Natura 2000 and forest protection

Białystok, 2012
Forests in Poland

Poland is one of the European countries with the biggest forest area. Forests cover 9.1 million ha of the country’s territory. The vast majority of them is state forests, including nearly 7.6 million ha managed by The State Forests National Forest Holding (*Państwowe Gospodarstwo Leśne Lasy Państwowe*).

In Poland, there are more and more forests. The afforestation rate of the country has increased from 21% in 1945 to 29.2% at the moment. Between 1995 and 2008, the forest area increased by 310 thousand ha. The basis for afforestation works is the “National Programme for Increasing the Forest Cover” (KPZL), assuming an increase of the afforestation rate up to 30% by 2020 and up to 33% by 2050. Polish forests abound in flora, fauna and fungi. 65% of the total number of animal species live there.

Most of the areas covered by the Natura 2000 network were created on forest territories. They account for 40% of land managed by The State Forests National Forest Holding and cover over 2.8 million ha. It means that foresters are responsible for the condition of habitats and populations of protected species within the network.

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Special Protection Areas (SPAs) located in the State Forests cover the area of 2.1 million ha (which constitutes 29.2% of the land belonging to the State Forests), and Special Areas of Conservation (SACs), cover 1.5 million ha (21.4% respectively)\(^2\).

In order to guarantee protection of forest ecosystems, rational use of natural resources occurring there (mostly wood) and the possibility of the ecosystems fulfilling other social functions, sustainable forestry is necessary. Sustainable forestry is executed by means of forest management plans developed by the State Forests. Those are basic documents which describe particular forests and their resources and determine all the activities taken as part of forestry management in Poland. They are prepared every 10 years and approved by the Minister of Environment. A part of them is the Nature Conservation Programme, including a comprehensive description of nature’s condition as well as tasks regarding its protection and methods of their realization. Forest management plans are developed in cooperation with bodies supervising the areas of Natura 2000 so as to ensure their proper protection.

The network Natura 2000 covers both natural forests and managed timberlands whose condition is similar to the natural one. A forest area included in the network of Natura 2000 is not obligatorily excluded from economic plans, just like in the case of agricultural areas. The forms of management used in it, however, should be adjusted to the natural environment and to the species and habitats occurring in the area covered with protection. Pro-environmental management can be relatively simple here and can come down to e.g. leaving dead trees in the forest or protecting particular trees because of nests of rare bird species occurring on them. More comprehensive efforts are also possible, such as extending the restocking period or implementing forest cutting – a system of management aimed at creating the most beneficial conditions for restocking the forest. The choice of proper actions depends on the kind and condition of local forest ecosystems. Such decisions must be taken in close cooperation with
local interest groups and in the presence of the body managing the local Natura 2000 area and the appropriate unit of the State Forests³.

Podlaskie Voivodeship and selected forest complexes in it

Nature is undoubtedly the main value of Podlaskie Voivodeship. Protected areas of forests, mostly pine and mixed ones with high participation of spruce and fir trees, cover 29% of the surface of the whole voivodeship. Vast forest complexes, which have retained their original character as the only ones in Europe (national and landscape parks), abundance of unique flora and fauna, a complex drainage system and wetlands constitute the varied landscape of this region. There are as many as four national parks here: Białowieża, Biebrza, Wigry and Narew National Parks [Białowieski Park Narodowy, Biebrzański Park Narodowy, Wigierski Park Narodowy and Narwiański Park Narodowy]⁴.

It is worth mentioning that within the area of the Regional Directorate of the State Forests in Białystok,

– 20 Special Protection Areas of Natura 2000 have been determined, with the surface of over 763 thousand ha (357,174 ha on the territory of the State Forests) on the basis of the so-called Birds Directive:

1. Augustów Primeval Forest [Puszcza Augustowska] (PLB200002)
2. Biebrza Refugium [Ostoja Biebrzańska] (PLB200009)
4. Valley of the Upper Nurzec River [Dolina Górnego Nurca] (PLB200004),
5. Valley of the Upper Narew River [Dolina Górnej Narwi] (PLB00007)
6. Oświn Lake [Jezioro Oświn] and its surroundings (PLB280004)
7. Borki Primeval Forest [Puszcza Borecka] (PLB280006)
10. Knyszyn Primeval Forest [Puszcza Knyszyńska] (PLB200003)
11. Boggy Valley of the Narew River [Bagienna Dolina Narwi] (PLB200001)
12. Pisz Forest [Puszcza Piska] (PLB280008)

