The importance and role of forests in Poland

AirClim
Air Pollution & Climate Secretariat

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1. The historical significance of forests in Poland

Since the dawn of statehood, the forest has played an important role in Poland. The first changes in writing about forests in Poland appeared in the 12th century in Gall Anonim's Chronicle. It is estimated that forests then occupied up to 75–80% of the land area. On the one hand, they were hard-packed primeval forests and on the other, park-like forests. They were an important defensive factor, making access to many places difficult and creating opportunities for ambushes for enemy troops. According to Gall, it was the forests that protected Poland from the imperial invasion. Settlements arose near forests and harvested food, building materials and fuel from them, while agriculture developed in their vicinity. At the same time, the forest was an object of fear, uncertainty and mystery, so it was an object of worship. Attempts were made to win the favour of divine providence in contact with the forest. It provided monarchs and the powerful with entertainment in the form of hunting. In general, it was a border between countries, tribes and settlements, and acted as a communication barrier.

However, the demand for more and more land for cultivation of crops and animal husbandry, as well as settlements, led to the felling and burning of forest areas. As a result of increasing settlement traffic, the demand for construction timber, firewood and products such as charcoal or potash increased from the 13th century onward. A significant acceleration of forest shrinkage (deforestation) occurred in the 19th and 20th centuries. As late as the end of the 18th century, Poland's forest cover was still around 40% (within the borders of the time).

2. Forests today

Poland is home to a variety of forest types, which cover an area of nearly 9.3 million hectares and account for 29.6% of the country's total land area (Figure 1). These forests play an important role in the country's ecosystem, economy and cultural heritage (Figure 2). They are found mainly on the least fertile soils, so among such habitats, boreal communities predominate, accounting for 50.1%. The forests are dominated by coniferous species, which together cover 76.6% of the area. These include pine, larch, spruce and fir. Deciduous species appear on 23.4% of the area, and are dominated by oak, ash, maple, sycamore, elm, as well as birch, beech, alder, poplar, hornbeam, aspen, linden and willow. The dominant species in lowland and upland areas is pine, which occupies about 60% of the forest area. Spruce and beech predominate in mountainous areas. Such a significant predominance of pine is due to the way forest management was carried out in the past, when pine monocultures were created as part of ongoing afforestation.

Polish forests are known for their rich biodiversity, creating living space for plants and animals. This is especially true of natural forests, which are remnants of ancient primeval forests. These have the highest biodiversity among Poland's ecosystems, and forests are home to about 65% of all the country's species, including rare and endangered species. Forests are home to large mammals such as bison, wolves, lynx and wild boar, as well as a variety of birds, insects and reptiles.

Fig. 1 The distribution of forests in Poland
Source: Englishsquare.pl sp. z o.o., licencja: CC BY-SA 3.0.

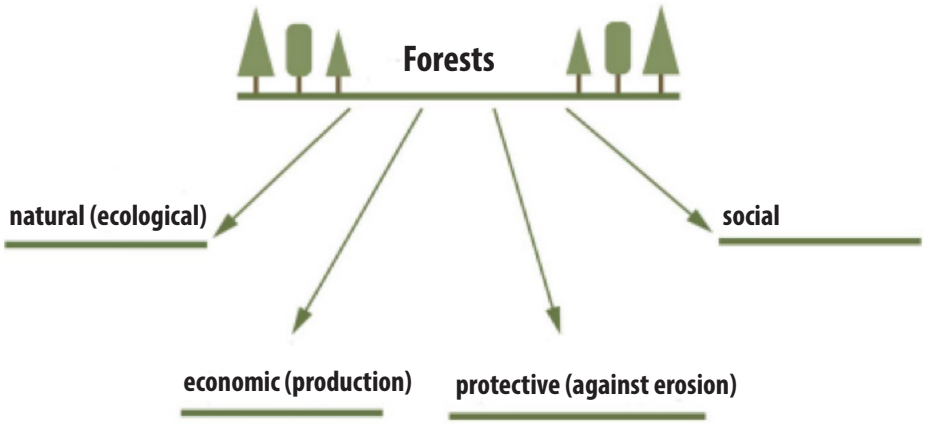

Fig. 2 Various functions of the forest

Forests in Poland perform a variety of natural functions. First of all, they shape the local climate, and contribute to the retention of dust and gas pollutants, including the absorption of carbon dioxide, which, combined with the production of oxygen, leads to air refreshment. This is particularly important in the vicinity of large industrial plants and urban agglomerations. They contribute to the proper circulation of water in nature as a result of transpiration, soil and biological retention (retention of rainwater on the surface of leaves, branches, tree trunks) and slow down snow melt and surface runoff of snowmelt and rainwater, which counteracts floods, avalanches and landslides. They also act as a buffer, trapping pollutants to protect the waters of lakes and rivers.

