PLANNING NATURE CONSERVATION IN THE PROTECTED LANDSCAPE AREA "NORTHERN GAUJA"

Specially protected nature territory, landscape area "Northern Gauja" was established to ensure favourable conservation status of endangered species and habitats of the national and European importance. Protection and management planning of the area is directed towards keeping the balance between species and habitats protection regime and other priorities of the site, such as landscape and heritage conservation, nature resource use and sustainable development of the area.

Different species have different requirements towards habitats, some of them do not tolerate intensive use of habitats. Therefore, commercial activity restrictions at different levels and special measures for the species and habitat conservation need to be taken in "Northern Gauja". Two main steps should be taken to ensure that. First, management plan, setting protection and management objectives and laying down descriptions of management activities required for the conservation of nature values is being developed. Plan has recommendation status; the Minister of Environment shall approve it. Second, "Individual Regulations on Site Protection and Use" stipulating protection regime of the area are being prepared. These regulations have to be approved by the Cabinet of Ministers. Both above mentioned documents are being developed within the scope of the project "Protection and Management of the Northern Gauja Valley", implemented by Latvian Fund for Nature.

NATURA 2000

Life

Formation of a protective zone

Forest at the river bank

Photo: A. Petrins

Glaucidium passerinum

Photo: V. Jurmanis

Specially protected forest habitat

Ortophoto of the State Land Service of the Republic of Latvi

Breeding sites of specially protected bird species

Specially protected forest habitats

Interface zones with waters and wetlan

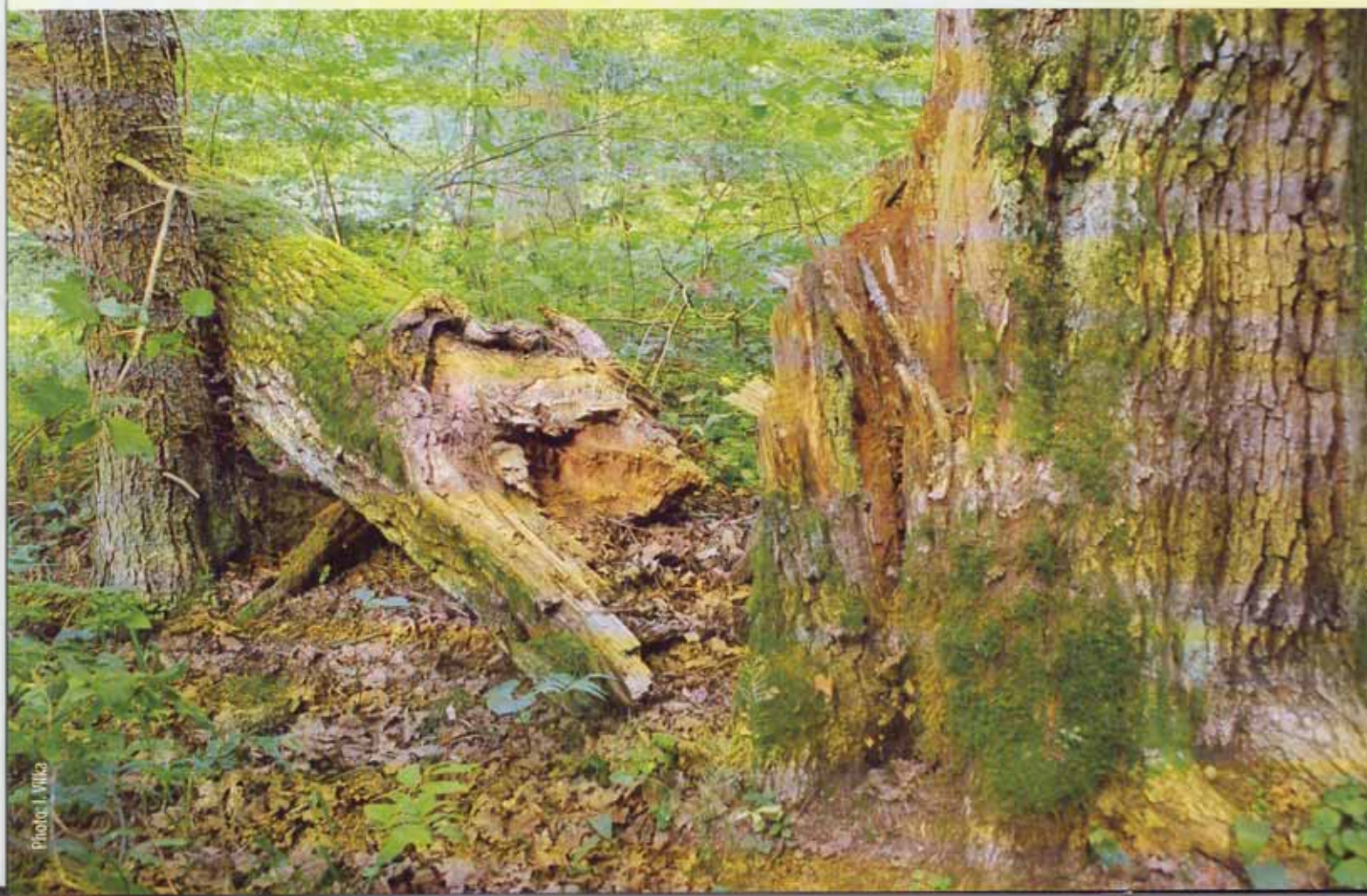


Photo: I. Vilka

Areas for protection of vulnerable species and habitats (strict nature reserve zone, nature reserve zone, micro-reserves)

Usually the forest stands with vulnerable habitats and species require the most strict commercial activity restrictions. In general protection of such habitats means no human disturbance in their succession. There is whole set of conditions important for each of endangered species which can include sufficient habitat area, the distance from the closest similar area, requirement of no disturbance during breeding period and special microclimate. For example, for the breeding of endangered forest birds occurring in "Northern Gauja" required conditions are as follows:

