

## ARTICLES

**PROTECTED AREAS OF THE WORLD –  
REGIONAL DIFFERENCES***AUTHORS*

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*ABSTRACT****Protected areas of the World – regional differences***

*The subject of the paper is protected natural areas of the world and their regional differences. According to the IUCN, a protected natural 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”. States differ in their interpretations of the above definition. Very often, some of the sites that are protected areas in one country may not necessarily be considered protected in another country. In defining and management of protected areas, some countries have adapted their laws to international guidelines, while in other countries the legislation differs significantly from these guidelines. Therefore, the research aims to show regional differences in the identification and management process as well as in the total surface area and abundance of protected natural areas at the world level.*

*KEY WORDS*

*protection, protected natural areas, World, regional differences, IUCN*

## 1. Introduction

At the regional level, there is a wide range of different approaches to the identification and management of protected natural areas, from highly protected areas without permanent population, with an emphasis on the conservation of the natural environment, to areas with much less restrictive approach integrating conservation in the traditional way of life or even with limited sustainable utilization of resources. Some protected areas prohibit activities such as collecting food, hunting, or exploitation of natural resources, while for others, it is an accepted and even necessary part of management. According to the IUCN, a protected natural 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.

Over time, categories of protected areas have changed and adapted to the prevailing system. In the early 1990s, the IUCN defined a new international classification system, identifying six basic categories of nature protection (Ia Strict nature reserve, Ib Wilderness area, II National park, III Natural monument, IV Habitats / Species management area, V Protected landscape/seascape, VI Protected Area with sustainable use of natural resources) which constitute the global framework for the identification and management of protected areas and which is the most applicable in the world. The methodological framework of the research was based on the analysis of available literature, cartographic and statistical data, and synthesizing the collected data on World protected natural areas, their regional differences, as well as their identification and management.

## 2. Regional differences in the identification and management of protected natural areas in the World

For the past half-century, since 1962, the only valid definition for the identification and management of protected natural areas in the world has been the IUCN definition, according to which a protected area is a “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” (Dudley, 2008; Dalmatin et al., 2008., Đug et al., 2007; Deguignet et al., 2014; Juffe-Bignoli et al., 2014; Casson et al., 2016; Gross, John, et al., 2016). Accordingly, the term protected natural area referred to all protected areas that meet the IUCN definition, with or without a management category, regardless of the size and type of management, national - by the state-defined protected areas, as well as determined by regional and international conventions and agreements. Since the early 1960s, there has been a significant increase in the number of protected areas and their surface (Table 1).

Table 1: Cumulative growth of protected natural areas in the World 1962-2014.

Year	Number of areas	Surface (km <sup>2</sup> )
1962.	9.216	2.400.000
1972.	16.394	4.100.000
1982.	27.794	8.800.000
1992.	48.388	12.300.000
2003.	102.102	18.800.000
2014.	209.429	32.868.673

Source: Hrelja, E. 2017; Deguignet et al. 2014.

The numerical indicators of the increase in the number of protected areas and their surface areas are not fully compatible. In the earlier inter-census periods (until 2003), a larger number of smaller areas were identified, and in the recent period (2003-2014), a smaller number of areas with a larger surface area. The largest increase in the number of protected natural areas was recorded in the period 1972 - 1982 (58.9%) and the smallest in 1992-2003. (47.3%) and 2003-2014. (48.7%). The greatest increase in the surface of protected areas was recorded in the period 1982-1992. (71.5%), and the lowest in the period 1972 1982. (46.5%) (Figure 1).

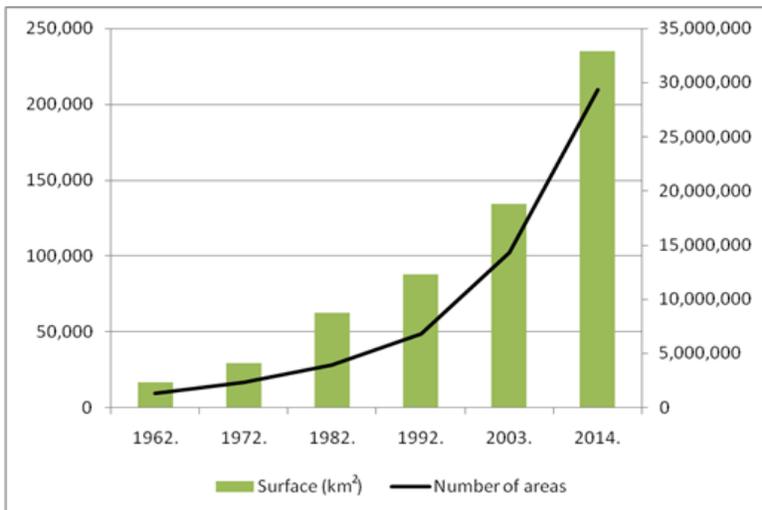


Figure 1: Cumulative growth of protected natural areas in the World since 1962.

