1

Identifying critically important biological diversity areas and key management targets

The first stage of the gap analysis is to split the area into smaller units in order to facilitate the work (data compilation, analysis, assessment, etc.), all of which is performed at the unit level.

The gap analysis generally focuses on indicators and includes targets to be able to evaluate the success of protection measures. The analysis defines the targeted biological diversity elements, the species to be assessed, and the habitats and the ecosystem. Targets focus ideally on the quantity and distribution of the area to be protected in order to ensure the continuity in terms of ecological and genetic diversity of a species or ecosystem (Dudley and Parish, 2006). A KBA can be identified under the vulnerability and the irreplaceability criteria simultaneously, (Table 6). A KBA network defined according to the presence of species meeting the vulnerability or the irreplaceability criteria would be expected to include all sites that play a crucial role in maintaining the global population of these species (Langhammer *et al.*, 2007).

Table 6. Summary of KBA criteria and thresholds

Criterion	Sub-criteria	Provisional thresholds for triggering KBA status
Vulnerability Regular occurrence of a globally threatened species (according to the IUCN Red List) at the site	N/A	Critically Endangered (CR) and Endangered (EN) species – presence of a single individual Vulnerable sp
Irreplaceability Site holds X%? of a species' global population at any stage of the species' lifecycle	a) Restricted-range species	5% of the global population of species with a global range smaller than 50,000 km ² is observed at site
	b) Species with large but clumped distributions	5% of global population at site
	c) Globally significant congregations	1% of global population seasonally at the site
	d) Globally significant source populations	Site is responsible for maintaining 1% of global
	e) Bioregionally restricted assemblages	population To be defined

Langhammer *et al.*, 2007)

3.1.2 Analysing and mapping the current state of biological diversity

At this stage, data are compiled in order to identify and compare the species that will constitute the basis for protection and for which protection is needed. The ideal approach is to focus on critical matters such as the current distribution of species, their biological diversity and threats.

However, as it is not feasible to compile data about all biological diversity elements in an area, “representative” components considered to reflect the biological diversity in the region are selected. Representatives are generally selected from among groups of species for which the distribution, cohabitation, environmental variables, rare species or species under threat, and unique living communities are well known (Levin *et al.*, 2013; Zeydanlı *et al.*, 2017).

The process of data collection for gap analysis does not start from scratch. Every nation has undertaken basic research at each level on biological diversity. Additionally, inventories and surveys have been made at regional and global levels, with free use made of certain GIS-based data and satellite images. All these data allow for the study of basic needs and gaps without having to work on a very large vegetation pattern. Finally, the biological diversity inventory work carried out recently in Turkey by the Ministry of Agriculture and Forestry at the level of all cities constitutes an important source of data for gap analysis.

Gap analysis compares biological diversity values that need to be protected with existing protected areas. Therefore, the first stage focuses on compiling current information on both the areas under management and the biological diversity in question, in order to make the comparison. Two fundamental sets of information are needed:

- the current distribution of all the components of biological diversity;
- information on the current status of this biological diversity as well as existing trends, even if these seem random (Dudley and Parish, 2006).

Biological diversity is examined at four levels:

- genetic diversity
- diversity of species
- ecosystem diversity
- ecological processes (Zeydanlı *et al.*, 2017).

As it is also impossible to map all species, the gap analysis focuses on the data of well-known species (e.g. birds), species representing certain habitats and ecosystems. Mapping can be done for ecosystems and habitats or species and special habitats (Dudley *et al.*, 2005). Data compiled on site or from satellite images, aerial photographs and previously prepared maps can be used in the analysis. Obtained and existing datasets are merged through the standardizing of habitats, estimated-based modelling and geographic information systems (GIS) (Dudley and Parish, 2006). Web pages that contain information on species and general biological diversity information and examples of reference works are listed in Box 2. and the sample area-based works to identify sites with protection priority is listed in Box 3.

Box 2. Global and regional works to define high-priority areas for biological diversity

Biological diversity hotspots:

Plant diversity centres

Endemic bird areas:

Global 200

High biological diversity wild areas:

Water basins of the world

Web resources addressing global issues

<http://worldwildlife.org/science/ecoregions/terrestrial.cfm>

Terrestrial Ecoregions of the World (Olson *et al.*, 2001) – <http://worldwildlife.org/science/ecoregions/terrestrial.cfm> <http://worldwildlife.org/science/data/terreco.cfm> (Dudley and Parish, 2006).

Box 3. Area-based works to identify sites with protection priority

Fundamental Biological Diversity Areas
 Alliance for Zero Extinction Sites
 Important Bird Areas
 Border forests
 Important Plant Areas
 (Dudley and Parish, 2006).

3.1.3. Analysing and mapping the current state of protected areas

The current status of all areas under protection at the national level needs to be established. This will require spatial comparison of existing biological diversity maps against map(s) showing the distribution of protected areas. Data about protected areas are generally available at the national level; however, protection activities are carried out by a variety of institutions and authorities, which can result in difficulties in acquiring spatial data and information about protected areas; furthermore, data may be insufficient. However, accessing spatial data for all protected areas is important as it will facilitate all subsequent work. Ideally, three following sets of data should be obtained:

- the distribution of protected areas
- protection categories
- management efficacy (Dudley and Parish, 2006).

3.1.4 Defining gaps

At this stage it is important to calculate the existing degree of “representativeness” in order to establish whether (and how much) the existing protection system or network meets national biological diversity goals for protection (Zeydanlı et al., 2017). This calculation will help clarify the extent to which current biological diversity goals are represented or not represented within the existing protection system and in what proportion. The process requires merging the entire data spread obtained through biological diversity analyses with existing protected area data.

