Geotemas, Pau dos Ferros, RN, Brasil
ISSN: 2236-255X, v. 13, 2023.

PRIVATE PROTECTED AREAS: AN ALTERNATIVE FOR BIODIVERSITY CONSERVATION

Áreas protegidas privadas: uma alternativa na conservação da biodiversidade

Áreas protegidas privadas: una alternativa en la conservación de la biodiversidad

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Article History
Reveived: 19 may, 2023
Accepted: 29 october, 2023
Published: 11 december, 2023

ABSTRACT

Private protected areas (PPAs) are essential for preserving and conserving biodiversity, contributing to the maintenance of ecological processes. For this reason, private actors are increasingly managing lands for conservation, giving rise to PPAs. Given the importance of these areas, this study aimed to present the evolution of historical aspects, definitions, classifications, and the situation of private protected areas in the international context. To this purpose, we used data from the World Database on Protected Areas (WDPA). The research found the existence of 34,492 PPAs, with a higher concentration in the Americas and Europe. Over the last 20 years, more than 12,000 new PPAs have been created, following the World Parks Congresses. Most PPAs fall into categories IV and V of the International Union for Conservation of Nature (IUCN) and most of them are located in terrestrial or freshwater environments.

Keywords: Nature Conservation; Private landowner; Database.

RESUMO

As áreas protegidas privadas (PPAs) são fundamentais para preservar e conservar a biodiversidade, contribuindo na manutenção dos processos ecológicos. Por este motivo, atores privados estão cada vez mais gerenciando terras para a conservação, originando PPAs. Visto a importância dessas áreas, este estudo teve como objetivo apresentar a evolução dos aspectos históricos, definições, classificações e a situação das áreas protegidas privadas no contexto internacional. Para isso, foram utilizados dados do Banco de Dados Mundial sobre Áreas Protegidas

(*World Database on Protected Areas* – WDPA). A pesquisa constatou a existência de 34.492 PPAs, com maior concentração na América e na Europa. Nos últimos 20 anos foram criadas mais de 12.000 novas PPAs, após a realização dos congressos mundiais de parques. A maioria das PPAs se enquadra nas categorias IV e V da União Mundial para a Conservação da Natureza (*International Union for Conservation of Nature* -IUCN), situadas, principalmente, em ambiente terrestre e de água doce.

Palavras-chave: Conservação da natureza; Proprietários privados; Banco de dados.

RESUMEN

Las áreas protegidas privadas (PPAs) son fundamentales para preservar y conservar la biodiversidad, contribuyendo en el mantenimiento de los procesos ecológicos. Por este motivo, actores privados están cada vez más gestionando tierras para la conservación, originando PPAs. Dado la importancia de estas áreas, este estudio tuvo como objetivo presentar la evolución de los aspectos históricos, definiciones, clasificaciones y la situación de las áreas protegidas privadas en el contexto internacional. Para ello, se utilizaron datos del Banco de Datos Mundial sobre Áreas Protegidas (World Database on Protected Areas - WDPA). La investigación constató la existencia de 34.492 PPAs, con mayor concentración en América y Europa. En los últimos 20 años se han creado más de 12.000 nuevas PPAs, después de la realización de los congresos mundiales de parques. La mayoría de las PPAs se enmarcan en las categorías IV y V de la Unión Mundial para la Conservación de la Naturaleza (International Union for Conservation of Nature -IUCN) y se ubican principalmente en ambientes terrestres y de agua dulce.

Palabras clave: Conservación de la naturaleza; Propietarios privados; Base de datos.

1 INTRODUCTION

The creation of protected areas (PAs) is among the alternatives to preserve and conserve natural resources. The practice is considered to have been long established in human history (Castro Júnior; Coutinho; Freitas, 2012; Ott; Duarte, 2021) due to the importance of preserving and conserving biodiversity, thus contributing to the maintenance of ecological processes and natural ecosystems (Dudley, 2008). Therefore, protected areas must be integrated into both the terrestrial and marine landscapes (Borrini-Feyerabend *et al*., 2017), and are vital for societies to continue to exist and thrive (Job; Becken; Lane, 2017).

The International Union for Conservation of Nature (IUCN) publishes the Protected Planet Report every two years and presents the evolution of protected areas around the world. Between 2012 (year of the first report, based on data from 2010) and 2020, there was an increase of 32.35% of land and continental waters and 368.33% of oceans in protected areas (UNEP-WCMC; UNEP; IUCN, 2021). The vast majority of protected areas are public (BINGHAM *et al*., 2019), but private sector growth in the creation of these areas is

remarkable, especially in recent years (Stolton; Redford; Dudley, 2014; Kamal; Grodzinska-Jurczak; Brown, 2015; Bingham *et al*., 2017; Mitchell *et al*., 2018; Adams, 2019; Shumba *et al*., 2020; Frías, 2021).

According to Bertzky *et al*. (2012), in 2010, Private protected areas (PPAs) in the world totaled 6,900 units and covered 28,000 km2, that is, only 0.2% of all protected areas. In a more recent study, released by the Protected Planet Report 2018, the number of PPAs rose to 13,105, covering 5.73% of the world's protected areas (UNEP-WCMC; IUCN; NGS, 2018), an increase of nearly 90% in the number of areas.