Forests in Poland have many important social functions. First of all, they provide an environment for physical and mental regeneration, especially for residents of large urban areas. To make this possible, tourism and recreation infrastructure is being created in the form of hiking, biking and horseback riding trails, camping areas, forest parking lots, shelters, health paths, viewing platforms, etc. They form the basis of local employment both directly in forests and in sectors directly and indirectly related to forestry, such as tourism or wood processing. In Poland, there are 454,000 employees in the forestry and timber sector, and 25,000 in state forests. The forest is the basis for much scientific research and is used to raise environmental awareness.

The beauty of the forest in Poland. Source: https://pixabay.com/pl/images/search/lasy%20polska/

In Poland, the vast majority of forests are economic in nature, which means that they are managed to provide primarily timber but also other raw materials of plant and animal origin. According to the Central Statistical Office, 42.2 million cubic metres were harvested in 2021, i.e. 6.5% more than a year earlier and 25% more than in 2010. Under additional forest use, 4.3 thousand tons of forest fruits (20.8% less than in 2020) and 2.3 thousand tons of forest mushrooms (15% less than a year earlier) were purchased in 2021. In the year under review, 11.3 thousand tons of game were procured (down 11.6% from the previous year). This does not include individual harvesting for personal consumption. It is important to note that forests also supply a variety of raw materials for use in fields such as medicine, pharmaceuticals, cosmetics, catering, and the chemical industry.

According to the Forest Law that came into effect on 28 September 1991, commercial forests are divided into production and protected forests. The first provide raw timber and forest fruits and are semi-natural forest complexes, as well as monoculture plantations of fast-growing trees. The second group is protected forests, in which economic use is restricted. These include soil-protection forests, microclimate-protection forests, recreational and recreational spa-climate forests, which protect conditions conducive to improving health around sanatoriums and spas. At the end of 2021, the status of protected forests, i.e. those with non-productive functions, applied to almost 4 million hectares, i.e. more than 42.2% of Poland's forest area (Figure 3).

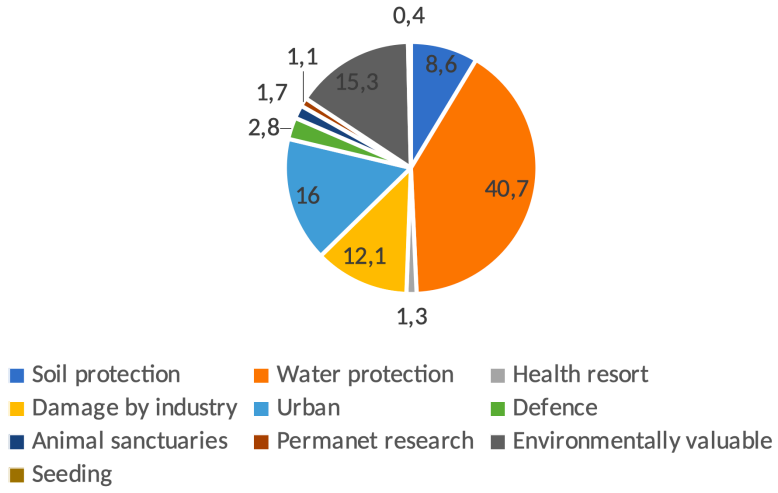

Fig. 3 Protecting forest in state forest areas.

Source: Rocznik Statystyczny Leśnictwa 2022. Główny Urząd Statystyczny

3. Forests and nature conservation

In today's world, forests of natural-scientific importance for the preservation of natural heritage play an important role. They primarily include forest complexes within the boundaries of protected areas, national parks, nature reserves, Natura 2000 areas and other forms of protection. They are refuges for animals and sites of rare and endangered plants subject to species protection. Forests with the highest degree of naturalness, which are sometimes remnants of ancient primeval forests, are partially or completely excluded from forest management. They occur mainly within the boundaries of national parks (61.8% of their total area), in nature reserves (64.3%), landscape parks (51%) and protected landscape areas. Forests under special protection due to the preservation of natural resources, including the gene pool, also include stands that constitute a seed base. They account for about 2% of the total forest area in Poland. Thanks to them, it is possible to preserve native tree species in forests.