By comparing biological diversity components that are adequately represented with those not represented within the existing protection system, it is possible to identify protection gaps (Zeydanlı et al., 2017). However, it is important to establish the kind of a gap (i.e. whether a component is entirely absent or partially represented) and the scope (i.e. whether entirely new protected areas are required, or expanding the corridor between existing protected areas or the boundaries of an existing protected area would suffice to close the representation or ecological gap) (Dudley and Parish, 2006).

In order to identify gaps in protected area networks:

- when no maps are available, list all the biological diversity components not sufficiently represented in the protected area network;
- when maps are available, analyse information such as the presence or absence of biological diversity components in the protected area network, their proximity and the population distribution of protected species;
- where maps include software, analyses can be made using systematic, algorithm-based approaches in order to identify new protected areas (Dudley and Parish, 2006).

3.1.5 Prioritizing gaps

When prioritizing gaps, any assessment of identified gaps must take into account a set of criteria or components, and create an order of priority based on this assessment. The most important among these are as follows (Dudley *et al.*, 2005; Zeydanlı *et al.*, 2017):

- the uniqueness of the area and its assets (importance from a biological diversity standpoint);
- pressures and threats against the area and its reference values (the emergency and severity of the threat(s));
- prior decisions made about the area;
- existing manner of use which will not allow for protection (location of the area in a large city centre, social factors, etc.);
- existing opportunities for creating new protected areas (economic, social, institutional, etc.),
- existing capacity to implement and manage the expanded protected area network (legal and political framework, financial, human and other necessary resources, cooperation opportunities and skills);
- restrictions and criteria such as the preferences of specialists and stakeholders.

The prioritization process will also enable areas to be ranked in terms of urgency of protection.

The use of computer software is essential to ensure that the prioritization and selection process is based on quantitative criteria and can be replicated. New software can be prepared in line with identified special criteria, but available software programs such as C-Plan, ResNet, Marxan and Sites may also be used. Analyses produced using these programs must be viewed as a good point for discussion with implementers, experts and other stakeholders in the area, and if necessary, must be performed repeatedly to take into consideration their suggestions (Zeydanlı *et al.*, 2017).

3.1.6 Identifying strategies

At this stage, gap analysis has been completed. However, the final study to be conducted, the integration of listed area(s) into the existing protected area network and the extension of the existing network should be considered to cover one or more of the issues listed below.

A certain number or ratio of the **representative elements of biodiversity** must be present in the protection area. Examples of targets that can be set include ensuring that a particular species is present in at least three areas, that the protection area covers at least 10 percent of the spread of rare species, and that each habitat is represented at least once. Under ideal conditions, there should be at least two examples of each representative habitat, to help ensure continuity in the event of unexpected regional developments (Zeydanlı *et al.*, 2017).

Other issues that should to be considered when determining strategies include the following (Dudley and Parish, 2006).

The size and location of the area(s): decisions about possible habitats (corridors and buffer zones) must take into consideration basic priorities, opportunities and capacity. Management goals for the protected areas: these will range from strict protection to the cultural landscaping of areas associated with community usage. When identifying management goals for candidate areas, it is important to respect the IUCN protected area category system as well as existing national legal regulations.

Management structures for protected areas: there are several structural options available for protection. These include state protection, joint management, special protected areas and areas with community protection. All of these options must also be considered. A further consideration is whether those living in or around the protected area(s), including stakeholders with assigned protection duties, are supportive of the protection process.

Protection opportunities outside the protected areas: if management is effective and secure, possibilities for the protection of biological diversity outside the protected areas must also be assessed.

Opportunities to use restoration as a tool: this may mean encouraging natural regeneration or active intervention. Landscape restoration opportunities should also be considered.

3.2 Allocating relevant categories for newly selected areas

This stage includes the incorporation of new areas in the protection system, the identification of the most suitable protection category through the use of a participatory approach, and the finalization of the protection category with the involvement of decision-makers, undertaken in line with agreed priorities. Figure 12 shows the steps involved in this stage.

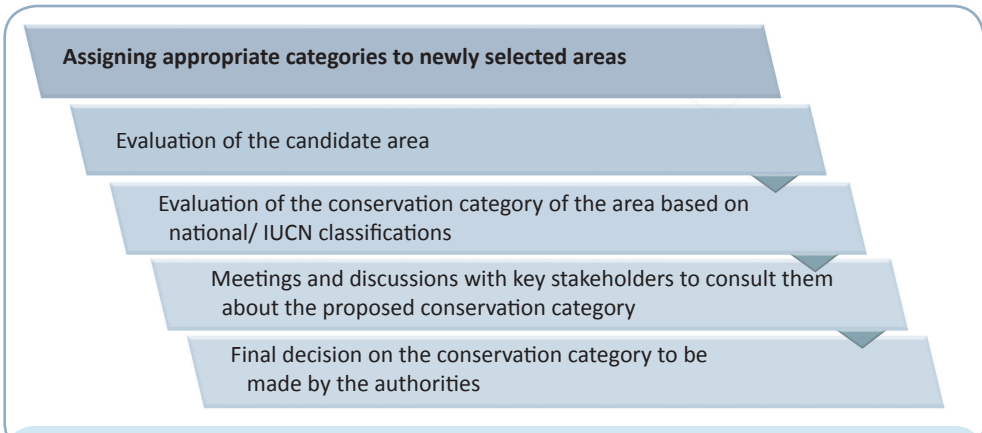


Figure 12. Allocation of categories for newly selected areas

At this stage, following the gap analysis, the categorization process and the identification of selected areas as protected areas, the attention shifts from the regional or national scale to the local level. However, in the event that unforeseen circumstances obstruct the achievement of protection goals, it will be necessary to repeat the last few steps of the gap analysis.

Protection management does not necessarily imply a need for legal protection status. In situations where this solution is unnecessary and protection can be ensured by other means, different options may be generated in accordance with the pressures on biological diversity in the area. Examples include regulated grazing, biodiversity-based forestry practices, the preservation and management of biodiversity through integration into production landscapes, the creation of hunting regulations, the development of species action plans and so on.