- Appropriate breeding sites – old branchy trees for eagles and black stork *Ciconia nigra* to build nests and, snags of large diameters or large hollows for ural owl *Strix uralensis*, hollows for pygmy owl *Glaucidium passerinum*, Tengmalm's owl *Aegolius funereus*, decaying or dead trees for woodpeckers to peck the hollows;
- Appropriate feeding sites in the vicinity of nest (wetlands for black stork *Ciconia nigra*, grasslands for lesser spotted eagle *Aquila pomarina*, water bodies for osprey *Pandion haliaetus*, sufficient amount of decaying trees for woodpeckers);
- No disturbance in the nest surroundings (in the stand where the birds breed and in the surrounding stands) (as regards to the species, sensitive to disturbances – black stork *Ciconia nigra*, osprey *Pandion haliaetus*, lesser spotted eagle *Aquila pomarina*);
- Lek sites (sparse forest, no disturbances) for capercaillie *Tetrao urogallus*.

Ciconia nigra. Requires old trees with large branches for nesting and no disturbance during breeding period

Photo: A. Petriņš

In situations when habitats of conservation concern cover small areas or they are sparsely located micro-reserves for their protection are established. But where nature values concentrate (for example, various endangered habitats and habitats of especially protected species overlap, as well as interface zones with waters), it is essential to establish larger protected areas – nature reserve zones (illustration in the previous page). Establishment of such zones is more important than protection of separate individual compartments. For example, thus species with low dispersal ability are not endangered due to fragmented habitats. With larger protected area for endangered birds their options for choosing the nest tree increase, they suffer less from disturbances during the breeding period. In addition to especially valuable compartments within strict regime zones also areas between them should be included which in the nearest future could evolve to specially protected habitats or develop as appropriate for specially protected species. Provision of favourable conditions in the sites, where endangered species are concentrated, serves as a base for the protection of these species population in Latvia and in the whole Europe according to the main purpose of the protected area establishment. ■

Dendrocopos leucotos – a species, dependent on availability of deciduous trees (in particular decaying)