Research shows that state protected areas perform poorly in achieving biodiversity conservation goals (Maron; Simmonds; Watson, 2018). Often, they are located in areas of high altitude (Joppa; Pfaff, 2009), with low economic value (Albuquerque; Sá; Jorge, 1998), in addition to presenting issues in management, governance and financial resources (Venter *et al*., 2017).

PPAs contribute to national protected area systems, increasing geographic coverage and ecological representation, and protecting habitats and endangered species (Mitchell *et al*., 2018). They also increase connectivity, serving as "trampolines" (*Stepping Stones*) or ecological corridors (Kamal; Grodzinska-Jurczak; Brown, 2015) and make up mosaics of protected areas of different conservation categories (Simão Neto, 2017).

Overall, the creation of PPAs allows the involvement of new actors in combating the loss of global biodiversity (Mitchell *et al*., 2018; Gooden; Sas-Rolfes, 2020), responsible for joining efforts in achieving Aichi[1] Target 11(Woodley *et al*., 2012). Considering the importance of PPAs for nature conservation and the maintenance of human life, this study aims to present the evolution of historical aspects, definitions, classifications and the situation of private protected areas in the international context.

2 METHODOLOGY

The work was developed from an exploratory research, carried out through bibliographical and documentary research. The bibliographical research was elaborated through studies in articles, theses, dissertations and books, using some databases such as

[1] At the 10th Conference of the Parties (Nagoya, Japan, 2010), the Convention on Biological Diversity (CBD) established a strategic, integrative and comprehensive plan for 2011-2020, which represents the global orientation for the decade on biodiversity. This plan included Aichi Target 11 which defines that, by 2020, at least 17% of land and inland areas and 10% of marine areas should be in protected areas (Maretti *et al*., 2012).

Scopus, Scielo, Science Direct and *Web of Science*. In the documentary research, quantitative data from the World Database on Protected Areas (WDPA) were used.

In addition, WDPA data, which catalogs 271,140 protected areas, from September 2022 were used as reference, distributed in shapefile (shp) and tabular (csv) format files. Two attributes of this tabulated file were used to separate the PPAs from other protected areas. The first considered the attribute "GOV_TYPE", selecting all protected areas that presented the following names as governance type: Individual landowners, Non-profit Organisations, and For-ProOrganisations. In this first stage, 19,337 PPAs were selected.

The second criterion used the attribute "DESIG_ENG" and all names that presented the word "private" (private) or "privately" (private) were selected, totaling 48 different names. This action was necessary to include all protected areas, which are legitimate PPAs, and which may have been classified with another type of governance, as in the case of Brazil and Finland. Thus, 22,662 PPAs were identified.

Based on these criteria, 34,492 units were identified; after selecting the PPAs, of the 30 attributes made available by the WDPA, four were chosen to be analyzed, according to Chart 01.

Chart 01 – Description of the analyzed attributes of WDPA

Attribute	Description
IUCN_CAT	Refers to the categories of protected areas defined by the IUCN: Ia, Ib, II, III, IV, V and VI.
MARINE	Identifies whether the protected area is completely or partially in the marine environment. In this case, three values are used: completely in terrestrial or freshwater environment (0), partially in marine environment and terrestrial or freshwater environment (1), and completely in marine environment (2).
STATUS_YR	The year in which the protected area was proposed, listed, adopted, designated or established.
PARENT_ISO3	Refers to the code of the country in which the protected area is located.

Source: Menegasso (2022).

The six files in shapefile format (shp), provided by the WDPA, are divided into points and polygons. To distinguish PPAs from other protected areas, the "WDPA_ID" criterion was used, which is the identification number of the protected area. For this procedure the ArcGIS software was used, also calculating the total area of the PPAs. After this process, the PPAs were spatialized.

3 RESULTS AND DISCUSSION

3.2. The origin and evolution of private protected areas (PPAs)

It is believed that the first private protected area was created in Germany back in the early 1880s, when an association, seeking to preserve the scenic beauty of a mountainous region, began to purchase land to protect it from the action of quarries (Stolton; Redford; Dudley, 2014). In 1824, in Mexico, a farm was acquired by a German botanist, for the cultivation of coffee and at the same time to preserve the rainforest (Holmes, 2013; Stolton, Redford; Dudley, 2014). In England, in 1899, the NGO (Non-Governmental Organization) National Trust, through voluntary contributions, acquired an area to preserve plants, the first private English reserve, the *Wicken Fen* (Mesquita, 1999; 2014; Morsello, 2001) (Figure 01).