However, when following a systematic approach, the key step is to determine the appropriate protection category, taking into consideration the protection priorities and representative elements identified during the initial first stage. This process must also take into account protected area categories as defined in national legislation and international conventions as well as the general principles of IUCN protection categories, when preparing the application file and initiating the declaration process. In the event that a systematic approach is not applied, detailed area-based work will

need to be carried out. It has been observed that in current work for the identification of protected areas, the results of previously conducted regional gap analyses and the listing of priority protection areas have not been adequately taken into account, resulting in the evaluation of individually proposed area applications.

The process of evaluating an individually proposed area, and determining the protected area category without performing a gap analysis, can be carried out by following the steps below.

3.2.1 Assessing the candidate area

Assessing a protected area involves ensuring that the boundaries are well defined, including the buffer zones, and placing such area under a protection category that accords the necessary importance to its natural, historical, cultural and socio-economic resources (UNEP Caribbean Environment Programme, 1996).

The process of creating a new protected area and identifying the protection category must give due consideration to internationally signed conventions, and developments and changes at the global level, in addition to national legislation and priorities. There are many reasons for the establishment of a protected area. The site in question might be an outstanding landscape or contain representative habitats, ecosystems and species. In past decades, protected areas were often established as a response to threats to vulnerable landscapes or in response to loss of biodiversity.

When designating a new protected area, the protection goals should be clear, and the area must contain either species and/or habitats of natural (or cultural) conservation interest, as well as of social and cultural sustainability (UNEP Caribbean Environment Programme, 1996). The main criteria for identifying and selecting protected areas are:

- ecological diversity and integrity (the area should contain specific rare or endangered habitats or species, or a variety of different habitats which permit the occurrence of rare or endangered species or feeding, breeding or rest areas for endangered species);
- the presence of rare species or habitats;
- the degree of naturalness of the area;
- a need to secure the habitats of threatened species facing harm;
- the willingness of society to protect and maintain traditional uses and spiritual bonds with the past, and to ensure the integrity of the relationship with traditional beliefs and ways of life.

The evaluation process should consider the following guidelines:

- Assess the most critical needs.
- Build partnerships.
- Assess the relationship between governance and management entities and cultivate positive working relationships early on.

- Utilize existing legislation first, but also ensure that other options are clearly understood by those working to develop new legislation or regulations.
- Characterize the biophysical and social science aspects of the site in parallel.
- Develop systematic conservation strategies and adaptive management practices.
- Engage with empathy, and listen carefully, to those whose livelihoods, cultural practices and heritage are associated with the site.
- Be thoughtful in developing communications and outreach materials of the site, as the messages initially offered of the public will likely be permanent.

The protected areas should be established in order to conserve, maintain and restore, in particular:

- representative coastal and marine habitats, mountains and forests, wetlands and steppe ecosystems, and habitats and associated ecosystems of adequate size to ensure their long-term viability and to maintain biological and genetic diversity;
- habitats and their associated ecosystems critical to the survival and recovery of endangered, threatened or endemic species of flora and fauna;
- the productivity of ecosystems and natural resources that provide economic or social benefits and upon which the welfare of local inhabitants is dependent;
- areas of special biological, ecological, educational, scientific, historic, cultural, recreational, archaeological, aesthetic or economic value, including, in particular, areas the ecological and biological processes of which are essential to the functioning of Turkish ecosystems.

The most important factors to be used in evaluating/ identifying protected areas are:

- Msignificance
- representativeness
- feasibility
- priority (UNEP Caribbean Environment Programme, 1996).

Significance is a measure of the value of an area in terms of illustrating the natural or cultural heritage of a country or a region. Factors to be considered, among others, in determining the significance of a natural area include: degree of uniqueness, naturalness, diversity, ecological integrity, opportunities for sustainable development and scientific value. Culturally and historically significant areas may include districts, sites, natural features, structures or objects that are indicative of a country's heritage and its values, and that possess a high degree of integrity of location, design, setting, materials, workmanship, feeling and association (UNEP Caribbean Environment Programme, 1996).

In natural areas, **representativeness** is a measure of the extent to which a site or area is representative of a particular natural or biogeographical element, in terms of its location in key or natural zones of major importance within a biogeographical unit. Areas or sites with a high or medium degree of naturally occurring features, located in transition zones between two or more biogeographical units, are considered a priority, since there is the possibility of obtaining a high level of natural representativeness by establishing a single conservation unit (UNEP Caribbean Environment Programme, 1996).

For an area to be identified, selected and ranked as important for inclusion in a national system of protected areas, it should represent a natural or cultural theme or resource type that is not adequately represented in the system or is not comparably represented and protected. Adequacy of representation is determined on a case-by-case basis by comparing the area to other existing or potential areas for differences or similarities in the character, quality, quantity or combination of resources.

In order to ensure optimum conservation, a national system of protected areas should, where possible, include one or more important samples of each type of a country's ecosystem. More effective conservation and representation of the important ecosystems of each country is probable if two or more areas with these ecosystems are protected. A list of these ecosystems and their definitions should be developed as appropriate (UNEP Caribbean Environment Programme, 1996).

Feasibility refers to the degree to which an area can be adequately protected and managed in order to achieve its conservation objectives. The feasibility of managing an area depends on a number of ecological, political, economic, social and administrative factors, including size of the area, isolation, configuration, accessibility, land ownership and ancestral rights, population density, acquisition costs, economic interests in the area, environmental impacts, and staff or development requirements (UNEP Caribbean Environment Programme, 1996).

The identification of protected areas is a multi-disciplinary, multi-sectorial and inter-institutional process. Therefore, as far as possible, steps should be undertaken to promote measures aimed at establishing groups of experts, groups of technical consultants or other types of organizations which, under the auspices of the relevant national authorities, will unite their efforts and focus to ensure greater integration of all actions necessary for the review and improvement of national systems of protected areas.