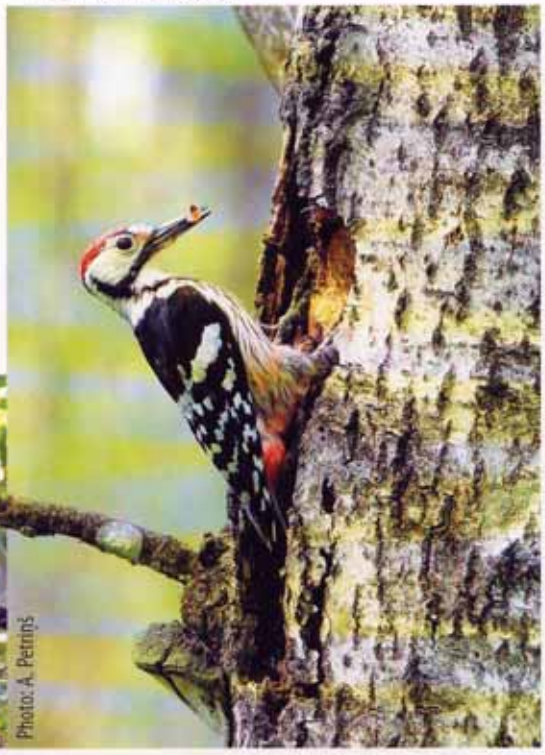


Photo: A. Petriņš

Protection regime and zoning

Areas where limited commercial activities are admissible and management of habitats should be promoted (zone of nature park)

There are species which cannot be protected by conservation of their habitat areas exclusively and their protection is dependent on human activities in wider area. One of those species is the Atlantic salmon. In order to maintain water quality required for Salmonidae fish (to reduce inflow of organic compounds in the Gauja river and its tributaries), forest management restrictions (clear-cutting prohibition), as well as agriculture restrictions (limitation of the area of arable land, prohibition on the use of agricultural chemicals, restrictions of land transformation and construction) are needed in the Gauja valley. An important condition for the protection of the Gauja as a salmon river is a prohibition on building dams on the Gauja and its tributaries.

At the same time it is important to promote certain management activities in the Gauja valley as there occur also such nature values originated thanks to interaction of nature and man. Mainly it refers to grassland habitats and species, which protection requires regular management of meadows and pastures (mowing or grazing) to avoid their overgrowing with bushes and forest.

For the areas with comparatively intact nature and also with advised restricted management activities henceforward, zone of nature park is the most appropriate. ■

Areas of landscape and heritage values (landscape protection zone)

Protected landscape area "Northern Gauja" has an ancient and diverse cultural history. As the most significant sites of cultural history should be mentioned *Celītkalns* in Vijciems, medieval cemetery in Paukuliši, ethnographic farmstead *"Ielicas"* and ancient stone piles in Plāņi parish. Sites of special landscape value are the Gauja valley near Gaujiena, *Randāti* cliffs, *Kankariši* outcrop, old forest roads along the Gauja and inland dunes near Cirgaļi.