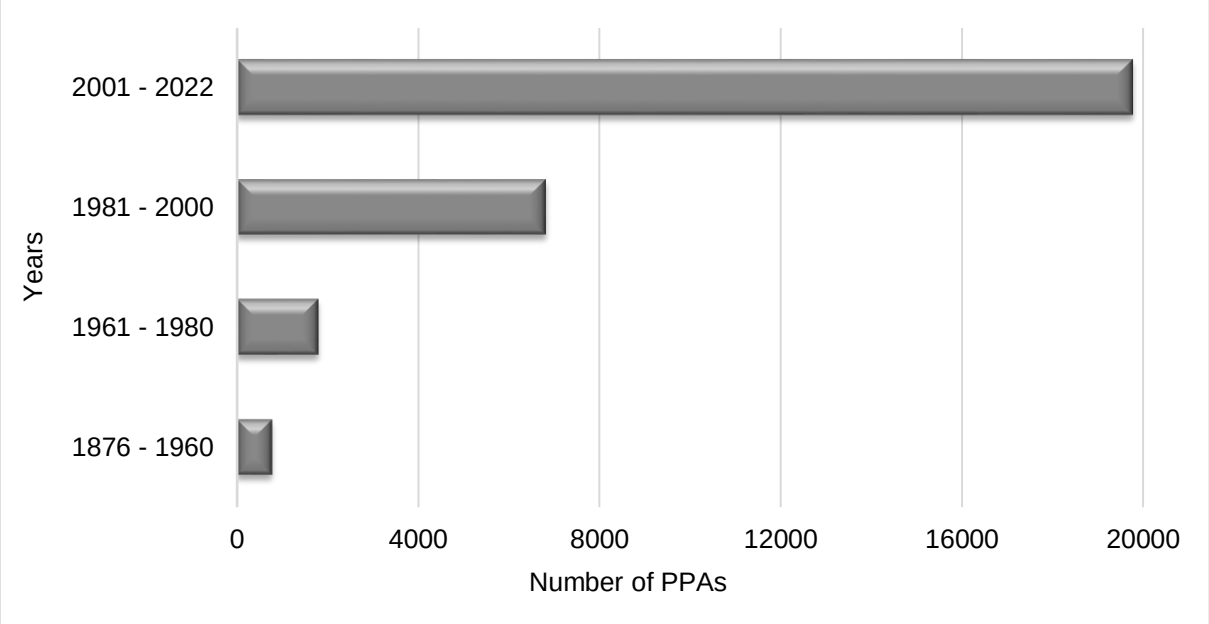
Figure 01 – Image of the former entrance to the privat English reserve, the *Wicken Fen*, criated by the NGO National Trust in 1899

Source: Wicken Fen National Nature Reserve (2023)

Between the end of the 19th century and the middle of the 20th century, the growth of PPAs in the world occurred very slowly. Since 1876, the year of the first PPA registration in the WDPA, 779 units were created worldwide (Figure 02). The motivations were the most

varied, but for Moresello (2001), civil society was dissatisfied with the vagarity of conservation actions promoted by governments and began to create areas to protect nature.

Figure 02 – Evolution of the number of PPAs between 1876 and September/2022



Source: Menegasso (2022).

From 1961 to 1980, the number of PPAs increased to 1,804 units, a growth of 131.57%. During this period, the 1st World Congress of Parks took place in 1962 (Seattle, EUA), promoted by the IUCN, where it was already recognized that many of the world's natural reserves were located on private lands (Langholz, 2010; Souza, 2013; Holmes; 2013), assisting in the conservation of wildlife and natural resources (Langholz; Lassoie, 2001).

Between 1981 and 2000, PPAs continued to grow, reaching 6,830 units, an increase of 278.60%, with an increment of 5,026 new private protected areas. Possibly one of the reasons for this situation was the 4th World Park Congress in Caracas, Venezuela (1992), in which conservation was seen as "a responsibility of all", emphasizing the participation of NGOs, the private sector, landowners, banks and other entities outside the government in matters of protected areas (Souza, 2013).

In the last 21 years, the number of PPAs almost tripled compared to the previous period (1981 - 2000), with 12,937 new units, representing a growth of 189.41%, totaling 19,767 units. According to Sims-Castley *et al*. (2005), three factors may have driven the increase of PPAs in this period: a greater commitment of society to biodiversity conservation, the neglect of governments to protect nature, and the expansion of global ecotourism.

The recognition of PPAs by IUCN grew, and at the 5th World Park Congress (Durban, South Africa), in 2003, a session was held on the subject (Bingham *et al*., 2017), creating the Action Plan for Private Protected Areas (Sims-Castley *et al.*, 2005). The following year, at the Convention on Biological Diversity (COP 7) in Kuala Lumpur (Malaysia), a Work Programme on Protected Areas was adopted, including specific measures to improve and expand protected areas on private land (Sims-Castley *et al.*, 2005).

In 2010, at the 10th Conference of the Parties to the Convention on Biological Diversity (COP-10 - CBD), held in the city of Nagoya, Aichi Prefecture, Japan, the Global Strategic Plan for Biodiversity (2011 to 2020) was approved, seeking concrete actions to stop the loss of planetary biodiversity (UNEP-WCMC; IUCN; NGS; 2018). According to the Aichi Target 11, by 2020, 17% of the land and inland waters and 10% of the marine environment should be in protected areas (Dias; Figueirôa, 2020).

In this sense, it became evident that public protected areas may not be sufficient to achieve the goals of the CBD (Stolton, Redford; Dudley, 2014), hence, PPAs are a potential alternative in the representation and connectivity of ecosystems (Pliscoff; Fuentes-Castillo, 2011; Clements *et al*., 2018, Archibald *et al*., 2020). As a result, the creation of protected areas by the private initiative has become an essential strategy for the implementation of a new global biodiversity structure for the 2020-2050 period (Maxwell *et al*., 2020; Bingham *et al*., 2021), aiming not only to contain the loss of biodiversity, but also to ensure recovery (Mace *et al*., 2018).