The process of identifying protected areas consists of a series of steps and interrelated actions which together ensure a suitable structure for a system of protected areas.

Areas of highest **priority** may feature:

- the presence of the endangered and locally endemic species;
- the presence of unique or rare national, regional or international landscapes or ecosystems;
- special sites of high importance to sustain the nesting, feeding, wintering and breeding of migratory species;
- areas of high biodiversity within each biogeographical province, of particular importance to maintaining genetic evolution and resources;
- areas with biological or geographical characteristics that confer and sustain high economic and social value, especially those of importance to ensuring the long-term survival and well-being of the population;
- the presence of populations of species considered rare at the local level (UNEP Caribbean Environment Programme, 1996).

As part of the assignment of priority levels during the determination of a candidate area, the use of matrices can be especially helpful to compare quantitatively the number of natural and cultural parameters which reflect the importance of each proposed or existing protected area in terms of meeting national conservation and development objectives. Unfortunately, no matrix to determine candidate areas for Turkey is available as of yet. Up until now, aspects such as ecological, biological diversity, social values and so on have been used to create a simple check list for the evaluation of candidate areas (Annex 2). However, the evaluation criteria defined in these Guidelines can be used for the creation of a matrix, which will then constitute an objective basis for decisions regarding whether an area should be protected or not, and if it should be designated a protection area, what the boundaries should be. Another example of a checklist for such decision-making in the international context is given in **Annex 3**.



Table 7. Evaluation checklist for a candidate site

Ecological criteria	Low						High						Remarks
Ecological factors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Size	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Naturalness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Representativeness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Species and habitats	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Other													
Socio-economic factors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Traditional knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Agricultural products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Economic/ touristic development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Other													
Importance in the national system													
Gap (analysis)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
International interventions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Green infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

3.2.2

Assessing the protection status of an area according to national or IUCN categories

Once an area has been identified as a protected area according to the national protected areas conservation systems, together with IUCN definitions, the next stage in classification is to determine which category matches most closely the overall management objectives of the protected area. Identification of the best conservation category is directly related to the conservation priorities and conservation goals of the candidate sites, which are reflected in the management objectives.

The second step in identification of the best category considers the rules for application of the IUCN categories system. In addition to both of these steps, there is a need to apply basic principles related to the establishment of protected areas and their assignment to categories.

The agency responsible for the protected area in question decides on the main aim of management. This is not necessarily an easy choice to make. However, failure to do so will suggest that management is likely to be ineffective. In principle, a good assessment process to identify the appropriate category will involve key stakeholders and other agencies dealing with the conservation and management of the protected area, and should be based on best available natural and social science. Identifying a primary objective does not imply that other aims are not important: almost all protected areas have multiple values.

IUCN recognizes this fact and recommends that up to 25 percent of land or water within a protected area be managed for other purposes, so long as these are compatible with the primary objective of the protected area.

While overall scale often depends on biological and other factors, such as the amount of available land or water, population density and so on, in terms of relative scale, some categories are more likely to be either large or small, because of their particular management objectives, although exceptions can arise for virtually every category. To aid selection, Table 8 presents relative scales for the categories and accompanying explanations, but also provides some exceptions indicating that size alone should not be a determining factor.

Table 8. Relation among size and categories

Category	Relative size	Explanation	Exceptions
Ia: Strict nature reserve	Often small	Agreement regarding strictly protected, no-go areas is always difficult except in sparsely inhabited areas. Therefore, although large Ia areas exist (e.g. in Australia) they are probably the exception.	Large areas in places with low human population density and little interest in tourism
Ib: Wilderness area	Usually large	Part of the rationale of wilderness areas is that they provide enough space to experience solitude and large-scale natural ecosystem	Relatively small areas set up as wilderness in the hope that they can be expanded in the future
II: National park	Usually large	Conservation of ecosystem processes suggests that the area needs to be large enough to contain all or most of these processes.	Small islands may effectively be ecosystems and thus function as category II
III: Natural monument or feature	Usually large	Larger sites containing natural monuments generally also protect other values (e.g. ecosystems and/ or wilderness values).	
IV: Habitat/ species management area	Often small	If the site is set up to protect only individual species or habitats, the likelihood is that it will be relatively small.	Larger areas set aside as nature reserves but needing regular management to keep functioning might best designated as category IV
V: Protected landscape/ seascape	Usually large	The mosaic of different approaches adding up to conservation gains suggests a larger area.	Some mini-reserves for crop wild relatives or landraces may require cultural management
VI: Protected area with sustainable use of natural resources	Usually large	The extensive nature of management suggests that such areas will usually be large.	Some category VI marine protected areas are small.

Source: Dudley, Shadie and Stolton, 2013.

In Figure 13, the horizontal axis shows the natural conditions that represent the initial situation of a site. Figure 13 presents the correlation between categories and conditions. The horizontal axis (x) represents the initial condition of the area, while the vertical axis (y) reflects the protection and use situation.

