

PREDICTIONS REGARDING THE IMPACT OF THE FOREST MANAGEMENT PLAN ON ENVIRONMENT AND NATURA 2000 AREAS IN POLAND IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

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Abstract

Keeping the forest management on the principles of sustainable development and management of its resources in the context of environmental protection requires many compromises. The emergence of subsidiary form of protection the nature in Poland, which is the network of Nature 2000 areas, has helped to increase the number of issues that will require such compromises. Forest management must now take into account the functioning of the Nature 2000 network. To prevent conflicts between foresters and naturalists in all tasks contained in forest management plan, the basic document concerning forest management, the impact of these provisions on the environment and Nature 2000 areas is performed. It was also legitimate under the Act of 3rd of October 2008 'About sharing information about the environment and its protection, public participation in environmental protection and the environmental impact assessment'. Creating this kind of document is to anticipate potential conflicts, enable the negotiations and determine solutions suitable for environment and for forest management. This article presents a procedure for creating the forecast of impact of forest management plan on the environment and Nature 2000 areas for each Forestry Division and describes the issues contained therein.

Key words: forest management plan, Nature 2000, forecast of impact.

Introduction

The way of conducting the economy of forest resource in Poland is unique when viewed from the perspective of the remaining European Union member states. All forests that belong to the State Treasury are managed by a single institution – State Forest Enterprise “State Forests”. The current Director General of State Forests writes about this institution on the Internet page: *“We keep an eye on forest biological diversity, protect them against many threats – natural disasters, insect plagues, tree diseases, fires, contamination - as well as consequences of poaching and vandalism. In this way, we do not only take care of nature but also make it possible for Poles to use these goods safely – safely both for them but also for forests. We also make every effort to ensure that forest economy which supplies the marketplace with this universal ecological raw material – timber – is conducted in accordance with principles of sustainable development taking into consideration all functions which forests fulfil. This is corroborated, among others, by international certificates in possession of all regional directions of State Forests.”*

Forest management is based on one basic document which is prepared at 10-year cycles for each forest district and which is known as

forest management plan. The document contains a general description of forests administered by a given forest district, list of planned fellings as well as the remaining operations associated with forest economy.

The Bill on the access of information about the environment and its protection, participation of the society in environmental protection and assessment of the impact on the environment which came into effect in 2008 requires the plan developer to carry out evaluation of this plan on environmental components and on the Natura 2000 regions.

Legal Bases

The preparation of the assessment and prediction of the influence of the forest management plan is required under Art. 46, clause 4 of the above-mentioned Bill and it is also the main legal basis for the development of this document. This Bill introduced into Polish legislation the following directives of the European Union:

- Council Directive 79/409/EU from 1979 about protection of wild living birds, known as the Bird Directive;
- Council Directive 58/337/EEC from 1985 regarding the assessment of the consequences exerted by some public

and private enterprises on natural environment;

- Council Directive 92/43/EEC from 1992 regarding the protection of natural sites and wild fauna and flora, known as the Site Directive;
- Directive of the European Parliament and Council 2001/42/EU from 2001 regarding the impact of some plans and programs on the environment;
- Directive of the European Parliament and Council 2003/4/EU from 2003 regarding public access to information concerning the environment.

Moreover, the prognosis also takes into consideration domestic legislation concerning natural and environmental protection, among others:

- Environmental Protection Bill of April, 16th 2004 [1];
- Forest Bill of September, 28th 1991 [2] and appropriate regulation issued in connection with this Bill.
- In addition, appropriate legal acts of the nature of international agreements are also taken into consideration, including:
- Paris Convention concerning protection of world cultural and natural heritage adopted in Paris on November, 16th 1972.
- Bonn Convention about protection of migrating wild animals prepared in Bonn on June, 29th 1979; adopted in Poland in 1995.
- Bern Convention about the protection of wild species of European flora and fauna and their sites prepared in Bern on September, 19th 1979.

This large number of documents to be taken into account in the prepared prognosis is to guarantee multi-dimensional perspective of the requirements of the objects of protection seen in different scales.

It is also worth mentioning that the following two procedures are to be involved when carrying out the assessment and prognostication of the impact of the developed forest management plan:

- Simplified, which refers to plans already in force;
- Full, which refers to future plans.

The difference between the two procedures consists in the omission, in the case of the

simplified procedure, of social consultations. This is necessary due to time limitations.

Data Sources and Methodology

Data sources needed to prepare the prognosis should be divided into two types. The first of them includes data regarding information about the state of forests in a given forest district, about form of protection occurring in this forest district as well as planned activities within the framework of forest economy. This information can be found in the forest description and the Nature Protection Program prepared simultaneously with each forest management plan for each forest district. In addition, these data are updated with information from appropriate Regional Directions of Environmental Protection. The second type of data comprises information concerning the Natura 2000 network obtained within the framework of inventory of protection objects as well as data found in standard data forms (SDF).

The collected information is gathered in databases. Bearing in mind the huge amount of information, it is practically impossible to carry out the analyses at this stage and, therefore, in the course of the next phase certain simplifications are performed in order to facilitate further analysis. It is also essential to recognise the entire collected material and exclude potential mistakes so that the database is as adequate and as faithful as possible. At this stage, mutual linkages of the forest management plan with other planning documents of different character and rank which can affect the nature of impacts and, consequently, the nature of the performed assessment are also taken into account.

The consecutive phase of the elaboration of the prognosis is the description of the forest resources of a given forest district: beginning with such basic data as woodiness and ending with such details as, among others, proportion of mature forests. In this part, also all forms of nature protection employed in a given forest district are taken into consideration. Natural-forest values of the forest district determined in this way are collated with the requirement of forest economy. On this basis, within the scale of a specific forest district potential collisions between protection requirements and management of timber resources are determined.