Bingham *et al*. (2017) report that after the 12th Convention on Biological Diversity (COP 12 - CBD), held in 2014 in the city of Pyeongchang (South Korea), there was a recognition of the contribution of PPAs in biodiversity conservation, encouraging the sector to continue its efforts in protecting ecosystems.

In 2014, a IUCN publication, called "*Futures of Privately Protected Areas*" triggered a new policy and research interest in private land conservation (Drescher; Brenner, 2018; Gooden; Sas-Rolfes, 2020). This publication arose from the interest of bringing the conservation efforts of private protected areas out of anonymity, integrating them into regional conservation policies, and encouraging and supporting them.

Although at least 50 definitions of areas under private protection are used (Crofts *et al*., 2014), IUCN defines a private protected area as an area under private governance, dedicated to the protection and maintenance of biological diversity, associated natural and

cultural resources, managed by legal or effective means (Stolton; Redford; Dudley, 2014; Mitchell *et al*., 2018).

Based on its objectives, the IUCN assigned six management categories to protected areas (Ia, Ib, II, III, IV, VI and VI), ranging from the strictest protection to those that allow several uses. PPAs can be inserted in any of the six protected area management units of the IUCN (Dudley, 2008; Mitchell *et al*., 2018).

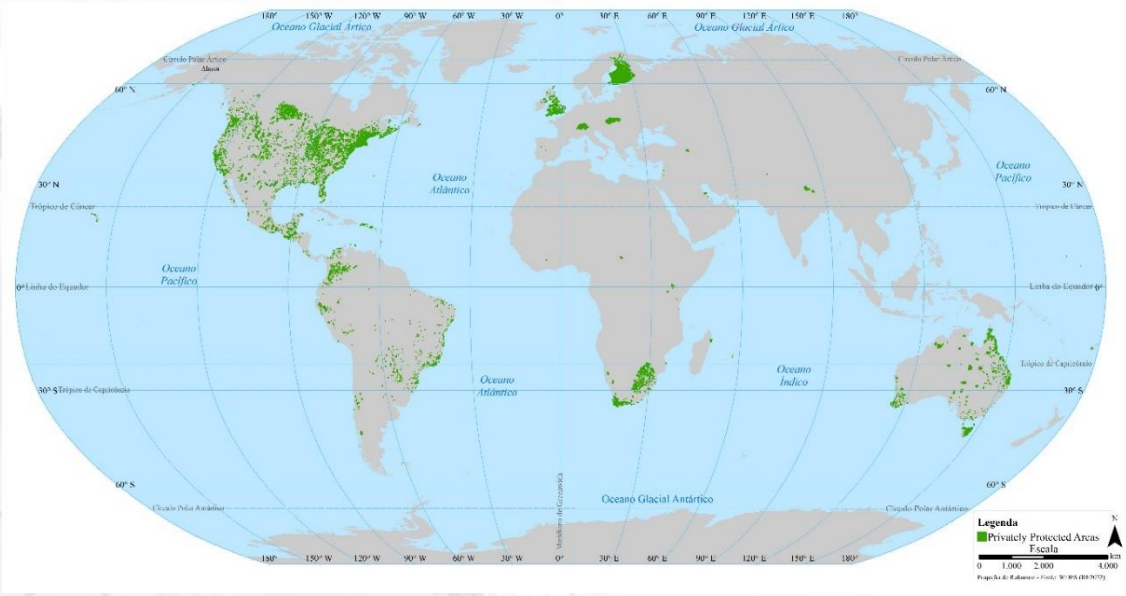
The information contained in the WDPA is made available by approximately 500 data providers (UNEP-WCMC; UNEP; IUCN, 2021) through contributions from governments, non-governmental organizations, individuals, local communities and indigenous peoples (Bingham *et al*., 2019). The 2016 IUCN World Conservation Congress in Hawaii passed a resolution encouraging IUCN members to report on private protected areas that meet IUCN Protected Area Standards in their PA reports and provide related information, including the WDPA and CBD (UICN - WCC, 2016). This resolution may have contributed to the increase of PPA records in the WDPA in recent years.

Although there is abundant data about PPAs in the WDPA, there is still a lack of information on the part of providers when they include PPAs in their records. Thus, the WDPA may underestimate the number and areas of PPAs in the world, with a discrepancy between the report and the official bases of governments and other published scientific research.

3.2. The geographical distribution of private protected areas

In WDPA data, 34,492 protected areas were declared on private land, distributed in 49 countries on all continents, except Antarctica. Figure 03 shows the PPAs identified by polygons, covering 216,408.45 km2 of the planet's surface. The largest concentration of PPAs in the world is in the American continent, especially in the countries that make up North America.