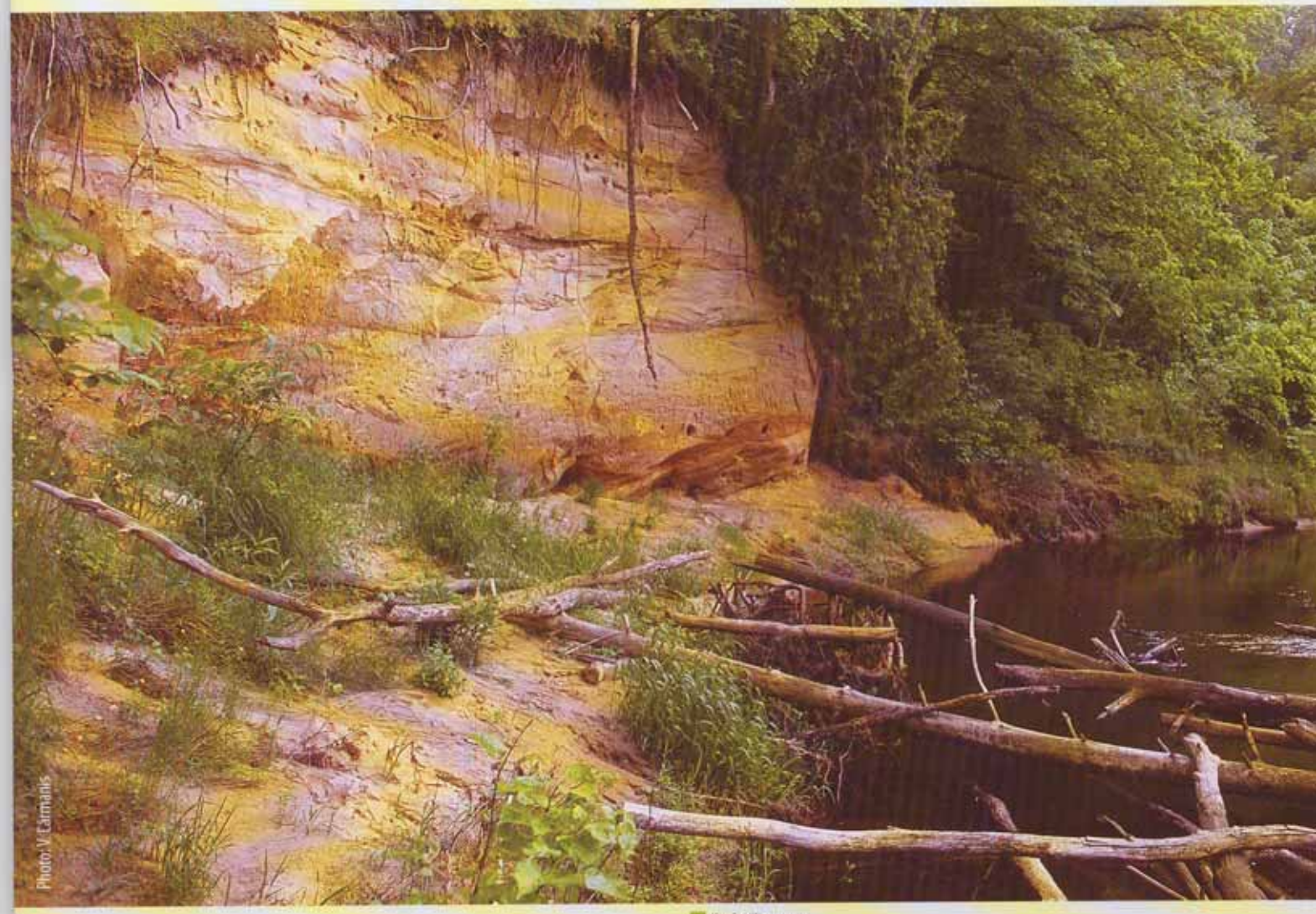
Restrictions of activities endangering typical landscapes and conservation of heritage values are to be planned in the landscape protection zone. ■

Areas with no commercial activity restrictions (neutral zone)

Here are included biggest populated areas within the territory (including Strenči town, Vijciems and Gaujiena villages), also intensively managed agricultural lands outside the Gauja river valley. ■

■ One of the buildings of the ethnographic farmstead "Ielicas"

■ Oak-tree at the Gauja – an important element of the landscape



Kankariši outcrop

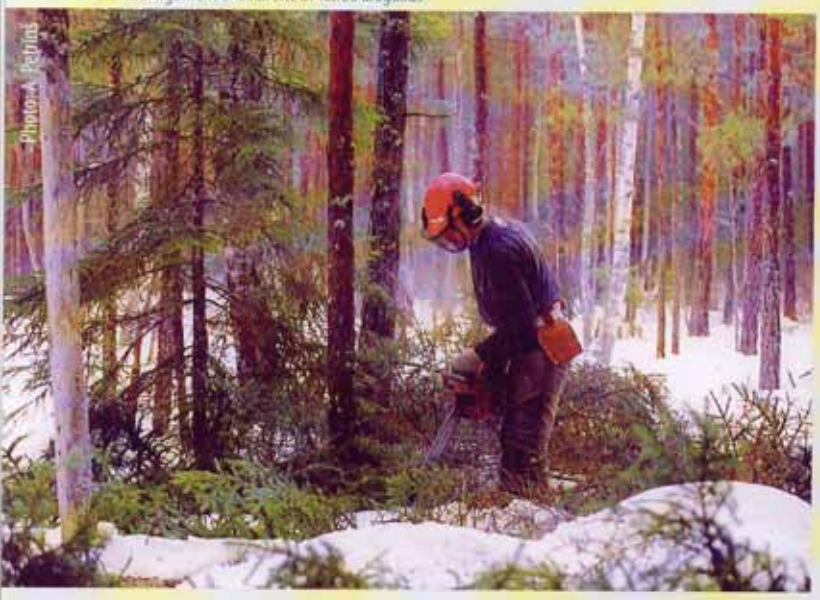
Species-rich dry meadow

Crex crex – a protected bird species, requiring appropriate management of grasslands

