

The Environment of the Masuria Lakeland & Biebrza National Park, north-eastern Poland

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Introduction

- Masurian Lakeland and Biebrza National Park – wetland ecosystems of the North-Eastern Poland
- Uniqueness of the biodiversity of the area
 - richness of species diversity
 - rare types of species
- Beavers – example of rare species of the European environment
- Environmental problems: changes of land cover types (encroachment of reeds, willows and birch), habitat drainage

Masuria Lakeland

- ✓ Masuria region, located in north-eastern Poland, has the second in the world density of lakes
- ✓ Masuria Lakeland – an area of more than 2000 lakes, interconnected with each other through a series of natural channels & rivers,
- ✓ Gizhicko Gmina – our research region within Masuria (Wilkasy, Gizhicko district)

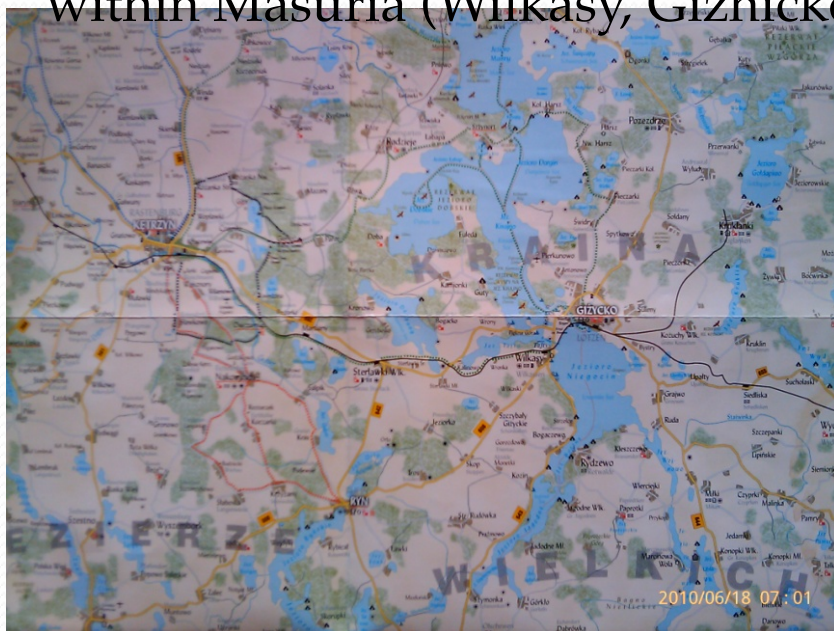