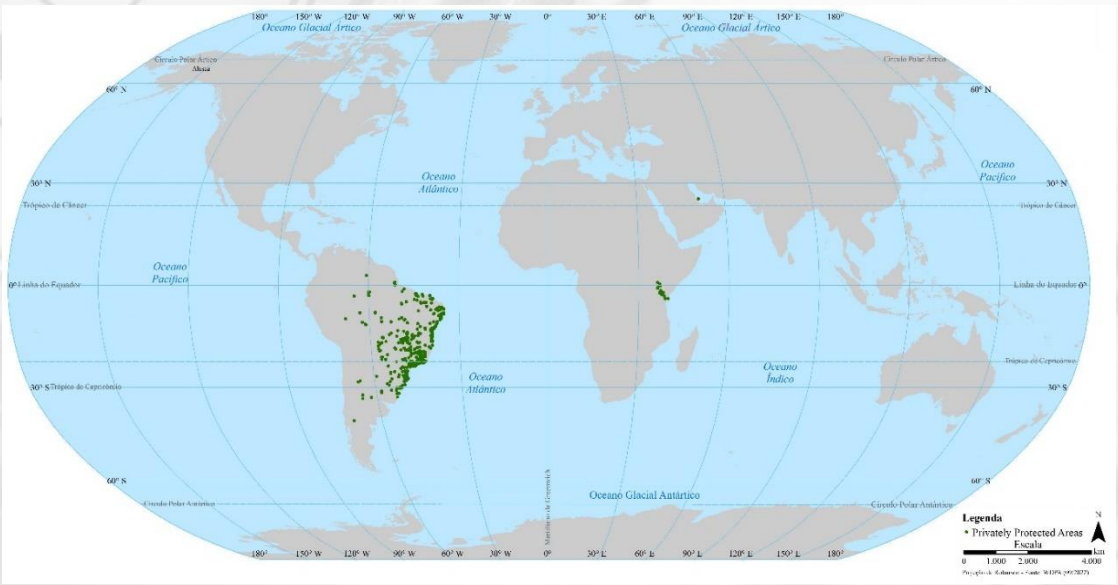
Figure 03 – Location of PPAs represented by polygons, according to WDPA data recorded until September 2022.



Source: Sutil (2022).

In figure 04, the PPAs identified by points by the WDPA are represented; these are located mainly in South America, especially in Brazil. In Africa, they are concentrated in a small portion to the east of the continent, while in Asia there is only one point. PPAs make up 13,882.38 km^2 of the planet's surface. Together (points and polygons), PPAs cover 230,290.83 km^2 of Earth.

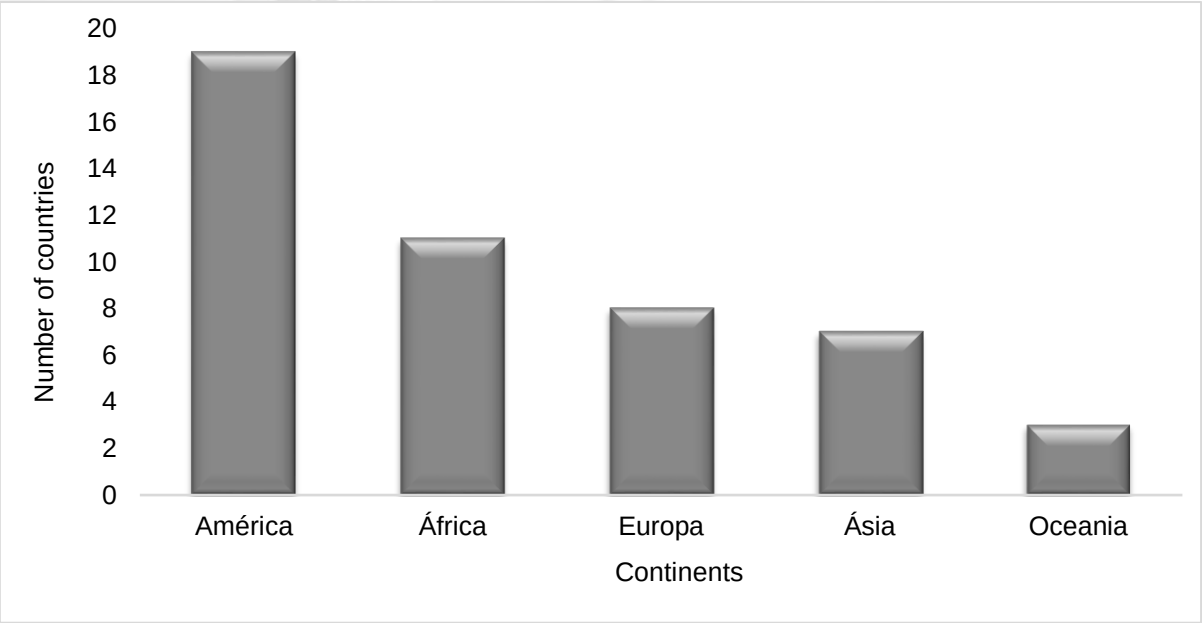
Figure 04 – Location of PPAs represented by points, according to WDPA data recorded until September 2022



Source: Sutil (2022).

Of the total PPAs, 169 do not have country identification. Of the countries that declared them in their territories, most are located in America (19), followed by Africa (11) and Europe (8) (Figure 05). Asia and Oceania have seven and three countries with private protected areas, respectively.