³ More information can be found in a publication by P. Rutkowski, Natura 2000 w leśnictwie, Warszawa 2009.
⁴ http://www.staypoland.com/podlaskie.htm
13. Refugium of the Orzysz Traverse [Ostoja Poligon Orzysz] (PLB280014)
15. Dobskie Lake [Jezioro Dobskie] (PLB280012)
16. Valley of the Lower Bug River [Dolina Dolnego Bugu] (PLB140001),
17. Valley of the Lower Narew River [Dolina Dolnej Narwi] (PLB140014),
18. Ravine Valley of the Narew River [Przelomowa Dolina Narwi] (PLC200003),
19. Łuknajno Lake [Jezioro Łuknajno] (PLB280003)
20. Wizna Bog [Bagno Wizna] (PLB200005),

15 Special Areas of Conservation of Natura 2000 significant for the European Community have been determined, with the surface of over 496 thousand ha (277,474 ha on the territory of the State Forests) on the basis of the so-called Habitats Directive:

1. Forest of Czerwony Bór (PLH200018)
2. Valley of the Biebrza River [Dolina Biebrzy] (PLH200008)
3. Valley of the Upper Rospuda River [Dolina Górnjej Rospudy] (PLH200022)
4. Valley of the Pisa River [Dolina Pisy] (PLH200023)
5. Valley of the Szeszupa River [Dolina Szeszupy] (PLH200016)
6. Jeleniewo (PLH200001)
7. Jelonka (PLH200019)
8. Woszczelskie Lake [Jezioro Woszczelskie] (PLH280034)
9. Mamerki (PLH280004)
11. Masurian Bogs [Mazurskie Bagna] (PLH280054)
13. Grasslands in Haćki [Murawy w Haćkach] (PLH200015)
14. Bogs of the Narew River [Narwiańskie Bagna] (PLH20002)
15. Skalisko Basin [Niecka Skaliska] (PLH280049)
16. Augustów Primeval Forest [Puszcza Augustowska] (PLH200005)
17. Borki Refugium [Ostoja Borecka] (PLH280016)

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18. Knyszyn Refugium [Ostoja Knyszyńska] (PLH200006)
19. Oświn Refugium [Ostoja nad Oświnem] (PLH280044)
22. North Masuria Refugium [Ostoja Północnomazurska] (PLH280045)
23. Suwałki Refugium [Ostoja Suwalska] (PLH200003)
25. Sejny Lake District [Pojezierze Sejneńskie] (PLH200007)
26. Ravine Valley of the Narew River [Przelomowa Dolina Narwi] (PLH200003)
27. Białowieża Primeval Forest [Puszcza Białowieska] (PLC200004)
28. Rominta Primeval Forest [Puszcza Romincka] (PLH280005)
29. Bunkers of the Brest Fortified Region [Schrony Brzeskiego Rejonu Umocnionego] (PLH200014)
30. Peat Bogs of the Sudawskie Mountains [Torfowiska Gór Sudawskich] (PLH200017)

Apart from the Białowieża Primeval Forest, Augustów and Knyszyn Primeval Forests should also be given special attention. The Augustów Primeval Forest is located on the territory of three poviats: Augustów, Suwałki and Sejny ones. That area includes a forest complex situated at the borderline of the Augustów Plain (Równina Augustowska) and the Biebrza Basin (Kotlina Biebrzańska).

It is the only forest complex of that size in the region of Suwałki, preserved in the place of former forests of the Jatvingians. It spreads from the valley of the upper Biebrza River over the whole Augustów Plain, up to the southern end of the East Suwałki Lake District (Pojezierze Wschodnosuwalskie) in the region of Sejny. The total surface of the Forest is about 160 thousand ha, out of which 114.4 thousand ha belongs to Poland and the rest to Lithuania and Belarus. That biggest forest area of our country is also especially attractive from the point of view of tourism, nature and hunting. The territory of the Forest also includes the whole Augustów Lake District with picturesque lakes such as Necko, Rospuda, Białe,
Studzieniczne, Sajno and Serwy. Nearly 50 species of mammals inhabit the Augustów Primeval Forest. Among them, there are elk, deer, wild boar, wolf, lynx, badger, otter and beaver. The bird world is represented by about 150 species, including almost 120 nesting species. Over 30 species of fish live in lakes and rivers of that region. The forest has nearly all the species of amphibians and reptiles occurring in Poland as well as many species of crustaceans, insects, beetles, butterflies and flies.

