

UFA INSTITUTE OF BIOLOGY
RUSSIAN ACADEMY OF SCIENCES

INTERIM REPORT № 1

**«Peatland ecosystem restoration and maintenance in the Republic of Bashkortostan»
under Clima East Project “Conservation and sustainable management of peatlands in
Russia to minimize carbon emissions and help ecosystems to adapt to climate change”**

Key results of the first phase of work:

1) Fieldwork surveys

During summer season 2014, 74 sites have been studied, including some individual clusters of 5 to 50 bogs (karst sinkholes) (pictures 1, 2).



Picture 1. Karst field.



Picture 2. Numerous bogs in karst sinkholes.

2) Characteristics of the peatlands of the steppe and forest steppe zones of the Republic of Bashkortostan

Peatlands comprise 50.8 thousand ha or 0.4% of the total lands of the Republic of Bashkortostan. There are 6 peatland districts according to the peatland zoning in the Republic of Bashkortostan. 4 of these districts are located in the steppe and forest steppe zones.

District of the small heterotrophic (mixed) and eutrophic (rich in lime) peatlands of the forest steppe and western foothills of the Urals. Peat bogs are numerous, but they are small in size (at average, up to 100 ha with the depth of up to 1.7 m). Bogginess of different administrative regions varies from 0.3 to 1.4, and account for approximately 0.6%.

Forest areas with a predominance of small eutrophic floodplain and karst peatlands. Degree of peat formation varies from 0.6 to 1.4%, with an average of 1%. The area of peatland is up to 10 ha, the average depth of peat is about 2 m in the largest peatlands.

Left-bank forest-steppe and steppe region of small peat bogs. In the northern part of the left bank of the White Forest alternates with the steppe. Bogs are mainly floodplains, bogginess accounts for approximately 0,1-1,4% with an average of 0.5%.

Zauralsky eutrophic peatlands district is characterized by numerous bogs of rather large area (up to 200 ha and more) and a substantial peat layer (up to 6 m).

3) Rare and endangered plant species

A total of 44 plant species included in the Red Data Book of the Republic of Bashkortostan (2011) have been found during the field trips to the peatlands and marshy meadows in the steppe and forest steppe zones of the Republic of Bashkortostan. These comprise almost 20% of all "Red Book" listed species of the Republic with 7 species are also included in the Red Data Book of the Russian Federation (2008).

4) Protection of peatlands and swamps in the steppe and forest steppe zones of the Republic of Bashkortostan

Peatland ecosystems are the centers of biodiversity conservation that stabilize the hydrological regime of the territory. In addition to that, they are the most important objects of carbon sequestration. However, in the Republic of Bashkortostan peatland conservation is rather neglected. Out of the 170 existing nature monuments, only 15 protect peatland ecosystems with the total area of 2434 hectares. About 20 objects are protected at the territory of other PAs in the mountain forest zone of the Southern Urals.

9 sites of high conservation value have been selected for establishment of new Protected Areas. Their conservation value includes but is not limited to the water protection and water control functions, large deposits of peat, or protection of rare and endangered plant species and communities. Below are the selected sites:

- 1) "Suslovsky karst peatland" (25.7 ha) (Pictures 3 and 4).
- 2) "Chistyie yamki" peatland (4.2 ha) (Picture 5).
- 3) "Kurmanayskoe peatland I» (5.7 ha) (Picture 6).
- 4) "Kurmanayskoe peatland II» (6.4 ha) (Picture 7).
- 5) "Bishkainovskie peatlands" (5 ha) (Picture 8).
- 6) "Kaskardy" peatland (778 ha) (Pictures 9, 10).
- 7) "Nurok" (or "Murakaevskoe peatland") (290 ha) (Picture 11).
- 8) "Krugloe" peatland (18.6 ha) (Picture 12).
- 9) "Karpis" peatland (282.6 ha) (Picture 13).

Picture 3. Suslovsky karst peatland



Picture 4. Sinkhole in Suslovsky karst peatland



Picture 5. Lake in a nature monument under construction in "Chistye yamki" peatland.



Picture 6. "Kurmanayskoe peatland I"



Picture 7. "Kurmanayskoe peatland II»



Picture 8. "Bishkainovskie peatlands"



Picture 9. "Kaskardy" peatland



Picture 10. "Kaskardy" peatland



Picture 11. "Nurok" (or "Murakaevskoe peatland")



Picture 12. “Grugloe” peatland



Picture 13. “Karpis” peatland

5) Restoration of damaged peatlands

During the survey the damaged peatland sites were selected for further rewetting aimed at ecosystem restoration. Previously drained Berkazan (Birkazankamysh) peatland was selected as the most suitable site (Pictures 14, 15). The total area of the peatland is 267 ha.

As a result of drainage, this peatland severely degraded, the reed present in the central part of the peatland, while the peripheral part is now a wet meadow (Picture 17).

Berkazan peatland (Birkazankamysh) is the most favorable site to demonstrate the reconstruction of destroyed peatland ecosystems for the following reasons:

1. Local people have repeatedly attempted to rewet the peatland earlier. The large dam (Picture 18) can serve as a basis for the planned rewetting.
2. Peatland is located in the Asli-Kul nature park, which has required administrative and other skilled staff to assist with rewetting.
3. The Ministry of Ecology and Natural Resource Use of the Republic of Bashkortostan, as well as the management of the nature park and majority of local residents support the idea.



Picture 14. Damaged peatland Berkazan



Picture 15. Central part of the Berkazan peatland



Φoto 16. Old bilge manifold in the Berkazan peatland



Picture 17. Alkaline meadows in Berkazan peatlands



Picture 18. The dam (150-179cm) at the Berkazan peatland