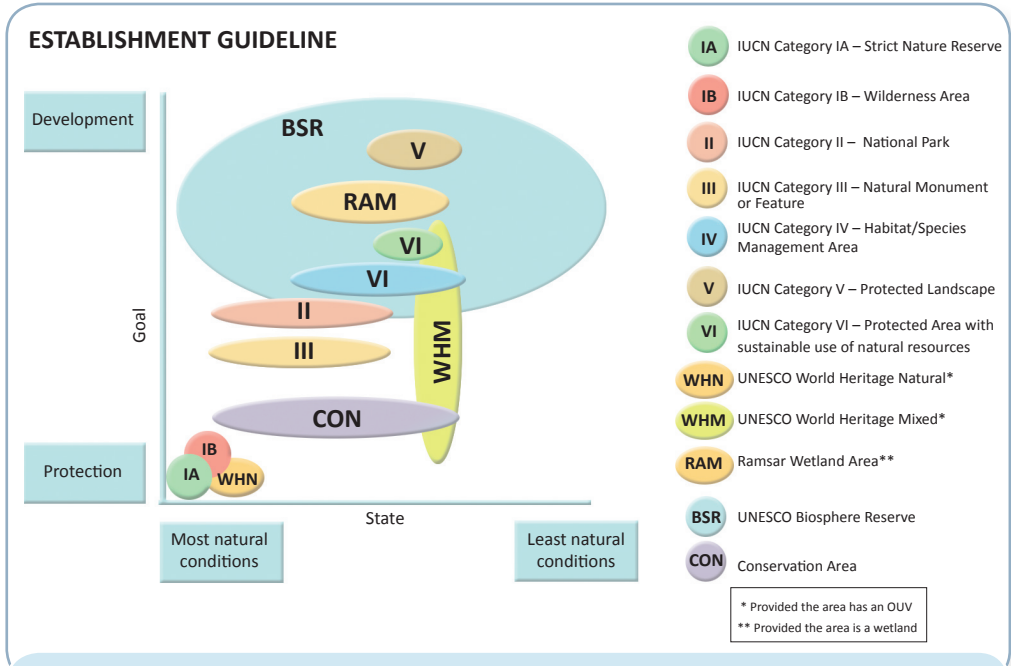
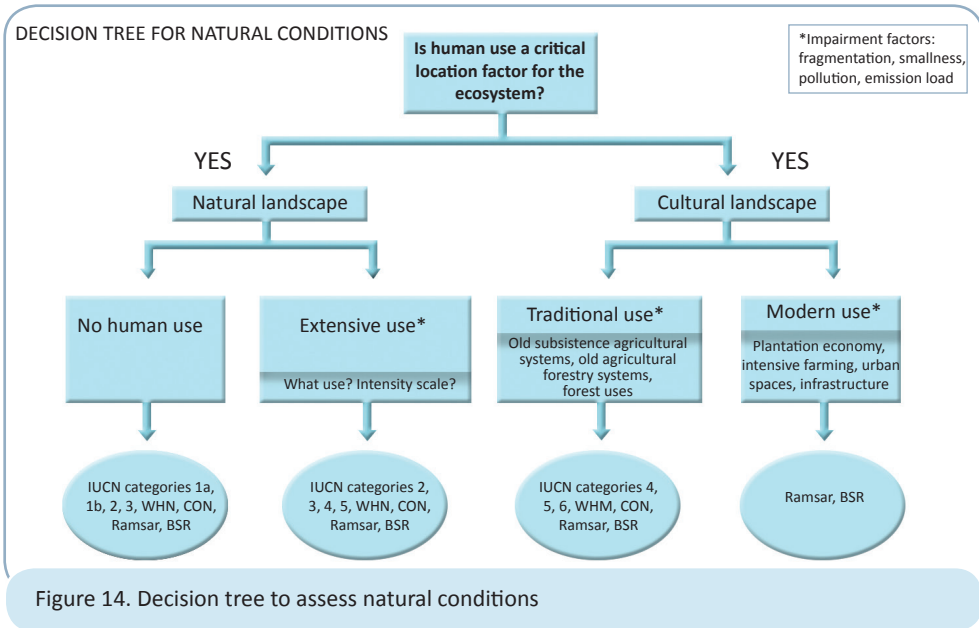


Figure 13. Different categories of protected areas and their connection to the naturalness and intensity of protection

The evaluation of conditions leads to a spectrum of protected area categories that can be considered. From this point on, the decision is a social one. What functions should the site have and what is the management objective? Protection or development? Once these questions are answered, the protected area category can be selected according to the graph’s vertical axis. The vertical axis is accompanied by a protected area list descending from the strictest protection category. The spatial data obtained, and the management objectives are critical for determining the category. At the national level, it is important to classify sites well and ensure correct categorization. Each category of protected area and each natural condition should be well represented in the country.

The decision tree in Figure 14 is a decision-making tool that can be used to accurately assess natural conditions.



3.2.3

Holding meetings and discussions with key stakeholders to examine the proposed protection category

The process for creating a protected area is typically repetitive and consists of combining spatial datasets, determining the boundaries of the area based on ecological data, modifying ecological boundaries to arrive at practical boundaries, and documenting factors relating to significance, representativeness, feasibility and priority. This process must involve the participation of stakeholders with the expertise to identify and establish regulations for natural areas of significance. Such experts must be free from political/ economic biases or conflicts of interest.

The process should involve the effective participation of scientists with knowledge and experience of aspects of biological diversity in the area, experts with local and traditional knowledge, protection officers working or living in the area, and public authority representatives responsible for the control and management of natural areas or wildlife. Exchange of ideas with these support groups (e.g. through workshops or unofficial meetings) will contribute to the conservation of the protection category to be identified, and will increase ownership of the new area among the relevant parties.

Certain principles need to be borne in mind when working with groups of interest to establish a protected area and determine its status. Effective complaint and solution mechanisms should be put in place to address any dissatisfaction with decisions made, especially in relation to shared decision-making and management responsibility.



Participation mechanisms should also be operational to ensure the effective involvement of groups of interest in the process. Further information can be found in “Guidelines for Engaging Stakeholders in Managing Protected Areas¹⁵”, which consists of detailed information prepared on the participation of interest groups.

If the conservation category that has been defined through evaluations and joint decisions is listed in accordance with national legislation, the subsequent processes must consider national legislation and related approach.

However, following the assessments, in the event that the proposed category corresponds to an international protection category (e.g. a Ramsar Site, UNESCO World Heritage Site, UNESCO Biosphere Reserve Area, etc.), the requirements of the relevant international conventions must be fulfilled and the necessary candidate application files prepared and submitted to the relevant authorities.