Measures are being taken to strengthen the role of forests in climate protection as well as their adaptation to ongoing changes. These measures include implementation of the Forest Carbon Farms project, which aims to increase the absorption of carbon dioxide and other greenhouse gases by forests. It is estimated that the mass of carbon dioxide absorbed annually by forests in Poland is 36.9 million tons, which is roughly equivalent to about 10.0 million tons of carbon. For comparison, the total carbon content of the woody biomass of Poland's forests has been estimated at 822 million tons.

4. Important initiatives

Green Lungs of Poland. The area of the north-eastern part of Poland is characterised by unique natural and landscape values on a national scale. This is influenced by the diversity of ecosystems found here, and the naturalness of the environment associated with a low level of anthropopression. The forest cover here is nearly 30%, so it is close to the average for Poland, while a very large share of the forest area is made up of remnants of ancient primeval forests (Białowieska, Knyszynska, Piska, Kurpiowska and others). It is not surprising, then, that it is in this part of Poland that a functional area of 63,234 km^2 (20.2% of the country's area) has been created, referred to as the Green Lungs of Poland. The idea formulated in 1983 by Krzysztof Wolfram, an ecologist, was to integrate environmental protection with economic and societal development in north-eastern Poland. Those particularly involved[1] in the materialisation of this idea received the international Ford Prize in 1992. On 14 September 1994 the lower house of Parliament adopted the declaration for the area, recognising it as a region where the idea of eco-development should be consistently observed. The Green Lungs of Poland agreement was signed as many as four times. The first signing was in Białowieża on 13 May 1988; the next was two years later on 21 December 1990 in Olsztyn; the third in Łańsko on 26 November 2001, while the fourth was in Warsaw on 20 December 2004. Such frequent renegotiation of the terms of the agreement resulted from the changing political situation, administrative conditions and accession to the European Union. Subsequent versions introduced certain modifications to the text of the agreement, nevertheless the basic idea remained the same – in the socio-economic development of the area known as the Green Lungs of Poland, the principle of economic development, linked to the processes of industrialisation, should be rejected in favour of development that takes into account the need for harmonious coexistence of the natural environment, society and economic development. These assumptions were included in the "Strategy of spatial development of the functional area of the Green Lungs of Poland according to the principles of eco-development", announced in 1992. Most of the principles of sustainable development for the Green Lungs of Poland that were stated in the strategy remain in force today. On 28 September 2005, the Green Lungs of Poland Foundation was established. In 1996, it began promoting products, services and initiatives that meet the main assumptions of the Green Lungs of Poland. The Promotional Mark was established for this purpose, as an award that carries considerable prestige. Companies, institutions and legal entities that conduct their activities in the Green Lungs of Poland in accordance with the principles of sustainable development may apply for the award.

1 Andrzej Kassenberg, Prof. Stefan Kozłowski, Zdzisław Szkiruć i Krzysztof Wolfram.

The Masurian Lake District.
Source: https://pixabay.com/pl/images/search/lasy%20polska/

Carpathian Primeval Forest. This area, next to the Białowieża Forest, is the most valuable forest complex in Poland. Efforts to preserve its values are supported by many organisations and individuals, including the Natural Heritage Foundation, which gives the following summary on its website: *"The turbulent history of the region has meant that wildness has slowly begun to return to the forests of the Bieszczady, Przemyskie Foothills and Beskid Niski. Today, the Carpathian Primeval Forest is home to the big three of Polish predators – the bear, lynx and wolf. It is home to a mysterious wild cat – the wildcat. It is in the old primeval trees of the Carpathian Mountains that the golden eagle, extremely rare in Poland, establishes its nests. The Carpathian primeval forest is still inadequately protected. The Turnicki National Park has not been established. The Bieszczady National Park is waiting to be expanded. This is an area where we can still find relict species, characteristic of natural forests. Such that, despite human pressure, have retained their wildness. Unfortunately the last scraps of the forest are being treated like a commercial forest. Monumental-sized trees are leaving it. We are trying to counteract this. We apply for the creation of new protected areas, protection zones. We report damage. We look for species that need zonal protection. We prepare nature documentation. We hope that our efforts will eventually bear fruit and the Carpathian Forest, our second Białowieża, will be preserved for future generations."*

Carpathian Primeval Forest.
Source: Fundacja Dziedzictwo Przyrodnicze

Summary

Forest areas in Poland are, on the one hand, under strong pressure from urbanisation, growing demand for timber, mass tourism and, on the other hand, are affected by climate change, both droughts and hurricane winds, which cause irreparable damage to forests. At the same time, the importance of forests as a place for biodiversity conservation, climate mitigation and carbon absorption capacity is particularly growing. Reconciling these trends requires a balanced view of the forest as a national asset not only for the present but also for future generations.

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