Fig.1. Wilkasy, Gizhicko district

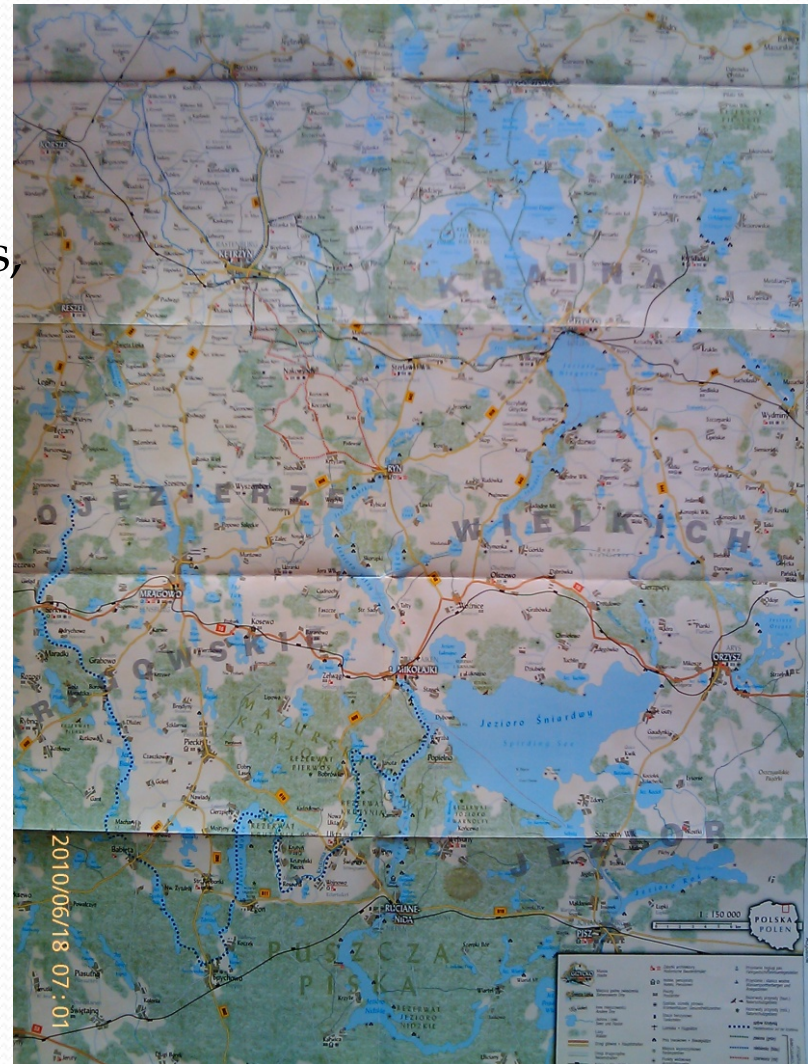


Fig.2. Great Masurian Lakes (Wielkie Jeziora Mazurskie)

Landscapes of the Mazuria Lakes and surroundings

Some large lakes:

Jeziro Sniardwy,

Jeziro Niegocin,

Reservat Mokre - *Jeziro Dargin,*

Reservat Jezero Dobskie - *Jeziro Dobskie,*

Reservat Wyspy - *Jeziro Mamry*

Landscapes of the Mazuria are very diverse.

Pine forests, lakes, wetlands, mixed forests and other ecosystems with different types of vegetation

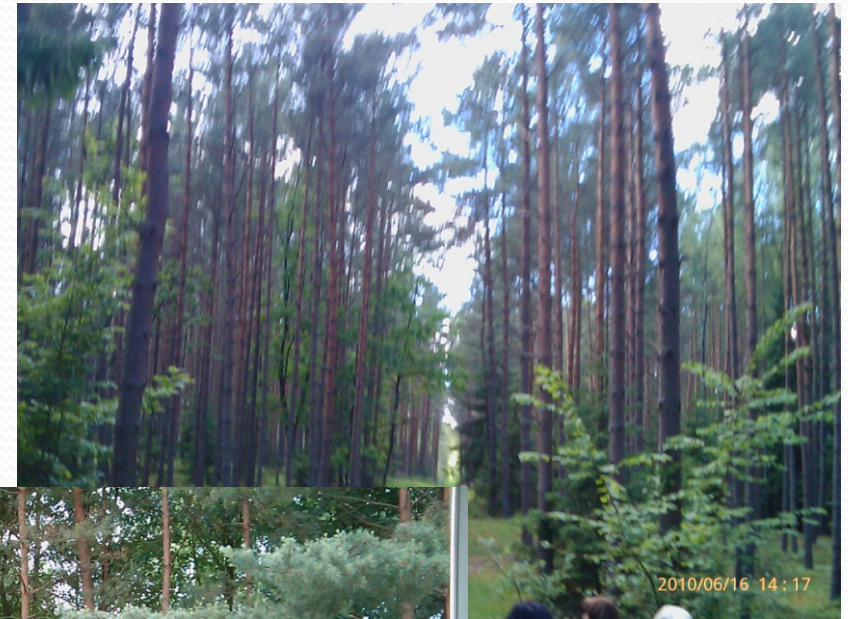


Fig.3. Pine forest



Fig.4. Mixed forest



Fig.5. Landscape near lake *Niegocin*

Wetland landscapes in Mazuria

Wetlands – specific characteristic ecosystem

Typical for the Mazuria area in north-eastern Poland

Diversified landscape is a result of glacier activity

Northern part of the region - moraine hills, hollows.

Southern part – sand plains.