3.2.4 The authorities make the final decision for the protection category

The final step is to submit the results of the entire process to the decision-making authorities. This final step in the identification of the protection category follows decisions made with the stakeholders using the obtained scientific and spatial data, following approval by the relevant senior authorities. At this stage, scientific and spatial work may be affected, at least in part, by national and institutional strategies and policies.

Following this process, regardless of whether a national or an international protection category is defined, the objective is to strengthen the existing national protected area system, and to ensure the sustainability of the resources.

¹⁵ The Guidelines for Engaging Stakeholders in Managing Protected Areas outline the standards and recommended practices for engaging stakeholders in the participatory planning and management of protected areas. This publication is produced as part of the Conservation and Sustainable Management of Turkey’s Steppe Ecosystems Project.

CHAPTER 4

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CHAPTER 5

FURTHER INFORMATION



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Suggested sources on Gap Analysis:

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Systematic Conservation Planning:

C R Margules and R L Pressey, *Nature* 405: 243-253 Six stage planning process drawing on targets, including both quantitative and qualitative targets
<https://www.cbd.int/protected-old/gap.shtml>

Suggestion resources that can be used to evaluate and map the current status of biological diversity

- Resources - IUCN Red List Actual title: IUCN Red List Summary: Global list of threatened or endangered species Keywords: IUCN <http://www.iucnredlist.org/>
- IUCN Species Survival Commission: Site contains general information on species, contacts for SSC specialist groups, and links to other SSC Web sites. Individual specialist groups, which often have their own web sites and materials, may be able to help with information on distribution of particular species. [<http://www.iucn.org/themes/ssc/>]
- Animal Information Gateway: gateway to a variety of animal species information, threat status, distribution, and links to more specific species websites.
- Expert Center for Taxonomic Identification: Site contains World Biodiversity Database with information on taxonomy and general information. Also contains World Taxonomist database, separated by specialization. Partly funded by UNESCO. [<http://www.eti.uva.nl/>]
- Smithsonian's Mammal Species of the World: useful for taxonomy and literature citations. [<http://nrmnhgoph.si.edu/msw/>]
- Amphibian Species of the World: the American Museum of Natural History site contains taxonomic and general distribution information. [<http://research.amnh.org/herpetology/amphibia/index.php>]
- Global Register of Migratory Species: information on migratory species: Global-scale distribution maps for 1,100 species are now available in GIS-format.
- BirdLife International datazone: (<http://www.birdlife.org/datazone/index.html>)
- The Ramsar Convention: Database on wetlands of international importance (www.ramsar.org)
- Wetlands International: A non-profit organization dedicated to wetlands conservation and sustainable development. (www.wetlands.org)
- Resources - AZE brochure Actual title: Alliance for Zero Extinction Author: Anon Summary: Summary of the work of and resources available from the Alliance for Zero Extinction, which includes information on priority areas to be protected to stop extinctions Keywords: Alliance for Zero Extinction, gap analysis <http://www.protectedareas.info/upload/document/azebrochure.pdf>
- Resources - IUCN Red List Actual title: IUCN Red List Summary: Global list of threatened or endangered species Keywords: IUCN <http://www.iucnredlist.org/>

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Suggestion resources that can be used to analyze and map the current situation of protected areas

- Approaches - indicators for integrity Actual title: Assessing condition/ integrity of ecosystems: using spatial data to develop suitability indices Author: Jonathan Higgins Summary: Using spatial data as a rapid approach to quantify the relative quality and potential for persistence of specific biodiversity targets, as well as landscapes in general Keywords: integrity, assessment <http://www.protectedareas.info/upload/document/approaches-indicatorsforintegrity.pdf>
- Guidelines - National System Planning for Protected Areas Actual title: National System Planning for Protected Areas Author: Adrian Davey Summary: IUCN guidelines on planning a national system of protected areas Keywords: planning, protected areas <http://app.iucn.org/dbtw-wpd/edocs/PAG-001.pdf>

<https://www.cbd.int/protected-old/gap.shtml>

Suggestion resources that can be used for Gap Analysis

- Gap analysis – introduction Actual title: What does gap analysis mean? A simple framework for assessment Author: Jeffrey Parrish and Nigel Dudley Summary: Outline of the background to and principles behind, protected area gap analysis Keywords: gap analysis, protected areas <http://www.protectedareas.info/upload/document/gapanalysis-introduction.pdf>
Suggestion resources that can be used to prioritize the gaps
- Guidelines - Category V protected areas Actual title: Management Guidelines for IUCN Category V Protected Areas Protected Landscapes/ Seascapes Author: Adrian Phillips Summary: Guidelines to planning and management of landscape/seascape protected areas where landscape characteristics and cultural landscapes are an important part of the overall

value Keywords: protected area, IUCN Category V, landscape <http://app.iucn.org/dbtw-wpd/edocs/PAG-009.pdf>

- Guidelines - IUCN protected area categories Actual title: Guidelines for Protected Area Management Categories Author: IUCN Summary: Guidelines for application and use of the six IUCN protected area categories, identified by management objective. Available in English, French and Spanish Keywords: protected areas, categories, IUCN <http://www.iucn.org/themes/wcpa/pubs/guidelines.htm#categories>
- Guidelines - Mountain protected area guidelines Actual title: Guidelines for Planning and Managing Mountain Protected Areas Author: Larry Hamilton and Linda McMillan Summary: Guidelines to planning and management of protected areas in mountain environments Keywords: mountains, protected areas <http://app.iucn.org/dbtw-wpd/edocs/2004-017.pdf>