Figure 05 – Number of countries per continent with PPAs, according to WDPA data registered until September 2022

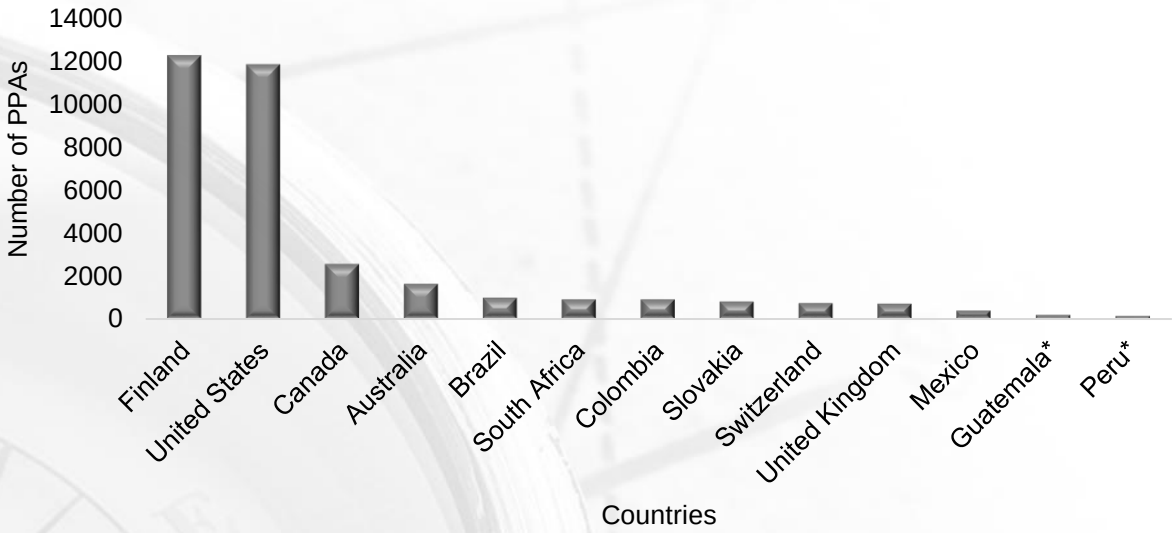


Source: Menegasso (2022).

The vast majority of PPAs is also located in America with 17,153 units, corresponding to 49.73% of all private protected areas of the planet. In this continent, the United States stands out with 11,868 PPAs, as a result of a movement that would have started in 1891 (Bernstein; Mitchell, 2005; Stolton; Redford; Dudley, 2014). Canada registered 2,543 PPAs, ranking second on the continent (Figure 06). In this country, they are mainly concentrated in the south, on the border with the United States, where there are high levels of diversity, but strong ecological pressure (Stolton; Redford; Dudley, 2014).

In Latin America, PPAs gained strength starting in 1990 (Morsello, 2001). Among the 13 countries with the most PPAs in the world, declared in the WDPA, five of them are in Latin America: Brazil, Colombia, Mexico, Guatemala and Peru, which together total 2,613 units. In addition, other Latin American countries also declare PPAs in their territories, but with less representation.

Figure 06 – Countries with the highest number of PPAs in the world, according to WDPA data registered until September 2022



* Guatemala and Peru, with 190 and 142 PPAs, respectivly.
Source: Menegasso (2022).

It is worth noting that there is a discrepancy between the WDPA report and the official data of countries in Latin America, especially for Argentina and Brazil. In Argentina, the SIFAP (Federal System of Protected Areas) contains 47 private reserves (SIFAP, 2022), while in the WDPA the total is 38. None of the Argentine reserves declared the type of governance, but all were designated as private in the "DESIG_TYPE" field.

In Brazil, the difference in records is even greater. While 989 PPAs were registered in the WDPA, the National Confederation of Private Natural Heritage Reserves (CNRPPN) accounted for 1,769 units (CNRPPN, 2022). Brazilian PPAs are called Private Natural Heritage Reserves (RPPNs) but are still classified under government governance in the WDPA. An example of this is the "Serra do Tombador Natural Reserve" (Figure 07), the largest RPPN in Brazil, located in the state of Goiás and acquired in 2007 by the Boticário Group Foundation for Nature Protection (FUNDAÇÃO GRUPO BOTICÁRIO, 2011). Brazil was one of the pioneers in the creation of private reserves in Latin America (Mitchell *et al*., 2018).

Figure 07 – Partial view of the Serra do Tombador Nature Reserve, Goiás, Brazil, under the patrimony of the Boticário Group of Nature Protection Foundation

Source: Boticário Group Foundation for Nature Protection (2011).

According to Langholz (2010), during the 1980s, the boom in global ecotourism stimulated the proliferation of private protected areas in most of the world, including the African continent. Currently, the most significant numbers of PPAs on the continent are located in Kenya (32) and Swaziland (9) and especially in South Africa. In the latter, the WDPA showed that there are 922 PPAs, all identified by governance by "individual owners", while data from the country's Department of Environment, Forest and Fisheries (DEFF) point to 1,637 private reserves (DEFF, 2022).

In the WDPA, other African countries also have PPAs, such as Madagascar, Mauritius and Namibia, with two reserves each; and Botswana, Central African Republic, Ivory Coast, Mozambique and Tanzania with only one. In total, the African continent has 974 PPAs registered with the WDPA, that is, 2.82% of the world's private protected areas.

