

## EARTHWATCH INSTITUTE FIELD REPORT

**Earthwatch Institute Mission:** *Earthwatch engages people worldwide in scientific field research and education to promote the understanding and action necessary for a sustainable environment.*

Earthwatch Institute uses the UNESCO Definition of a Sustainable Environment:  
*A sustainable environment is one in which the natural environment, economic development and social life are seen as mutually dependent - and the interaction between them contributes to the sustainability and enhancement of the quality of people's lives and the natural environment.*

### SECTION I: UNEP- WCMC WEBLINK INFORMATION

**Project Title:** Bogs of Belarus

**Principal Investigator (s):** Natallia Zeliankevich

**Position/Affiliations:** Researcher Fellow

#### **Research Site(s):**

Northern part of Belarus between 27°00' - 29°00' East Longitude and 54°50' - 56°00' North Lat; Rossony and Braslav region of Vitebsk district and Miadel and Vileika region of Minsk district.

#### **Local Management Status of the Research Site(s):**

- Profile “Juhovichy” of Rossony region situated in “Krasnij Bor” landscape reserve
- Profiles “Platerovo”, “Dubrovka”, “Bobili” of Braslav region - in “Braslavskije ozera” national park
- Profiles “Gatovichy-3,0”, “Gatovichy-6,5”, “Diagily” of Miadel region – in the “Narochanskij” national park
- All other profiles situated in the unprotected area.

#### **Scientific names of primary species being studied:**

From variety of the met and described communities of oligotrophic bogs, the greatest interest represents:

1. *Empetrum nigrum* L., located on southern border of an area. Dominant species.
2. *Rubus chamaemorus* L., 2 new island habitats are found. Secondary dominant species.

Rare and protected species of plants have been found:

1. *Carex Buxbaumii* Wahlenb. Four points of a habitat were known in the country. We have found the fifth!
2. *Rubus chamaemorus* L. Nearly 10 points of habitats were known. Two new points were found!
3. *Baeothryon alpinum* (L.) Egor. (*Trichophorum alpinum* (L.) Pers.)
4. *Carex globularis* L.

5. *Drosera obovata* Mert. Et Koch. (*D. anglica* Huds.\* *D. rotundifolia* L.)
6. *Drosera anglica* Huds. (*D. longifolia* L.)
7. *Empetrum nigrum* L.

### **Key Research Objectives:**

1. To carry out complex field ecological and geobotanical research and to estimate the condition of communities of raised bogs in the northern part of Belarus.
2. To carry out syntaxonomic research and to estimate the biodiversity of vegetative cover.
3. To carry out forest valuation research and to analyze dynamics of growth and productivity of forest stands.
4. To study soil-hydrological conditions and to determine a degree of dependence of phytocenosis from capacity, structure and watering a peat layer.
5. To determine the condition and to reveal places of growth of rare and protected plants.

### **Data Collection and Results**

a) Give a concise account of the data you have collected during the past field season.

We surveyed more than 20 bogs files and 15 ecological profiles in which are incorporated:

- Tool leveling on line of ecological phytocenotic profiles is executed.
- 41 typological sample plots (TSP) measuring 600-1200m<sup>2</sup> (in dependence on a density of a stand of trees) for the further monitoring researches is incorporated.
- TSP all complex of forest valuation and geobotanical researches, including studying of vegetation on all layers and soil-hydrological conditions executed was conducted on each.
- A herbarium of vascular plants, mosses and lichens collected.
- We took 70 samples of mosses, mushrooms, lichens for spectroscopic analysis.
- We took 150 samples of peat and soil for laboratory analysis.

b) What progress have you made towards achieving your original objectives?

- A lot of bogs files in the geobotanical plan were surveyed for the first time with the help of a method of ecologo-phytocenotic profiles.
- For the first time peat thickness of raised bogs has been investigated by a method of open prospect-hole with sampling from each horizon for stratigraphical, agrochemical and spectroscopic analysis.
- New data on chorology of rare for Belarus species of plants (stocky cloudberryes, black crowberry) and boreal communities with their rich participation were received.

c) Please provide a summary of your results (even if they are preliminary).

The majority of the surveyed riding bogs have kept the unique natural shape and carry out an appreciable role in maintenance of ecological equilibrium of territory and, in aggregate, of all Central Europe. Hence many of them (the largest and with participation of rare communities) require urgent protection for what are developed recommendations on protection which will be transferred to the Ministry of Nature of Belarus.

### **Significance/Benefits of Research**

a) What is/are the significance/benefits of your research at the following levels?

Field ecological and geobotany researches carried out and results of laboratory analyses can form a basis for development of plans of management by concrete territories, and also the state and international strategy of preservation of a biodiversity.

b) How do your findings contribute to issues of sustainability?

- The results received are already used in nature protection activity in "Braslav lakes" and "Naroch" national parks.
- The Ministry of Natural Resources will consider and will take into account our recommendations on preservation of the environment and lists of the objects required for protection.
- We plan that the given researches will enter the Belarus Space Agency program under the section "Use of the space satellite in nature protection purposes".
- In addition, our data will be used for the national program "Rescue of lake Naroch".

### **Dissemination of Results**

This year an article about vegetation of bogs of Belarus in one of the Czech scientific journals will be published.

During one year, a succession of scientific messages from results of the project will be prepared. They will be reported at local conferences and published in conference journals. 2-3 lectures at the Belarus State Pedagogical University are planned during one year.

We plan to have an article in the local newspaper about the project and volunteers.

During the project we had two interviews on national TV with participation of volunteers (2, 4 teams). One more interview after conference - about the results of the project - is planned.