The most valuable element –
groups of lakes

linked by a net of rivers



Biodiversity of Masurian ecosystems

Masurian lakes are rich in biodiversity

Some species:

- mammals (fox, wolf etc)
- elk, bison, deer
- primeval forest species of trees, bushes and other plants



Fig.9. Museum of Nature, exposition of fauna

Fig.10. Examples of animal and bird species in Masuria

European Beavers

European Beaver (*Castor fiber*)- one of the particular examples of the Masurian ecosystems. Beavers are known for their natural trait for building dams and canals for their dwelling (“lodges”). They are second-largest rodent in the world (after the capybara). Their colonies create one or more dams to provide still, deep water to protect against predators, and to float food and building material. Beavers can reach up to 30 kg weight.

Masurian lakes play an important role in the restitution of the lowland European beaver population. Beavers were hunted almost to extinction in Europe.

Besides Poland there are Beaver populations in Germany, Finland, Russia, Czech Republic



Fig.11-13.
European
Beaver

Some environmental problems

Fig.14. Exposition in the Museum of Nature



- encroachment of reeds, willows and birches
- endanger of wetland habitats by eutrophication and drying up
- (in past years) hunting
- land use changing

Measures of environmental protection:

- study and investigation of the environmental relationships and structure of ecosystems
- restricted human activities in the area
- cultivation and restitution of the population of rare species (beavers, bison, etc)



Fig.15. European beavers in the Museum of Nature

Biebrza National Park

Named after “**Biebrza**” river (the major river in the area, 145 km long); the word has linguistic origin from “beaver”. Founded as a National Park in 1993.

Located in the river basin of Narew, the Biebrza and their tributaries

Biebrza National Park – the biggest area of swamps and wetlands in Europe;

It has most diverse flora and fauna comparing to similar wetland ecosystems

It is the largest National Park in Poland

Typical parts and elements of Biebrza landscapes:

- Swamps, peat bog, mixed forests
- Trees: birches, ośls
- Animals: elks, wolves and beavers
- Birds: stork, black-tailed godwit, sandpipers

Main factors make Biebrza attractive & unique:

- ✓ ecological value, nature
- ✓ picturesque value of landscapes
- ✓ variety of flora and fauna

Fig.16. Map of the Biebrza National Park

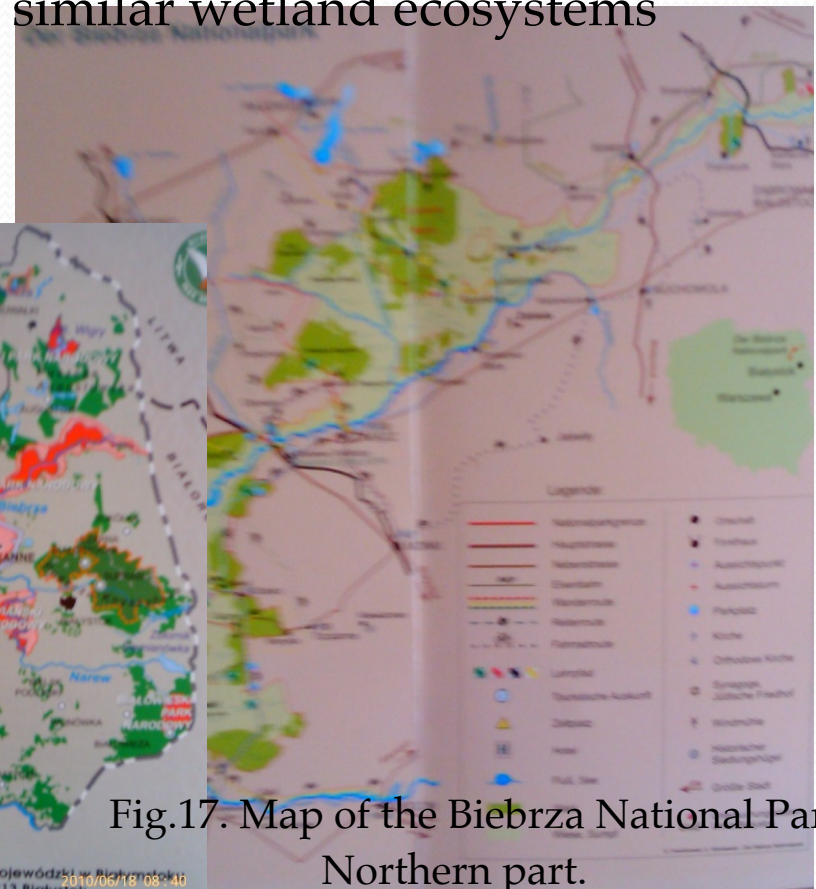


Fig.17. Map of the Biebrza National Park Northern part.