In Europe, PPAs are concentrated in the western and northern portions of the continent, with Germany, Spain, the United Kingdom and Finland with the highest representation (Stolton; Redford; Dudley, 2014; Kamal; Grodzinska-Jurczak; Brown, 2015). In the WDPA, eight European countries reported PPAs: Finland (12,274), Slovakia (819), Switzerland (730), the United Kingdom (725), the Netherlands (7), and Armenia, Spain and Portugal, with one unit each. Together, European PPAs represent 45.03% (15,532 units) of the planet's private protected areas. It is noteworthy that the PPAs of the United Kingdom

and the Netherlands were added to those existing in their overseas territories, such as Bermuda, Cayman Islands, Bonaire and the Falkland Islands.

According to the WDPA, Finland is currently the country with the highest number of PPAs both in Europe and in the world, with 12,274 PPAs. This number is close to the value indicated by Stolton, Redford and Dudley (2014), when, in 2010, Finland had more than 10,000 small PPAs, which covered an area of 290,000 ha.

Although all Finnish private protected areas are designated as either a Private Nature Reserve or a Private Conservation Area, the type of governance is declared to be governmental. The number of PPAs present in the WDPA is much higher than what is disclosed by the Ministry of the Environment of Finland, in which about 7,800 nature conservation areas are confirmed in private lands (Hesso, 2022).

In WDPA data, none of the Swiss PPAs has been reported as private governance, but, in their designation, all are declared private. In this country, the NGO Pro Natura is responsible for managing more than 700 protected areas, covering an area of 269 km2 of threatened habitats (PRO NATURA, 2022).

Although it does not appear in WDPA data, it is believed that in Germany there are more than 700 PPAs, many of which emerged after the unification of the country (1990s), when unused public land from former East Germany was donated, reducing the cost of rehabilitating and managing the areas by the state (Stolton; Redford; Dudley, 2014).

In Asia, according to Stolton, Redford and Dudley (2014), PPAs are not very representative, but there are initiatives in Japan, South Korea and even China. WDPA data shows that only seven Asian countries have PPAs: Nepal (3), Saudi Arabia (2), Jordan, Lebanon, Oman, Pakistan and Qatar with only one unit each. Together, they total ten private protected areas and represent only 0.02% of all the PPAs in the world.

Australia, the largest country in Oceania, presented the third largest number of PPAs in the world in the WDPA, with 1,632 units, accounting for 99.69% of all protected private areas of the continent. In recent years, there has been an expansion of PPAs in this country, which increased the representation of biodiversity and connectivity of the National Reserve System (Fitzsimons; Wescott, 2007; Fitzsimons, 2015). In this country, the government provides incentives for PPAs located in areas with high biodiversity and identified as priorities for conservation, or for those that maintain water resources or generate jobs (MITCHELL *et al*., 2018).

Besides Australia, Fiji and Marshall Islands also have PPAs in their territories, with two units each. Recently, the work of Bingham et al. (2021), based on the June 2021 WPDA,

considering the "Not reported" information on the type of governance, affirmed the existence of 4,694 PPAs in New Zealand.

Despite the positive data described above, the amount of PPAs remains underreported due to the lack of information passed on by governments, who are responsible for the dissemination of protected areas of their countries (Bingham *et al*., 2017).

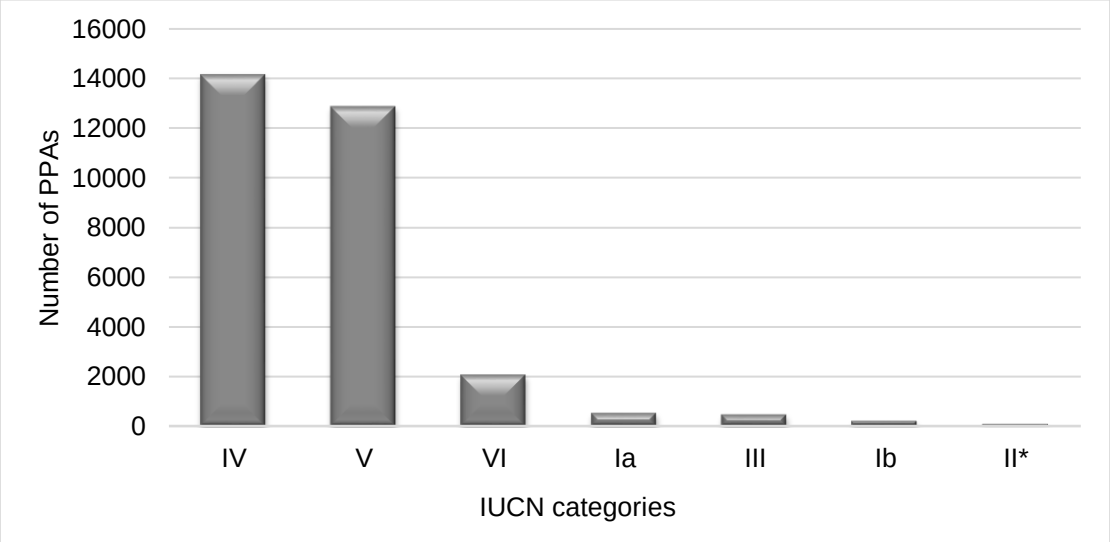
Fitzsimons and Wescott (2007) and Bingham et al. (2017) say that some PPA owners are reluctant to disclose data to governments in fear that the State will use PPAs to achieve conservation goals and stop investing in new protected public areas, not taking on international obligations. Hence, the number of PPAs may be much higher than is disclosed (Gooden, 2018).