Oak-trees, formerly grown in open landscape and currently suppressed by younger trees

Osmoderma eremita – endangered insect species, requiring old deciduous trees with hollows

Management of a lek site of *Tetrao urogallus*



Tetrao urogallus. Requires sparse old pine forests as lek sites and no disturbance during breeding period

Pulsatilla patens – a typical plant species of sparse pine forests

Buprestis mariana – protected insect species inhabiting alight dry pine wood of large dimensions

Measures on nature value protection in the forests

Cutting spruce undergrowth in the pine forests

Due to the increase of air pollution and decrease of the areas of forest fires during the last century as well as melioration activities fertility of the pine forest soil has increased in many places, thus expansion of spruces has been stimulated in these areas. Not long ago the pine forests which used to be sparse have become shadier, the ground vegetation characteristic of light forest and the rare species of insects, adapted to live on alight old pine tree stems and logs are disappearing.

In order to slow down changes in the vegetation endangering survival of several species and originate lighter conditions, it is necessary to carry out controlled burning of the forest ground vegetation or partly imitate the effect of fire by cutting of the new spruce generation. This activity is particularly important in the oldest pine stands, because several of the endangered species require the sunlight and the old trees, dead wood and logs.

Management of old pine forests is planned in the "Northern Gauja" by cutting of obstructive spruce undergrowth. This activity is planned in the areas where the spruces have dispersed in the last decades and primary nature values are related with the old pine trees. That shall not be carried out in the areas where old spruces occur. Several endangered species are connected with old spruces as well. In the areas with biologically valuable old spruces also new generation of spruces should be left, thus taking care of the succession. Likewise, also the succession of pine trees is taken care of additionally removing competitive trees around young pine trees.

Capercaillie *Tetrao urogallus* is associated both with dry and wet pine forests. Capercaillie males during the lek fights need to see one another and thus the forest in their lek sites needs to be sparse. It is necessary also to reduce predation threat to the capercaillies during the lek period (predators often use dense tree groups to approach stealthily). Forest drainage often has stimulated the overgrowing with dense undergrowth, thus in addition restoration of former hydrological regime is necessary by embanking the ditches. ■

Management of old trees once grown in open areas

Fennoscandian wooded meadows and pastures, grazed forests and grasslands with secluded oaks and limes were a part of traditional rural landscape of Latvia still in the middle of the last century. Sometimes it was difficult to discern, where the end of agricultural land and the beginning of forest is. Traditional agriculture formed this landscape. Its influence on the landscape is slightly similar to that of aurochs, bisons and wild horses in prehistoric times; also the species living today on big, old and secluded trees have survived from those times.

Large herbivores are extinct for a long time and traditional agriculture rapidly diminishes as well. Therefore sparser forests in many places have overgrown with thick undergrowth and single trees have been surrounded by young woodland. That endangers light requiring lichens and insects living on the old trees and shortens the life of the old trees themselves.

Cutting of bushes and young trees around the old trees, once grown in open areas, is planned in the "Northern Gauja". This is of utmost importance as significant part of the population of hermit beetle *Osmoderma eremita* in Latvia lives in the hollows of the old deciduous trees in the Northern Gauja valley. Hermit beetle *Osmoderma eremita* is one of the most endangered insect species in Europe. In order to prevent further overgrowing of the old trees, once grown in open areas, with bushes and young forest, these areas should be grazed.

While removing bushes and undergrowth from the surrounding of old trees young deciduous trees should be left as they shall create future generation of biologically valuable trees. ■

■ *Picoides tridactylus* – a species, requiring dead wood (in particular dead or decaying spruces)