Nature of Biebrza National Park

Biebrza National Park gives habitat for many rare fauna species near extinction due to the reasons:

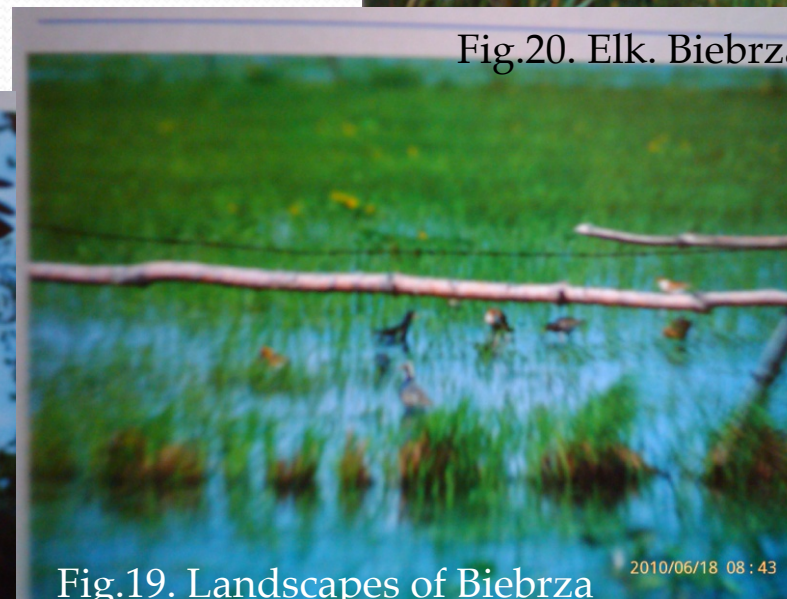
- Climatic and ecological characteristics
- Water environment with high level of moisture
 - necessary for some species, birds
- Vast area (59,233 ha)
- Few human activities in the area of wetlands

Just some examples of species:

Birds - Spotted Eagle, Black Grouse, Great Snipe,

Animals – Beaver, Otter, Wolf

Plants – Fen Orchid, Lady's Slipper



Some more facts about Biebrza...

Biebrza National Park gives habitat to

- 280 bird species: it is the place of nesting and living for lots of water birds which only exist in such areas
- 178 among them breed in the Biebrza wetlands
- 48 mammals
- The biggest population of Elks (ca 600 individuals)
- more than 1000 different types of vascular plants species (including rare orchids Lady's Slipper)
- BNP encompasses the largest area of marshes, peat bogs and grassland in Europe, mainly of primordial origin

Environmental protection of Biebrza

- From 1995 BNP is included in the list of **RAMSAR** regions – i.e. it is an ecological area of international importance (wetland).
- The BNP is included into the European Ecological **NATURA 2000** network & protecting system. For many of bird, mammals and vegetation species BNP is one of the last places for living that still exist in Europe
- BNP includes **Red Bog** project –one of the oldest and most protected area in Poland, within BNP. The Red Bog is the second biggest raised bog in Poland

Conclusions:

- The Masuria Lakeland and Biebrza National Park are the areas especially rich in species and biodiversity
- The areas of Masuria Lakeland and Biebrza National Park must be strictly protected because of their unique characteristics and importance for the European environment
- There are some environmental problems in the area: encroachment of reeds, willows, birches; peatbog fires
- There are already some environmental activities in the area and protecting projects funded by the EU

Literature:

- *Biebrza National Park*. Tourist maps 1:100,000; 1:50,000
- *Wielkie Jeziora Mazurskie*. Map 1:150,000
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- *Mire Ecosystem Dynamics & Conservation of Biodiversity*. Red Bog Project. 2010
- Article “Beaver” Wikipedia (www.wikipedia.org)