Source: Hrelja, 2017; Deguignet et al. 2014.

According to the reported increase in the number of protected natural areas and their surface, in the recent period, protection covered 3.41% of the world's marine and 14% of the world's land areas. Due to the different spatial characteristics, there are considerable differences in the absolute number and surface area of protected areas, ie, their share, between different parts of the

world. In general, protected natural areas on land are prevalent, except Oceania, which is the only one with more marine protected areas. In all observed regions of the world, the total protected surface area is greater than 10,000 km<sup>2</sup>, with the largest protected areas located in South America (with a focus on the southern part of the continent) and then in Africa and Oceania. On the other side, Europe stands out on by the smallest surface of the protected area; it contains more than three-quarters of the total number of protected natural areas up to 1 km<sup>2</sup>.

In addition to the number and surface area, there are marked differences in the proportion of protected natural areas in the total area of the observed regions. These differences range from 0.4% in the Caribbean and up to 24.2% in Oceania (overall) and 15.1% in South America (in the land area) (Figure 2).

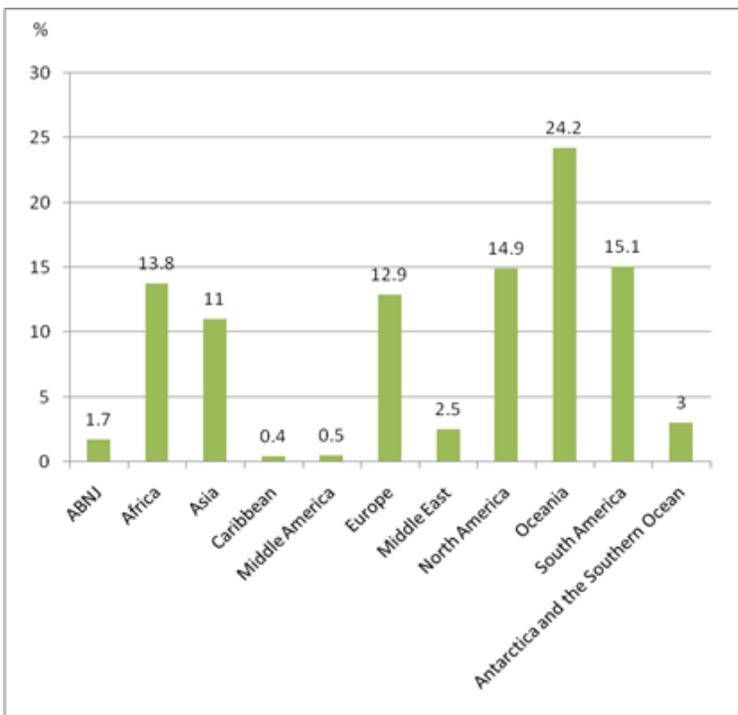


Figure 2: Regional differences in the total area of the protected natural areas network. (ABNJ stands for Areas beyond national jurisdiction)  
 Source: Hrelja, 2017., Deguignet et al., 2014.

IUCN categorization and management of protected areas is a system that provides an international standard for the classification of protected areas by the general management objectives. The application of these categories is voluntary. As a result, there is a relatively large number of protected natural areas that are

not categorized according to IUCN standards or are not reported/recorded in any of its protection categories (0.3% of protected areas and 18.4% of individual natural objects in total).

Considering the protection categories according to the IUCN classification, the highest number of protected natural areas is category IV, comprising 24.5% of the total number of all protected natural areas. In the second place is the V category with 21.4%, followed by III 7.5%, Ia 5.2%, VI 3.2%, II 2.5%, and Ib 1.4%.

Table 2: Management categories of protected natural areas in the World in 2016.

Category	Protected areas	Individual natural objects
Ia	11.027	117
Ib	3.121	-
II	5.420	127
III	15.943	10.765
IV	52.142	2.693
Not applicable	483	388
Not assigned	12.001	-
Not reported	59.746	3.098
V	45.354	1.551
VI	6.750	162
Total	211.987	18.901

Source: <https://www.protectedplanet.net/> (GIS database, adapted by the authors)

According to the IUCN classification, the largest number and share of protected natural areas among the analyzed spatial units of the world are those in Europe, North America, and Oceania. These are also the regions where the protected areas of category IV of protection prevail. In North America, and - to a lesser extent - Oceania, II category of governance is most commonly applied, while Europe stands out as the region with the largest number of areas with different IUCN management categories.