Activities envisaged in the management plan

Measures on nature value protection in the grasslands

Unlike forests, grasslands in Latvia are mainly man made and maintained. Interaction between man and nature has been so long that specific grassland communities have appeared and bird species characteristic of grasslands have expanded as a result. Biologically the most valuable grasslands are those continuously managed with ancient methods – not drained, not cultivated, mowed or grazed year after year – so called "natural grasslands". If the grasslands are not managed plant species characteristic of the grassland disappear and bushes and trees spread. There are many places with overgrowing grasslands, however the overgrowth of natural grasslands is going on especially fast, because they are less valuable from economic point of view. In order to stop disappearance of natural grasslands restoration and appropriate management is required which should be done in a way taking care of natural vegetation and avoiding killing of breeding birds during mowing. Natural grasslands are threatened not only by overgrowing but also by intensive agriculture methods: melioration, use of chemical fertilizers, additional sawing of productive grasses and early or frequent mowing. ■

Grassland restoration

After removal of trees and bushes, followed by appropriate management, natural grassland recovers its original species composition within a few years, as there always are, even though in small amounts, plant species survived from the time period before the grassland overgrew. This process is considerably faster than restoration of natural, species-rich vegetation of vascular plants in drained or cultivated grasslands which sometimes can take few decades at least.

There can be different purposes for the grassland restoration. In one case these are grasslands, once wide and open and purpose of their restoration is not only renovation of grassland habitats but also restoration of habitats for birds adapted to open grasslands. Grassland birds (corncrake *Crex crex*, great snipe *Gallinago media*, common redshank *Tringa tetanus*) avoid lines and groups of trees and bushes which serve as perching sites of corvids, they need open homogenous areas.

In the second case these are grasslands where formerly secluded trees or groups of trees and clumps of bushes were found which are regarded as part of diverse grassland. It is important to protect groups of trees and bushes and separate trees in such grasslands. Old grassland trees are always to be protected – oaks, limes, elms etc., as they are important elements of the landscape and habitats for the specially protected species. Other elements to be protected during grassland restoration are junipers, crabapples, older goat willows, buckthorns, spindle trees. Also young broad-leaved trees should be left as they will form new growth of biologically valuable trees. In the bloom trees and bushes are of particular importance for insects; in fruit they attract various birds and other animals and all year around they serve as hiding place for animals. ■

Grassland management

The most appropriate management of natural grasslands is mowing at least once in a two years or grazing. To reduce the risk of killing the animals,

mowing must not be done from the sides to the middle of field as it advances concentration of animals in constantly decreasing part of grassland which has not been mowed yet. A way of mowing taking care of animals is mowing from the middle of the grassland or from the one side of the grassland to another, as well as mowing not lower than at 10 cm height. To protect birds and their nests it is advised to mow as much as possible late in summer, leave belts or slopes of ditches without mowing for the birds to hide, as well as to mow the grassland at several goes (in few days). For the nature diversity the best option would be to leave each year part of grasslands (for example, 1/3) without mowing (and mow it in the next year).

If the mowed grass is not meant for hay and grass chopper is used, then mowing is not advised earlier than in the middle of August because the grass cut earlier quickly rots off and advances soil fertility and wherewith changes in the composition of plant species.

Density of grazing animals in the grassland could not exceed one animal unit per one hectare, otherwise the grazing area can get overgrazed, also increases probability that animals will stamp down nests of grassland birds. It is advised also to include forest edges in the grazing area or even individual forest compartments to advance formation of habitat for the species related to sparse, light forests. ■

Restoration of a wooded meadow

Hapalopilus croceus – rare species of fungi, inhabiting oaks of an age of several centuries

Mowing of grasslands

Gallinago media – an endangered bird species requiring wide floodplain meadows

Grazing of grasslands

Activities envisaged in the management plan

Monitoring

Aiming to evaluate the effects of nature protection and management measures in the protected landscape area "Northern Gauja" monitoring of the species and habitats (regular assessment of their condition in accordance with the methodology developed by experts) shall be carried out. ■

■ Vegetation monitoring in a grassland management area

Promotion of environmental education and environmentally friendly tourism

Places where attraction of tourists is acceptable and even advisable will be indicated in the management plan. Nature trails, improvement of camping sites along the Gauja river, as well as in some cases cutting of trees in order to expose scenic outlooks will be planned in these sites. ■

Protected landscape area "Northern Gauja"

Project implementer:

The protected landscape area "Northern Gauja" is included in the network of protected territories of the European Union *NATURA 2000*. This network has been established to ensure protection of endangered species and habitats within the framework of Europe, introducing requirements of the "Birds" Directive (79/409/EEC) and the "Habitats" Directive (92/43/EEC).

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