The project "Protection and Management of the Northern Gauja Valley" of LIFE-Nature Programme of the European Commission was implemented in the protected landscape area "Northern Gauja" within the period between 2003 and 2007. The project included:

 Inventory of nature values, planning of their protection and management;



approximately 300 ha



- Purchase of cattle herds and establishment of six pasture territories for grassland maintenance;



Management of protected forest habitats, biologically valuable trees and lek sites of the Capercaillie Tetrao urogallus in the area of approximately 400 ha;



 Non-intervention regime ensured in about 3400 ha of valuable forests.



### Useful internet sites:

Project "Protection and Management of the Northern Gauja Valley", Rural Partnership "Northern Gauja": www.zgauja.lv

North Vidzeme Biosphere Reserve: www.biosfera.lv

Available support for management of grassland and forest habitats:

The Rural Development Programme for Latvia (2007-2013): www.zm.gov.lv

egislation on environmental protection: www.vidm.gov.lv

Legislation on forestry: www.vmd.gov.lv

Management of protected nature territories:

Nature Protection Board: www.dap.gov.lv

Monitoring of observation of legislation on environmental protection:

State Environmental Service: www.vvi.gov.lv

Valmiera Regional Environmental Board of State Environmental Service: www.valmierasrvp.gov.lv

Madona Regional Environmental Board of State Environmental Service: www.madonasrvp.gov.lv

State Forest Service: www.vmd.gov.lv

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Orthophotos made by State Land Service in 2004 have been used

Text: I.Vilka, composition A.Namateva











For thousands of years Gauja has been flowing to the sea and every age has left its marks in the landscape of river valley.

There are, however, nature values, which have remained unchanged from the days of gone - Gauja's flow making steep banks, uncovering sandbanks and leaving old rivers beds.

Landscape on both river banks has changed during the history of civilisation along with changes in the management of Gauja valley.

When the man started farming, areas of forests decreased and were replaced by meadows, pastures and fields. Until the first half of the 20th century, there were a lot more open and park-like areas in Northern Gauja than there are now. It was for the benefit of species connected with meadow habitats such as the Corncrake Crex crex and the Roller Coracias garrulus.

During Soviet times, when agricultural land grew over, territories of forest increased in Gauja valley, thus decreasing the territories of characteristic mosaic landscape. In separate places, for example, in Vireši and Gaujiena municipalities, there were wide and intensely farmed fields; agricultural land was meliorated thus influencing hydrology of rivers and damaging natural habitats of several species of animals and plants.

In 2007 the four-year project of LIFE-Nature programme of the European Commission was finished; the main goals of this project were protection of forests and restoration and management of meadows and pastures in Northern Gauja. Activities implemented during the project along with availability of agri-environment subsidies made their contribution in restoration of mosaic of forests and meadows in one of the most outstanding places in Latvia from the point of view of landscape and nature values.

In what way shall landscapes of Northern Gauja be developed after the project? Will landowners be interested enough in continuing management of meadows and pastures? Will forest protection introduced during the project ensure preservation of endangered forest species?

At the moment Rural Development Programme for Latvia is the most important financial instrument in Latvia supporting management of habitats. In Northern Gauja, similarly as in other places in Latvia, the fate of meadows and pastures shall depend on the fact whether the financing available for maintenance of grasslands is sufficient, as well as on the possibilities offered by other types of management, for example, rural tourism and organic farming which would give an opportunity to restore and maintain viable rural businesses.



# **Geology and Geomorphology**

Contemporary landscape of Northern Gauja started o form during the time when the last glacier melted about 10 thousand years ago, when relief, river network and lakes developed.

Cover of quaternary sediment in the territory of protected landscape area is made mainly of limnoglacial or lake sediments (sand, aleirite, clay) and a bit of mire sediments (peat), aeolian sediments or sediments created due to geologic activities of vinds (sand) and fluvioglacial sediments or sediments created by streams of water during nelting of glaciers (sand, gravel, pebbles).

## Rock Outcrops

On the banks of Gauja and its affluent rivers pre-quaternary sediments are exposed - sandstone and dolomites - which were formed during middle Devonian and late Devonian period, about 397,5 - 359,2 million years ago.

The most impressive dolomite outcrops can be seen n Vireši municipality, the largest is Randatu cliff. The neight of outcrop is 15 m, and the width is 65 m. Dolomite of Randatu cliff has developed when the dolomite formed sediment in lagoons and ice-lakes, as well as of limestone - due to dolomitization process. The top part of Randatu cliff is made of vellowish dolomite, the lower part - of reddish dolomite. In dolomite one can often find evidence of ancient inhabitants of the Earth - fossils of plants and

Dolomite outcrops are not just beautiful; they form an environment with peculiar plants which can be found almost only on dolomite. Nowadays such outcrops are approved as protected habitats. The rest of the iver included in landscape area of Northern Gauja is characterized by sandstone outcrops, the most mportant of which are Rāmnieku outcrop near Strenči and Kankarīsu cliff located at the inflow of River Vija into Gauja.