Photograph by A. Grajewska, *Puszcza Augustowska*

That area is covered with varied tree stands (about 90% of the surface), which have maintained their natural character in many places. In the Augustów Primeval Forest, pine (72.8%) and pine-fir forests prevail, with patches of mixed forest (with a predominance of deciduous trees such as oak, maple, ash and birch) and alder forest (with alder, birch and willow trees). Well-preserved wet coniferous forests and boggy coniferous forests deserve special attention. The parts of the primeval forest which are most valuable for natural reasons
have been covered by nature reserve protection. Lavish flora includes many boreal and relic species, such as shrub birch, yew, bog bilberry, twinflower or sundew\(^6\).

![Photograph by A. Grajewska, *Puszcza Augustowska*](image)

The Knyszyn Primeval Forest is one of the three great primeval forests of Podlaskie Voivodeship, apart from Augustów Primeval Forest (in the north) and Białowieża Primeval Forest (in the south-east). The Knyszyn Primeval Forest is located in the north-eastern part of Poland. It lies within Podlaskie Voivodeship, on the territory of Białystok and Sokółka Poviats\(^7\).

It is a great forest, encircling Białystok from the north and from the east with a 20-40 km wide strip of land. The whole area of it has been covered with the Knyszyn Primeval Forest Landscape Park (*Park Krajobrazowy Puszczy Knyszyńskiej*), which covers 126 thousand ha

\(^6\) http://www.suwalszczyzna.pl/pol_ver/pol05.htm
\(^7\) http://www.dobrzyniewo.pl/index.php?option=com_content&view=article&id=29&Itemid=28
including the buffer zone. The surface of the Forest is approximately 1,050 km², but it increases every year as a result of afforestation of formerly arable lands. The process is particularly visible in the eastern part of the area.

The Knyszyn Primeval Forest is very attractive regarding its landscape. The forests grow on boggy areas and a few ranges of hills rising from 170 up to 200 meters above sea level. These are: Wzgórza Świętojańskie (with góra św. Anny), Góry Krzemienne, Góry Leńce, Łysa Góra and Góry Czumożowskie. The tree stand mostly includes pine and fir, there are also birch, alder and oak trees. In the Knyszyn Primeval Forest, there have been bison refugia since 1974\(^8\).

It is the only area in the Central Europe similar to south-western taiga in many respects (structural, geobotanic or zoogeographical one). Varied lie of the land and related considerable microclimatic, hydrological and soil differences, even if they occur on little areas, promote the development of a big number of plant complexes. The flora is characterised by the occurrence of subboreal clusters and a considerable share of boreal species with a predominance of fir in forest complexes\(^9\).

Within the territory of the Knyszyn Primeval Forest, 23 forest and shrub complexes have been found. The most common are: \textit{Carici digitatae-Piceetum} fresh coniferous forest, \textit{Serratulo-Piceetum} mixed forest and \textit{Peucedano-Pinetum} fresh pine forest\(^{10}\).

\(^9\) [http://www.naszapuszcza.republika.pl/puszcza.html](http://www.naszapuszcza.republika.pl/puszcza.html)

Natura 2000 and forestry

The fact of Poland joining the EU, resulting in the adoption of the “Habitats” Directive and the “Birds” Directive and creation of the European Ecological Network Natura 2000, mostly met with reluctant reactions of foresters and with their reservations concerning justification of proposing particular areas for inclusion in Natura 2000 network.

In the years 2006-2007, general wildlife inventory was taken by the State Forests, preceded by individual Regional Directorates of the State Forests preparing bibliographies concerning habitats and species included in the aforementioned EU Directives. Determination of areas of Natura 2000 network resulted in activation and integration of actions of nature protection services, units of the State Forests, local self-governments, non-governmental organizations, naturalists and scientists. The general inventory, apart from causing positive mobilization of over 7,000 people, contributed to the development of a sizeable database. Currently, more than 2,500,000 ha of forests constituting in SPAs (Special Protection Areas) and SACs (Special Areas of Conservation) are included in the network of Natura 2000. The conditions for providing proper protection are well-known but in order to meet them, practical solutions must be found. So irrespective of varied views concerning the number, size and localization of areas of Natura 2000 network, foresters currently face the challenge of the necessity of establishing the principles of managing those areas in accordance with the spirit and letter of the EU Directives.