<https://www.cbd.int/protected-old/gap.shtml>

Suggestion resources that can be used for strategy setting

- Guidelines - Category V protected areas Actual title: Management Guidelines for IUCN Category V Protected Areas Protected Landscapes/Seascapes Author: Adrian Phillips Summary: Guidelines to planning and management of landscape/seascape protected areas where landscape characteristics and cultural landscapes are an important part of the overall value Keywords: protected area, IUCN Category V, landscape <http://app.iucn.org/dbtw-wpd/edocs/PAG-009.pdf>
- Guidelines - IUCN protected area categories Actual title: Guidelines for Protected Area Management Categories Author: IUCN Summary: Guidelines for application and use of the six IUCN protected area categories, identified by management objective. Available in English, French and Spanish Keywords: protected areas, categories, IUCN <http://www.iucn.org/themes/wcpa/pubs/guidelines.htm#categories>
- Guidelines - Mountain protected area guidelines Actual title: Guidelines for Planning and Managing Mountain Protected Areas Author: Larry Hamilton and Linda McMillan Summary: Guidelines to planning and management of protected areas in mountain environments Keywords: mountains, protected areas <http://app.iucn.org/dbtw-wpd/edocs/2004-017.pdf>
- Guidelines - National System Planning for Protected Areas Actual title: National System Planning for Protected Areas Author: Adrian Davey Summary: IUCN guidelines on planning a national system of protected areas Keywords: planning, protected areas <http://app.iucn.org/dbtw-wpd/edocs/PAG-001.pdf>,

- Guidelines - Transboundary protected areas Actual title: Transboundary Protected Areas for Peace and Co-operation Author: Trevor Sandwith, Dlare Shine, Larry Hamilton and David Sheppard Summary: Explanation of transboundary protected areas along with guidelines and a draft code of practice, plus information on transboundary protected areas around the world Keywords: transboundary protected area <http://app.iucn.org/dbtw-wpd/edocs/PAG-007.pdf>
- Participatory tools - Scenario building from CIFOR <http://www.protectedareas.info/upload/document/scenariosforadaptivemgt-cifor.pdf>

<https://www.cbd.int/protected-old/gap.shtml>

CHAPTER 6

ANNEXES



ANNEXES

ANNEX 1. AICHI BIODIVERSITY TARGETS



they can take to conserve and use it sustainably.

Target 2

By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

Target 3

By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.

Target 4

By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use

Target 5

By 2020, the rate of loss of all-natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

Target 6

By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems

and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Target 7

By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

Target 8

By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

Target 9

By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

Target 10

By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

Target 11

By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

Target 12

By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

Target 13

By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity

Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services

Target 14

By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded,

taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

Target 15

By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

Target 16

By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.

Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building**Target 17**

By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

Target 18

By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

Target 19

By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

Target 20

By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.

Annex 2. Evaluation checklist for a candidate site in Turkey (2018)

ECOLOGICAL CRITERIA					
Size of the area	Xxxha and/or km2				
Representativeness	Hihg/moderate/medium/weak/insufficient				
Naturalness	High degree	Moderate degree	Medium degree	weak	insufficient
Biogeographic importance	Rare biogeographic qualities	Unique or unusual geological features	Rare in the regional scale	Rare in local scale	Common
Ecological importance	(vii) Contributes to maintenance of essential ecological processes or life-support systems (ix) Rare or unique habitat for any species	(x) Integrity (xi) Preserves genetic diversity (i.e. is diverse or abundant in species terms)	Variety of habitats	Rare or endangered species	Feeding, breeding or rest areas.
Biological Diversity (IUCN global standards for the identification of key biodiversity areas, 2016)*					
Threatened species	≥0.5% of the global population size and ≥5% reproductive units of a CR or EN species	≥1% of the global population size and ≥10 %reproductive units of a VU species	≥0.1% of the global population size and ≥5% reproductive units of a species assessed as CR or EN due only to population reduction in the past or present	≥0.2% of the global population size and ≥10% reproductive units of a species assessed as VU due only to population size reduction in the past or present	Effectively the entire global population size of a CR or EN species
Threatened ecosystem types	≥5% of the global extent of a globally CR or EN ecosystem type				
Biological diversity (IUCN global standards for the identification of key biodiversity areas, 2016)*					

<p>Individual geographically restricted species</p>	<p>Site regularly holds $\geq 10\%$ of the global population size and ≥ 10 reproductive units of a species.</p> <ul style="list-style-type: none"> (i) number of mature individuals (ii) area of occupancy (iii) extent of suitable habitat (iv) range (v) number of localities (vi) distinct genetic diversity 			
<p>Co-occurring geographically restricted species</p>	<p>Site regularly holds $\geq 1\%$ of the global population size of each of a number of restricted-range species in a taxonomic group, determined as either $\geq 2\%$ species or 0.02% of the global number of species in the taxonomic group, whichever is larger.</p> <ul style="list-style-type: none"> (i) number of mature individuals (ii) area of occupancy (iii) extent of suitable habitat (iv) range (v) number of localities (vi) distinct genetic diversity 			
<p>Geographically restricted assemblages (site regularly holds one or more of the following)</p>	<table border="1"> <tr> <td data-bbox="583 979 800 1173"> <p>Site regularly holds $\geq 0.5\%$ of the global population size of each of a number of ecoregion-restricted species within a taxonomic group, determined as either ≥ 5 species or 10% of the species restricted to the ecoregion, whichever is larger</p> </td> <td data-bbox="583 587 800 979"> <p>$\geq 5\%$ reproductive units of $\geq 5\%$ bioregion-restricted species or 30% of the bioregion-restricted species known from the country, whichever is larger, within a taxonomic group</p> </td> <td data-bbox="583 173 800 587"> <p>Part of the globally most important 5% of occupied habitat for each of $\geq 5\%$ species within a taxonomic group</p> </td> </tr> </table>	<p>Site regularly holds $\geq 0.5\%$ of the global population size of each of a number of ecoregion-restricted species within a taxonomic group, determined as either ≥ 5 species or 10% of the species restricted to the ecoregion, whichever is larger</p>	<p>$\geq 5\%$ reproductive units of $\geq 5\%$ bioregion-restricted species or 30% of the bioregion-restricted species known from the country, whichever is larger, within a taxonomic group</p>	<p>Part of the globally most important 5% of occupied habitat for each of $\geq 5\%$ species within a taxonomic group</p>
<p>Site regularly holds $\geq 0.5\%$ of the global population size of each of a number of ecoregion-restricted species within a taxonomic group, determined as either ≥ 5 species or 10% of the species restricted to the ecoregion, whichever is larger</p>	<p>$\geq 5\%$ reproductive units of $\geq 5\%$ bioregion-restricted species or 30% of the bioregion-restricted species known from the country, whichever is larger, within a taxonomic group</p>	<p>Part of the globally most important 5% of occupied habitat for each of $\geq 5\%$ species within a taxonomic group</p>		
<p>Geographically restricted ecosystem types</p>	<p>Site holds $\geq 20\%$ of the global extent of an ecosystem type</p> <ul style="list-style-type: none"> (i) number of mature individuals (ii) area of occupancy (iii) extent of suitable habitat (iv) range (v) number of localities 			
<p>ECOLOGICAL INTEGRITY (site includes wholly intact ecological communities with supporting large-scale ecological processes, and thus contributes significantly to the global persistence of biodiversity at the ecosystem level).</p>				