Another important issue dealt with in this

part of the document refers to potential consequences for the environment of non-performance of activities planned in the forest management plan. They are viewed broadly taking into consideration consequences for the forest environment, nature condition as well as for the forest economy and local population.

Analysis of interactions between clauses in the Forest Management Plan and Environment and protection objects

The analysis is conducted in two stages. The first of these stages concerns interrelations between specified components of the natural environment, whereas the second one is closely connected with the Natura 2000 network.

With regard to the effect of the clauses of the forest management plan on the environment, its main components which were selected by way of negotiations between organs of nature protection and General Direction of State Forests are taken into consideration. These include:

- Biological diversity,
- People,
- Plants, animals and mushrooms, including species which are particularly protected.
- Water,
- Air,
- Surface of the earth,
- Landscape,
- Climate, natural resources, monuments and other object of material culture.

For the listed environmental elements, their interactions with activities listed in the forest management plan are determined. Individual interactions are identified, their character and scope are determined and assessment is carried out. A negative assessment of a given impact results in seeking new, alternative solutions or ways of limiting the negative influence of the character influence.

In the course of further analyses, the impact of specific clauses of the forest management plan on areas and objects of protection within the Natura 2000 network is taken into consideration. Site and bird areas are considered separately and - within the framework of site areas – sites and species separately.

With regard to sites, considered as protection objects in a given area of the network, their range as well as activities planned on the surface are determined. This information

is collated and next an analysis is performed which should take into account:

- The character of action,
- Scale of impact on the site,
- Determination of direct consequences as well as long-term effects.

The assessment is carried out on the basis of the performed analyses but also taking into consideration information about the state of sites after the termination of the current plan, changes in their structure associated with the passage of time and activities connected with the realisation of the plan.

A similar analysis is performed for species under protection within the framework of the Natura 2000 network. This analysis is carried out in different scales, depending on the kind of the occurring species: surface, linear or point. This makes it possible to take into account, in an appropriate way, the area of individual species and to determine more accurately the scale of influence of a given clause on a species.

In the case of areas of special bird protection which are established on the basis of a separate directive, the analysis is similar as in the case of other protected species within the network framework.

With respect to all objects of protection, the form of action and, consequently, the character of interactions resulting from it and the planned activities should take into consideration individual requirements of each site and species because, only in this way, it is possible to guarantee them appropriate conditions for functioning. The Site Directive clearly indicates that the care alone regarding the maintenance of objects of protection in their current state is not enough. What is required are appropriate actions aiming at improving conditions for the functioning of the protection object and making it possible for them to develop in a way which will ensure safety of their survival.

An aspect considered separately is the influence on integrity, both internal as well as external, of individual areas and the entire network in a given region. Here, the impact of operations included in the forest management plan on the maintenance of area boundaries, complexity of site patches and species acreages is taken into consideration, whereas in the scale of network – possibilities of migration between individual sanctuaries as well as the existence of ecological corridors.

In conclusions, interactions of forest management plan clauses in the form of matrixes are collated with individual groups of protection objects and then the assessment of the impact is determined in a codified manner. This yields a picture which is simple and easy to interpret. In addition, protection recommendations are formed which should be taken into consideration not only in the course of actions associated with timber resources management but also during the realisation of other economic tasks on the entire area of a given forest district.

Solutions aiming at minimising negative impacts

In situations when impacts of negative nature are identified, actions are recommended aiming at limiting their effect or application of alternative solutions is proposed. Suggestions of such solutions take into consideration, primarily, the good of the objects of protection, whereas economic requirements are treated as second priority needs. In such cases, suggestion of good recommendations regarding how to avoid conflict of interests is very difficult. Frequently, it requires compromises and, sometimes, even concessions on the part of the property administrators, i.e. foresters. This part is based most clearly on principles of sustainable development because both requirements of nature protection and forest economy should be taken into account here. Some actions characterised by negative nature in relation to objects of protection are advantageous from the point of view of timber resource management and are universally acceptable. However, sometimes their modification is indispensable. In such situations, discussions and negotiations between the parties involved are arranged. Nevertheless, it should be emphasised here that the institution of the State Forests considers actions associated with nature protection among its top priorities.

Recapitulation on overall evaluation

This part of prediction constitutes formulation of conclusions on the basis of the

performed analyses and, at the same time, it presents a very general recapitulation of the entire document. The conclusion contained in this part of the document is, at the same time, an assessment which exerts influence on the approval of the entire forest management plan or the need of its correction. In the case of forest management plans which are already in the course of realisation and for which the so call simplified assessment procedure was applied, no serious changes are possible. Therefore, in such situations, it is recommended to realise such activities within the framework of the plan which will take into account safety of the objects of protection in those areas where, in the course of performed analyses, threats were recognised. For plans for which the assessment is carried out still at the stage of their development, changes are possible, therefore in such cases the requirements of the objects of protection can be taken into consideration more fully.

The above presented concept of prognosis of the impact of the forest management plan on the environment and the Natura 2000 areas was developed at the Office of Forest Management and Forest Geodesy, branch in Brzeg which is, at the same time, a contractor preparing forest management plans for forest districts which belong to regional directions of the State Forests in Wrocław and in Katowice. The presented concept is still being supplemented and improved so as to make this document most adequate to the requirements understood as the necessity to execute forest economy realising that, on the one hand, it is one of the elements of Polish national economy but, on the other, it is also important to remember about the needs to protect nature resources. This means that the optimal solution is to adopt principles of sustainable development for the benefit of all parties involved.

References

1. *Law Gazette* 2009, No 151, pos. 1220
2. *Law Gazette* 1991, No. 101, pos. 404