## Inland Dunes

Sediments of former Strenči ice-lake - sand, aleirites and clay - may be found on glacier sediments in some parts of the territory.

After glacier melted and before vegetation, the territory was exposed to strong north-west winds. Wind moved sands of ice-lake forming inland dunes. Direction of the wind is proved by the fact that creation of dunes has started from their eastern side, where the oldest dunes can be found, and also by cross-profile of the dunes having longer and easier north-west slope and steeper (up to 45 - 50°) lee.

Over the years, pine forest has grown up on the dunes. The largest territories of dunes in Northern Gauja are located in Valka and Zvārtava municipalities; these territories are called Sarkankalni, Mārkalni and Kāršupe kalni

Dunes covered with dry pinewoods are appropriate for many light-demanding species of plants and insects, including the very rare beetle *Tragosoma depsarium*. Dune territory in Northern Gauja includes one of the most important complexes of Capercaillie lek sites in the country (containing 50 - 80 males).



## Meanders of Gauja

For many thousands of years Gauja has meandered, changed its bed and formed oxbow lakes. The total length of oxbows in Northern Gauja Valley in some sections of the river valley exceeds the length of Gauja itself; they are very important for mosaic landscape of Gauja valley and for diversity of habitats. Formation of oxbows is taking place also nowadays.



Meandering is characteristic for Gauja.



When the river breaks through the narrowest place of meander, the stream finds straightest way, while the meander or the previous river bed becomes an oxbow.



When the oxbow completely or partially loses its link with the river, it becomes more like a lake. When these oxbow lakes grow over, alluvial meadows or fens are formed.

Oxbow lakes are characterized by plants and animals characteristic for stagnant waters. Most of oxbows join Gauja during floods, thus ensuring migration of fish from Gauja into oxbows and vice versa. The warm and stagnant water of oxbows serves as a natural "incubator" for young fish. Different species of waterfawl feed in oxbows and breed near them - most often it is the Mallard Anas platyrhynchos and the Goldeneye Bucephala clangula, the Black Stork Ciconia nigra is also feeding here.





Orthophotos with Gauja and its oxbows



(452 km). Protected landscape area of Northern Gauja includes River Gauja with a length of 140 km and its valley from the border of Gulbene and Alūksne districts to Valmiera, as well as Cirgali forest tract and Pukši mire. The total area of protected territory is 21 749 ha.

Most of the landscape area is covered with forests and agricultural land. Forests constitute 72 % and agricultural land - 17 % of the territory. The remaining 11 % include freshwater, mires and populated places, including country estates, villages and the only town in the protected andscape area - Strenči.



Otter Lutra lutra



Up to now 26 protected habitats of European importance, as well as 143 species protected in Latvia and Europe or both have been found in the protected landscape area - 10 species of mammals, 35 species of birds, one species of reptiles and amphibians each, eight fish species, 56 species of invertebrates and 32 species of plants, fungi and lichens.







Woodpecker

Dendrocopos

Gaujiena

medius

**Future Perspective** 

\* Stable areas of protected forest, grassland,

\* Stable and viable populations of protected

\* A beautiful landscape ensuring all the ecological

\* Economic growth balanced with preservation

\* Visitors of the territory having new impressions

and knowledge about nature of Northern Gauja.

\* Population proud of their environment;

mire and water habitats:

species;

Valka

of nature values;

# The most important nature protection activities

planned to be financed in the framework of the Rural Development Programme for Latvia (2007-2013)

### As regards forests

# Measure 224: Natura 2000 payments (to forest

Compensations for restrictions of economic activity (forestry activities forbidden; final felling and thinning forbidden; final felling forbidden; clear cutting forbidden) in private and municipal forests and forest land situated in Natura 2000 territories.

### **Measure 225: Forest environment payments**

The objective: to encourage preservation of biodiversity and high value forest ecosystems. In the framework of this activity it is planned to support 4 sub-measures very important for nature

- Management of forest key habitats and lek sites of the Capercaillie
- Diversification of structure of forest stands;
- Forest pastures;
- Protection of structures generated by fire. Implementation of the activity is planned as from

### As regards tourism sector

## Measure 313: Encouragement of tourism

Encouragement of tourism activities includes the following support:

- For improvement and establishing of nature
- For construction and reconstruction of waste water treatment facilities and sedimentation wells. as well as for replacement of slate roofing with that of environment-friendly materials in rural landscapes. Extensive grazing and late mowing is guest houses.



### As regards agricultural land

Measure 213: Natura 2000 payments and payments linked to Directive 2000/60/ECC An annual compensation payment to offset restrictions of economic activity in utilized agricultural areas located in Natura 2000 territories. Payments are related to permanent meadows and

### Measure 214: Agri-environment payments, sub-measure "Maintaining biodiversity in grasslands"

The objective: to encourage conservation of biodiversity grasslands and maintenance of wild plants, wild animals, bird populations and

