



EDITORIÁL – EDITORIAL

This monothematic issue of *Lesnícky časopis - Forestry Journal* is focused on “**Disturbance and post-disturbance processes in forest ecosystems**” and addresses a problem that is up-to-date not only in Central Europe, but almost in all parts of the Earth. This is related to the fact that the existence or further progress of human society can be achieved only if the implementation of the sustainable development strategy is ensured (according to the concept declared at the global conference “on environment and development” in Rio de Janeiro already in 1992).

Also the most recent so-called “Post-2015” UN agenda, which was approved by the Member States at the meeting in New York in September, puts the main emphasis on the sustainable development of society. The objectives of the UN in the agenda focus on these areas: eradication of poverty, and hunger; ensuring a healthy life, education, water sufficiency, affordable energy, consumption and production, justice, gender equality, economic growth, resilient infrastructure; reducing inequality between countries; creating sustainable settlements; immediate actions to combat climate change; preserving oceans and seas; protection of terrestrial ecosystems; promoting sustainable forest management; combating desertification; and strengthening global partnership. As can be seen from this list, a number of goals are related to forests and forestry. In other words, it proves that forests and forestry play an important role in ensuring sustainable development of society in the economic, environmental (ecological), and social areas. The conservation, protection and promotion of forests are imperative for the whole humanity on the globe, in particular for governance structures of individual states, or their communities.

These priorities can be easily declared at the highest levels, but the actual development does not follow this direction. As we know, the forested area is being reduced at a global scale. Plundering of forests coupled with biodiversity loss or with the reduction in the amount of sequestered carbon continues mainly in poor countries. Due to the climate change, the aggression of harmful factors is also rising. The existential conditions of forest ecosystems are changing. Their ecological and static stability is being reduced. This results in a huge increase of disturbance events in forest ecosystems caused by natural factors. Abiotic factors are in particular detrimental to forest stands as they damage them both mechanically (breakages most often induced by wind, snow, and icing) and physiologically (particularly drought, water-logging, extreme temperatures, frost). There are also harmful biotic agents (vertebrates - predominantly ruminant hoofed game, undesirable vegetation, fungal pathogens, and insects). Anthropogenic harmful factors form a specific group. Men damage forests directly or indirectly, intentionally or unintentionally. This kind of damage can differ in its character. Its consequences also vary significantly. Negative events may occur after faulty forest management activities, or other economic activities of the country (e.g. agriculture, mining and quarrying, industry, engineering structures, recreation, or other events in the country, e.g. fire). Most of the harmful agents interact, and their effects on plants and stands are combined; most frequently they complement, condition each other and merge.

In general, we can say that due to the climate change, forest management, mainly forest protection against harmful factors, has got into a new and a very unfavourable situation. It should be noted that a lot of so far valid and in practice verified knowledge about the conditions and activation of harmful agents has changed. A similar situation is also in the case of the disposition of tree species and forests to damage - risk of plant damage by harmful factors has increased as a result of changes in natural conditions. This is based on the knowledge that the conditions for tree damage result from the actual tree properties and environmental conditions, which allow a harmful agent to activate, or to acquire such an activity of its aggression that it can attack its object. The conditions for stand damage depend on a set of dispositive properties of trees (tree species), their structural arrangements, and syn-ecological relations that govern forest ecosystems. Following the concept of prof. Miroslav Stolina, who was the pioneer of forest protection in Slovakia, stand (tree) damage occurs under such circumstances (impacts of natural or anthropogenic factors), which activate the dispositive properties of a stand (or a tree) and at the same time the aggression of a harmful agent reaches such an intensity that it is able to overcome the current system of natural barriers of a stand (tree).

For these reasons, it is very important to clarify disturbance and post-disturbance processes in forest ecosystems, which is the main goal of this monothematic issue. In Slovakia, it is a pioneering work, or the first attempt aimed at initiating solving this serious problem. The results should form the basis (theoretical foundation) of forest management concept, in particular their practical protection under changed environmental conditions.

From the undertaken research we selected five original scientific works of the researchers from the Czech Republic, Hungary and the Slovak Republic. The authors from Slovakia and the Czech Republic focused on the disturbance processes in spruce forests caused by mechanical activities of abiotic harmful factors (mainly wind, snow and air pollution) and bark beetles, and on their mutual relations. In terms of natural conditions, the

research was carried out in the Western Carpathians and in the Czech massif. It should be noted that in these countries disturbance of spruce ecosystems caused by harmful abiotic factors, in particular destructive wind, and bark beetles (usually Spruce bark beetle) has been the most serious problem from the point of preserving, protecting and enhancing forests. The situation in Slovakia has recently become especially adverse, since after the wind-throw in November 2004 calamitous bark-beetle outbreaks have occurred. Particular attention is also paid to post-disturbance processes (after the wind-throw and bark-beetle outbreak), mainly to the quantification of the net primary production of the above-ground part of tree vegetation at the territory of the Tatra National Park (Western Carpathians). From other natural conditions of the warm Pannonian basin (Hungary), we present the results evaluating the restitution of the pedunculate oak, Turkey oak and beech after the repeated defoliation caused by the Gypsy Moth. The presented monothematic issue also contains two reports about the harmful agents and salvage felling in the forests of Slovakia, and about the results of the evaluation of the development of abiotic damage of spruce forests in the in the Krkonoše Mts. and Moravian- Silesian Beskids.

As we said, the papers are scientific works dealing with natural disturbance and post-disturbance processes in forest ecosystems. In the future more attention should be paid to the impact of anthropogenic activities on these processes, or to the search for possible protective and defensive measures. The situation needs to be dealt with also because at the moment two opposing concepts or opinions stand up against each other. One considers disturbance processes in forest ecosystems as their intrinsic property. Based on this it concludes that there is no need to intervene in forest ecosystems, but rather to let everything on self-development. The second concept speaks about the need to implement protective and defensive measures in order to preserve ecological and static stability of forest ecosystems, or to maintain the aggression of pests at a threshold of economic bearing capacity. According to the author of the Editorial, the first concept, and mainly its large-scale implementation in Central Europe, is in conflict with the strategic forestry goal, which is the “balanced fulfilment of the economic (production), environmental (ecological) and social functions of forests”. Due to the application of the so-called “passive forest protection”, the Czech and the Slovak Republics have already encountered great economic and ecological losses. We can name the examples from the Bohemian Forest (Czech Republic), as well as from the High and the Low Tatras (Slovak Republic).

Finally, it should also be noted that the implementation of “active forest protection” was fostered by the Conference on Environment and Development in Rio de Janeiro, where it was among other things agreed that the “precautionary principle” needs to be respected. Forestry society as well as the general public must realise that forest protection against almost all harmful factors must be ensured firstly by respecting fundamental principles of long-term forest management. Among them, it is mainly the principle of forest stability (its intentional increase, and recovery measures in already affected stands) and ecologisation (respecting environmental laws in forest management). In other words, it means increasing the resilience potential of forests by the right selection of tree species, suitable stand structure and maintaining good health conditions. Of course, the climate change should also be taken into account, as it increases the risk of forest damage by harmful agents. Therefore, it is necessary to implement all preventive, protective and defensive measures of forest protection much more intensively.

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