Management types are defined based on management authority and responsibility for a specific protected area. Despite the relatively high percentage of areas where there is no management information, the types of governance in Europe, Africa, and Asia are identified, with a sample representing regional governance trends:

- state governance (Type A) is most prevalent in Europe and, to a lesser extent, in North America;
- partnership management (type B) is most prevalent in Oceania and to a lesser extent in Africa;
- private governance (Type C) is most important in North America, and to a lesser extent in Oceania;

- management by indigenous peoples and local communities (Type D) is most common in South America and Oceania, and to a lesser extent in Central America.

The types and models of governance are different in the observed regions, which is a consequence of the existence of specific socio-economic relations and management traditions in certain parts of the world, and are directly related to formal bodies, institutions, processes, and relevant customary and legal rights.

### **3. Regional differences in the identification of protected natural areas in Bosnia and Herzegovina**

The first officially protected area in Bosnia and Herzegovina was established in 1954. Several years later, in 1962, the first National Park Sutjeska in Bosnia and Herzegovina was established, with Perucica as the nucleus of this park.

The contemporary conservation concept in Bosnia and Herzegovina is in line with IUCN (International Union Conservation Nature). Based on the IUCN categorization, six categories of natural areas have been identified in Bosnia and Herzegovina, within which 29 areas are protected on a total area of 127,557.4 hectares (Hrelja, 2017). Spatial plan of Bosnia and Herzegovina for the period 1981-2000. Planned to put about 8,300 km<sup>2</sup> or about 16.2% of the total area under different regimes and levels of protection; however, to date, 2.49% of the area is protected (Drešković, et al., 2018., Hrelja, 2017). There are significant differences in the IUCN's categorization of identified areas. Thus, of the total number of areas, there are 2 strict nature reserves (category Ia), 4 national parks (category II), 16 natural monuments (category III), 5 nature parks - protected landscapes (category V) and 2 protected areas with sustainable use of natural resources - park forests (category VI). Also, as there are regional differences of protected natural areas at the global level, there are differences in the protection of natural and geographical diversity at the level of political regions (entities) in Bosnia and Herzegovina.

Of the total area of protected natural areas in Bosnia and Herzegovina (127,557.4 ha), to the Federation of Bosnia and Herzegovina belongs 76.9% (98,193.04 ha), and to the Republic of Srpska 23.02% (29,364.32 ha) (Drešković, et al., 2018., Hrelja, 2017). Also, there are significant differences in the number and surface of protected natural areas in certain parts of our administrative units.

Thus, in contrast to the cantons which have a large number of protected natural areas, the Bosnian-Podrinje Canton does not have any identified protected area. In addition to the above mentioned, several highly valuable natural areas in Bosnia and Herzegovina are planned for future protection on the entity, cantonal,

and municipal level. Analyzing the entity-level spatial planning documentation, it is planned to protect about 17% of the total area in the Federation of Bosnia and Herzegovina, about 15.5% of the total area in Republic of Srpska, which would make up about 16% of the total state-level territory (Drešković, et al., 2018).

#### **4. Conclusion**

Analyzing the available literature, cartographic, and statistical data, we can conclude that there is no unique concept of natural areas protection at the global level. Although according to the IUCN definition, protected areas are singled out as a clearly defined geographical area, recognized for purpose, dedicated to the protection, separated through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values, at the regional level, significant differences remain today. Differences are evident both in the identification and in the management of protected natural areas. Thus, the total number of protected natural areas is dominant are protected natural areas on land, except Oceania, which alone has more protected marine areas. According to the IUCN classification, the largest number and share of protected natural areas among the analyzed spatial units of the world are Europe, North America, and Oceania. Also, there are several differences in the share of protected natural areas in the total area of the observed regions.

There are also significant regional differences in the management of protected natural areas in the world. State governance is most prevalent in Europe, partner governance is most prevalent in Oceania, while private governance is most important in North America, and indigenous and local community governance is most common in South America.

As for the area of Bosnia and Herzegovina, a total of 2.49% of the state territory was put under protection. It can be concluded that there are differences in the surface area of protected natural areas at the level of the Federation of Bosnia and Herzegovina (76.9%) and the Republic of Srpska (23.02%), as well as a lower administrative unit.

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