Ecoregion characteristics	Site is one of ≤2% per ecoregion characterized by wholly intact ecological communities, comprising the composition and abundance of native species and their interactions.	
Biological Processes		
Demographic aggregations	Site predictably holds one or more of the following:	
	An aggregation representing ≥1% of the global population size of a species, over a season, and during one or more key stages of its life cycle	A number of mature individuals that ranks the site among the largest 10 aggregations known for the species
Ecological refugia	Site supports ≥10% of the global population size of one or more species during periods of environmental stress, for which historical evidence shows that it has served as a refugium in the past and for which there is evidence to suggest it would continue to do so in the foreseeable future	
Recruitment sources	Site predictably produces propagules, larvae or juveniles that maintain ≥10% of the global population size of a species.	
<p>Note: CR = Critically endangered, EN = Endangered, VU = Vulnerable. Source: IUCN. 2016. A Global Standard for the Identification of Key Biodiversity Areas, Version 1.0. First edition. Gland, Switzerland: IUCN.</p>		
Social And Administrative Factors		
Land ownership	State	Private
Ancestral rights	Pasture	Rural legal entity
Population density	Population	-
Environmental impacts	Pollution	Dams
Economic importance	National	Regional
Economic interests	For those living in the area	Public investments
Existing or potential contribution to economic value by virtue of its protection	High	Medium
		Residents of the region
Social interest	Those living in the areas	Education
Scientific importance	Research	-
* IUCN 2016. A global standards for the identification of key biodiversity areas. Version 1.0		

Annex 3. General criteria used to decide whether an area should be protected

Naturalness	<ul style="list-style-type: none"> • The extent to which the area has been protected from, or has not been subject to human-induced change.
Biogeographic importance	<ul style="list-style-type: none"> • Either contains rare biogeographic qualities or is representative of a biogeographic “type” or types. Contains unique or unusual geological features.
Ecological importance	<ul style="list-style-type: none"> • Contributes to the maintenance of essential ecological processes or life-support systems (e.g. source for larvae for the integrity of downstream areas). • The degree to which the area either by itself or in association with other protected areas constitutes a complete ecosystem. • Contains a variety of habitats. • Contains habitat for rare or endangered species. • Contains nursery or juvenile areas. • Contains feeding, breeding or rest areas. • Contains rare or unique habitat for any species. • Preserves genetic diversity (i.e. is diverse or abundant in species terms).
Economic importance	<ul style="list-style-type: none"> • Existing or potential contribution to economic value by virtue of its protection (e.g. protection of an area for recreation, subsistence, use by traditional inhabitants, appreciation by tourists and others or as a refuge nursery area or source of supply for economically important species).
Social importance	<ul style="list-style-type: none"> • Existing or potential value to local, national or international communities because of its heritage, historical, cultural, traditional aesthetic, educational or recreational qualities.
Scientific importance	<ul style="list-style-type: none"> • Value for research and monitoring.
International or national significance	<ul style="list-style-type: none"> • Has the potential to be listed on the World Heritage List or a significant national heritage list, be declared as a biosphere reserve, be included on a list of areas of international or national importance, or be the subject of an international or national conservation agreement.
Practicality/ feasibility	<ul style="list-style-type: none"> • Degree of isolation from external destructive influences. • Social and political acceptability, degree of community support. • Accessibility for education, tourism and recreation. • Compatibility with existing uses, particularly by locals. • Ease of management and compatibility with existing management regimes.

Source: Kelleher, G. & Kenchington, R. 1992. Guidelines for Establishing Marine Protected Areas. A Marine Conservation and Development Report. IUCN, Gland, Switzerland. vii+ page 79.

Annex 4. Sustainable development goals (sdgs)

Goal 1: No Poverty

Goal 2: Zero Hunger

Goal 3: Good Health and Well-Being

Goal 4: Quality Education

Goal 5: Gender Equality

Goal 6: Clean Water and Sanitation

Goal 7: Affordable and Clean Energy

Goal 8: Decent Work and Economic Growth

Goal 9: Industry, Innovation and Infrastructure

Goal 10: Reduced Inequalities

Goal 11: Sustainable Cities and Communities

Goal 12: Responsible Production and Consumption

Goal 13: Climate Action

Goal 14: Life Below Water

Goal 15: Life on Land

Goal 16: Peace, Justice and Strong Institutions

Goal 17: Partnership for the Goals

“Conservation and Sustainable Management of Turkey’s Steppe Ecosystems Project”

GCP/TUR/061/GFF



Sets of guidelines developed to provide standards and recommendations for the sustainable management and conservation of the country’s natural assets within the framework of the project:

