

Monitoring of mire hydrology regime
Report summary 2012

NR „Aizkraukle Mire and Forests”;
NR „Aklais Mire”;
NR „Melnais Lake Mire”;
NR „Rožu Mire”

Aija Dēliņa, Dr. ģeol.
LU Ģeogrāfijas un zemes zinātņu fakultāte



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Restoration of Raised Bog Habitats in the Especially Protected Nature Areas of Latvia

Melnais Lake Mire

The dams on ditches in the Melnais Lake Mire were constructed on January – February 2012. The first changes of GW table were observed soon after the construction of dams in the well M2-1 (1 m from the ditch), and GW table rose for 9 cm there (02/02/2012). There were no changes of GW table observed in the other wells during the winter, but in spring, when the snow melting had started and the ditch filled with water, the GW table raised in the other wells as well. The first significant GW table rise was observed in the beginning of April, when GW table in well M2-1 rose for another 21 cm (09/04/2012) and in well M2-2 for 15 cm (09/04/2012). The water level rose both in the ditch and in the bog during the whole April, and the dam effect also reached the further wells. Sharp GW table rise was observed in the well M2-3 (10 m from the ditch) for 20 cm (22/04/2012) in the second part of the April. GW table rise was observed in the other wells located 25 meters and further from the ditch during the April, and these GW table changes could be related both to the dam effect and to the regional GW table rise due to the snow melting, because the GW table rise is not so sharp. GW table continuously rose for 7-10 cm in total in the wells M2-4, M2-5, M2-6 during the spring period. No GW level rise was observed in the well M2-7 located 250 m from the ditch, even more – the GW table fell for 5 cm (26/05/2012) in the second half of May, and the GW fluctuations with the 5 cm amplitude was observed throughout the summer and in the beginning of autumn. GW table has stabilized since the beginning of May in the other wells and the high GW table reached in the spring has been sustained during the whole summer and in the autumn, there are only slight level fluctuations of 4-6 cm observed.

The observations show that construction of dams on the ditch, where the monitoring profile M2 is located has yielded the expected results – the water level in the mire has raised and sustained stable and high during the whole summer. The direct impact of the dams could be observed up to 10 m from the ditch, but the further wells show indirect effect of the dams, through the GW table stabilization in the bog and sustaining the high levels continuously, which is observed in the whole wells located 25-250 m from the ditch. Maximal GW table rise is obtained next to the ditch, and it is 38 cm in the well M2-1. The GW table rise decreases with the increase of the distance from the ditch, thus the maximal GW table rise in well M2-2 was 22 cm, in well M2-3 – 15 cm, in well M2-4 – 10 cm, in well M2-5 – 7 cm, in well M2-6 – 12 cm and 0 cm in well M2-7.

GW table rise has been observed in the wells M1-3 and M1-4, located in the area of former peat fields, but closer to the main ditch in the east, where dams were constructed. In the spring the water level in these wells raised for 10 cm in M1-3 (09/04/2012) and for 4-6 cm in M1-4 (09-22/04/2012).

The observations in the profile M2 and some wells in profile M1 shows that the management measures to restore the natural habitat of the mire are successful in the Melnais Lake mire, and the hydrological regime of the mire has started to stabilize.

Aizkraukle Mire

Dams on ditches in the Aizkraukle Mire were built on August – September 2012. There is slight and continuous GW table rise in all the profiles that could be due to the construction of dams or to the annual water level rise in the beginning of autumn. However, no major changes of GW table are observed in September. Most likely the

reasons are lack of heavy rainfalls yielding a lot of water to the ditches and the very short time span after the installation of the dams. During the August and September GW table has raised in all the wells and all the profiles for 2-7 cm.

Aklais Mire

Dams on ditches in the Aklais Mire were built on August – September 2012. There is slight and continuous GW table rise in all the profiles that could be due to the construction of dams or to the annual water level rise in the beginning of autumn. However, no major changes of GW table are observed in September. Most likely the reasons are lack of heavy rainfalls yielding a lot of water to the ditches and the very short time span after the installation of the dams. During the August and September GW table has raised in all the wells and all the profiles for 2-4 cm. Most likely, the first effect of the dams on Girupe is observed in profile Ak1. There is sharp GW table rise for 3-5 cm observed in the wells Ak1-1 and Ak1-2.

Rožu Mire

Dams on ditches in the Rožu Mire were built on August – September 2012. There is slight and continuous GW table rise in all the profiles that could be due to the construction of dams or to the annual water level rise in the beginning of autumn. However, no major changes of GW table are observed in September. Most likely the reasons are lack of heavy rainfalls yielding a lot of water to the ditches and the very short time span after the installation of the dams. During the August and September GW table has raised in all the wells and all the profiles for 2-4 cm.