3.3 Private protected areas and IUCN categories

PPAs can be inserted in any of the six protected area management units of the IUCN. Of the 34,492 PPAs present in the WDPA, 4,055 units (11.76%) did not identify the IUCN category.

Most of the PPAs identified in this study fall into category IV of the IUCN, with 14,186 units, which represents 41.12% (Figure 08). This category is defined as a habitat and species management area, with the specific objective of conserving certain species or habitats (Borrini-Feyerabend *et al*., 2017), subject or not to regular and active management interventions to fulfill their objectives (Maretti *et al*., 2012).

Figure 08 – Distribution of PPAs by IUCN categories, according to WDPA data registered until September 2022



* Category II includes 72 PPAs.
Soure: Menegasso (2022).

Category V is the second largest of the PPAs, with 12,895 units, corresponding to 37.38%. It is a protected terrestrial/marine landscape, characterized by the interaction between people and nature, which over time has produced a landscape with distinct characteristics with significant aesthetic, ecological and/or cultural diversity and, overall, with high biological diversity (Dudley, 2008). Originating in Europe (Maretti *et al*., 2012), the focus of management is on guiding society to protect and manage its resources and maintain natural and cultural values (Phillips, 2002).

The third category with the highest representation was VI, with 2,076 units (6.01%) of the PPAs. Defined as a protected area for management of natural resources, with a predominance of unmodified natural systems, it provides a sustainable flow of natural products and services that meet the needs of managed communities, ensuring the protection and maintenance of biodiversity (Dudley, 2008). It is usually a category composed of large areas (Borrini-Feyerabend et al., 2017), where the sustainable use of resources is a means by which nature conservation is obtained.

The categories with more a rigid protection of the IUCN are Ia and Ib, which represent 740 (1.55%) and 203 (0.58%) units of the PPAs, respectively. Category Ia - Restricted Nature Reserve - is a protected natural area that preserves samples of ecosystems, species and features of Geodiversity of great importance (Maretti et al., 2012). Category Ib - Wildlife Area - is defined by its unmodified or slightly modified natural characteristics, without permanent or significant human habitation, managed and protected to preserve its natural condition (Borrini-Feyerabend et al., 2017).

Categories Ia and Ib are mainly located in Finland, Slovakia, Australia and Canada, making up 96.89% of these categories. Protected areas, included in these categories, are important for the conservation of regulatory and support ecosystem services (Figueroa *et al*., 2020).

Finally, totaling 540 units (1.56%), are categories III and II of the IUCN. Category III - Natural Monument - is intended to protect a specific natural monument, with high visitation value, historical or cultural, while category II - National Park - protects the ecological integrity of one or more ecosystems for present and future generations by providing recreational, educational, scientific and cultural significance opportunities (Dudley, 2008).

3. 4 The distribution of private protected areas by type of environment

PPAs present in the WDPA can be classified into three types of environments: completely terrestrial or freshwater (0), partially marine and terrestrial or freshwater (1), and finally completely marine (2).

Most of the private protected areas are located in environment type 0, with 32,619 units, which corresponds to 94.56%, distributed in 40 countries. The other PPAs, located in a partially marine environment and in a terrestrial or freshwater environment or completely in a marine environment, correspond to 4.06% and 1.36%, respectively (Table 01).

Table 01 – Distribution of PPAs by type of environment, according to WDPA data recorded until September 2022

Type of environment	Number of PPAs	Percentage of PPAs (%)
Completely in terrestrial ou freshwater environments	32.619	94,56
Partially in marine and terrestrial or freshwater environments	1.401	4,06
Completely in marine environments	472	1,36

Source: Menegasso (2022).

Of the 472 PPAs located in the marine environment, 329 units (69.70%) have emerged in the last 20 years. In 1999 the work "Guidelines for Marine Protected Areas" of the IUCN was published, in which the involvement of the private sector and civil society to generate additional sources of support for marine protected areas was already considered important (Kelleher, 1999).

PPAs in the marine environment collaborate with Sustainable Development Goal 14 "Life below water", including marine biodiversity conservation (Shiiba *et al*., 2022). The creation of PPAs in the marine environment will also contribute to achieving Goal 3 of the Global Biodiversity Structure Post 2020, which aims to conserve 30% of marine areas by 2030 (Estradivari *et al*., 2022).

4 FINAL CONSIDERATIONS

Private land conservation is experiencing a surge in global growth, primarily by expanding nature protection to actors other than the government sector. The great increase in PPAs occurred at the end of the twentieth century, after the holding of the World Parks

Congresses promoted by the IUCN, recognizing the importance of the private sector in nature conservation. Today, they are present in several countries, contributing to the protection of terrestrial and marine environments.

Although it has advanced, the number and contributions of PPAs are still underreported by many governments. Greater involvement of countries in reporting and recognizing PPAs and thus collaborating with WDPA data is needed to improve understanding of the global protected area network.

The existence of PPAs was also accounted for the achievement of Aichi Target 11 of the Convention on Biological Diversity, which closed in 2020. However, efforts to establish private protected areas for the post-2020 global biodiversity structure are expected to continue, protecting and conserving through a well-connected and effective system of protected areas.

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