The basic analytic and planning document in forestry is the forest management plan. Pursuant to Article 32 section 4 of the Environmental Protection Act, on the territory managed by The State Forests National Forest Holding included in an area of Natura 2000, natural protection tasks shall be realized autonomously by the local forest district manager in accordance with the provisions of the plan of protection tasks or the plan of protection of the Natura 2000 area considered in the forest management plan.

Possible influences of forestry on Natura 2000 which require environmental impact assessment include:

- Target management types of tree stands and recommended species compositions may be at variance with tree stands appropriate for forest natural habitats or contain foreign species – then forest management would cause a deviation of the natural habitats’ tree stands;
• The types of forest cutting provided for in the plan may not guarantee “reproducibility” of forest natural habitats;
• The plan of cutting may cause changes in the tree stands structure, which leads to changing the properties of habitats of species, and a loss of mature tree stand forms may reduce the biological diversity related to them;
• Afforestation of valuable non-forest habitats, e.g. moors.

Forest management on the areas of Natura 2000 should ensure conservation of habitats and species in the proper condition by means of:

• Identifying negative impacts,
• Planning protection in forest habitats,
• Establishing the goal of protection: what type of habitat shall be the target one,
• Establishing the principles of management taking into consideration the achievement of the proper level of protection,
• Protection of species,
• Excluding from use the most valuable fragments of tree stands, as well as individual trees, and leaving them until their natural death and decomposition.

General principles of forest management aimed at keeping natural habitats in the proper condition can briefly be presented as follows:

■ Caring for maintenance or restoration of varied age structure of the forest (use of complex forest cuttings with extended restocking periods),
■ Natural restocking of tree stands with a guarantee of retaining accessory species in the composition,
■ Ensuring life space for as many living species as possible (among other things, by leaving old hollow trees and ancient forest clusters until their natural death as well as leaving big enough biomass of dying trees and coarse woody debris),
■ Identification of patches of priority natural habitats which need to be passively protected and in which exploitation should be abandoned,
■ Creating model (reference / demonstrational) surfaces of each natural habitat protected in a given Natura 2000 area.

Promotional Forest Complexes are especially predisposed to take over the role of Natura 2000 areas, as their main goals include:

■ Conducting forest management on the basis of thorough recognition of the condition of a forest biocenosis;
■ Permanent maintenance or restoration of natural values of the forest with the methods of rational forestry conducted in the ecological way;
■ Promotion of multi-function and sustainable forestry.

Integration of the goals of permanent forest management and active nature protection – principles of management occurring in them should not differ considerably from the ones that are expected as obligatory within Natura 2000 areas\textsuperscript{11}.

Some difficulties in conducting forest management may, however, occur as a result of the necessity to protect plant and animal species listed in Annexes to both Directives. Some of them are:

■ Restriction of forest works is necessary in particularly determined regions in the time of raising young ones,
■ In order to maintain habitats for specific fauna and flora, it is necessary to leave some of the dead trees,
■ When conducting thinning and timber harvesting, it is necessary to avoid removing trees already inhabited by any of the species listed in the Annexes to the Birds Directive and Habitats Directive,
■ It is important to maintain sufficient area of ancient forests and convert monocultures into tree stands conforming to the habitat forest type\textsuperscript{12}.

\textsuperscript{11} Natura 2000 w leśnictwie – nieporozumienia, osiągnięcia, wyzwania, J. Lesiński, J. Bodziarczyk, M. Ciach, K. Staszyńska Studia i Materiały Centrum Edukacji Przyrodniczo-Leśnej 2009, p. 204.
\textsuperscript{12} Ibidem, p. 205.
Summary

Forest complexes located within the areas covered by the ecological network Natura 2000 must be managed in an appropriate way. The European Union requires observing the strategy based on multi-function forestry. The idea included in it integrates all the important benefits forests can give the society, mainly referring to economic and ecological aspects. Especially in Podlaskie Voivodeship, sustainable management of forest complexes is important due to their size and the variety of natural habitats. Combining their protection and forest management necessitates many compromises and the development of individual solutions appropriate for particular areas.
Bibliography

Literature selection


Websites selection

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