








SUPPLEMENTARY MATERIAL

Moisture content of peat-moorsh soils with special attention to periods of drought

Ryszard Oleszczuk^{1), 2)} , Jan Jadczyzyn³⁾ , Janusz Urbański²⁾ , Ewelina Zając⁴⁾  ,
Andrzej Brandyk⁵⁾ , Jacek Niedźwiecki³⁾ 

¹⁾ Warsaw University of Life Sciences – SGGW, Institute of Environmental Engineering, Warsaw, Poland

²⁾ Warsaw University of Life Sciences – SGGW, Institute of Civil Engineering, Warsaw, Poland

³⁾ Institute of Soil Science and Plant Cultivation – State Research Institute, Pulawy, Poland

⁴⁾ University of Agriculture in Krakow, Faculty of Environmental Engineering and Land Surveying, Department of Land Reclamation and Environmental Development, Al. Mickiewicza 21, 31-120 Kraków, Poland

⁵⁾ Warsaw University of Life Sciences – SGGW, Water Center, Warsaw, Poland

Table S1. Average daily values of climatic water balance (*CWB*) in periods without precipitation and ranges of soil moisture at individual depths in the shallow (1) and medium-deep (2) peat-moorsh soil profile in 2015–2019

Year	Period	<i>CWB</i> (mm·d ⁻¹)	Soil moisture content (% vol.) at the depths							
			10 cm		20 cm		30 cm		40 cm	
			profile 1	profile 2	profile 1	profile 2	profile 1	profile 2	profile 1	profile 2
2015	28.05–11.06	-4.93	15.8–37.5	12.5–39.7	33.7–43.7	27.5–48.4	39.5–44.8	48.9–63.8	54.7–60.3	69.9–76.4
	21.06–07.07	-4.69	10.6–18.1	8.4–16.6	26.2–35.8	23.7–32.8	38.6–40.8	49.3–57.4	54.0–57.1	71.6–77.2
	31.07–24.08	-5.30	9.1–23.2	5.9–21.3	16.9–42.1	15.0–38.6	29.0–43.7	35.6–56.7	45.6–59.3	67.4–75.4
	27.09–11.10	-1.78	13.7–16.0	8.3–11.6	23.8–28.1	25.1–25.6	33.7–36.2	36.4–38.5	49.8–53.5	67.5–71.9
2016	02.04–08.04	-2.78	30.2–36.8	22.4–30.7	43.3–46.6	34.6–42.4	43.3–48.6	42.4–49.7	60.5–62.9	72.6–78.3
	18.05–24.05	-4.37	27.1–31.2	22.5–25.5	39.2–39.5	31.6–34.6	39.7–40.5	41.7–45.7	58.5–59.1	72.0–74.5
	11.06–01.07 ¹⁾	-4.70	25.1–34.2	13.1–22.7	38.5–42.9	28.4–33.1	39.1–41.6	39.1–43.0	55.6–57.7	66.9–72.6
	16.07–26.07	-3.86	30.1–37.0	15.7–24.4	41.0–45.3	31.4–38.2	39.6–42.6	42.2–43.8	55.8–60.4	70.1–73.2
	23.08–03.09	-3.70	19.7–35.0	8.9–19.2	38.4–44.1	24.5–32.8	38.5–40.6	35.2–42.9	52.9–56.8	66.2–72.4
	06.09–02.10 ¹⁾	-2.44	16.8–24.7	6.0–9.5	35.0–40.0	20.5–27.0	36.8–39.0	35.3–36.7	49.0–52.8	64.7–69.0
2017	12.05–23.05	-4.38	32.0–44.6	17.1–49.2	45.6–64.7	34.7–72.0	49.7–72.3	48.5–80.0	63.7–69.0	75.6–78.9
	27.05–03.06	-5.10	33.6–34.0	15.6–18.2	44.4–48.2	33.3–35.7	44.3–50.3	44.6–49.5	61.0–64.7	78.2–79.2
	13.10–20.10	-1.29	46.2–54.2	41.8–64.0	59.8–71.2	68.0–71.1	73.5–79.0	76.4–80.0	80.0–82.0	80.3–82.0
2018	02.04–12.04	-3.04	39.9–47.3	29.4–43.3	54.1–64.1	63.7–74.1	54.6–76.7	78.9–80.0	63.6–76.3	79.7–81.2
	30.04–14.05	-2.74	17.5–37.9	13.0–25.4	37.3–48.5	29.1–38.5	39.4–48.6	49.4–60.6	62.9–70.1	77.4–79.3
	03.06–22.06 ¹⁾	-3.79	14.8–23.3	6.5–14.4	31.2–44.7	16.1–34.6	43.3–48.1	51.6–58.9	52.7–66.2	72.2–79.3
	20.07–28.07	-4.27	27.1–30.9	15.6–25.9	46.6–50.6	35.1–42.3	50.3–60.0	66.8–67.9	65.5–69.4	78.1–81.7
	12.08–23.08	-1.88	28.7–32.7	22.5–26.8	45.8–48.1	34.0–39.9	50.0–54.5	60.3–65.9	61.0–67.3	75.6–79.7
	27.08–04.09.	-1.25	28.1–33.0	20.7–28.8	45.7–48.6	34.8–40.8	54.4–56.6	62.9–66.2	65.2–69.5	78.2–79.9
	14.09–22.09	-0.77	36.0–40.7	27.6–32.1	48.7–54.7	40.3–48.0	57.4–65.4	67.8–69.7	65.9–68.9	78.2–81.7
	27.09–19.10 ¹⁾	-1.35	36.3–38.1	27.2–31.8	47.7–50.1	40.2–45.1	55.0–60.6	67.7–72.5	67.5–69.7	78.4–81.9
2019	01.04–11.04	-4.09	39.9–42.4	30.1–31.1	52.3–54.1	43.2–45.5	58.2–61.1	64.6–73.1	80.7–81.8	81.3–82.0
	14.04–23.04	-4.51	36.7–37.9	27.6–28.0	43.8–49.8	40.3–41.2	48.4–56.1	60.7–62.4	58.7–72.1	71.9–78.4
	21.06–30.06	-4.38	17.4–27.7	11.7–23.8	42.6–46.8	25.1–34.3	51.8–52.5	48.8–55.1	57.2–59.2	68.7–69.8
	17.10–26.10	-0.50	26.5–29.9	27.1–28.7	45.0–46.4	38.6–41.3	55.1–57.3	63.3–66.2	61.3–64.7	76.6–77.1

¹⁾ Periods of meteorological drought.

Source: own study.

Table S2. Average daily values of climatic water balance (*CWB*) in periods without precipitation and ranges of soil water potential (*pF*) at individual depths in shallow (1) and medium-deep (2) peat-moorsh soil profiles in 2015–2019

Year	Period	<i>CWB</i> (mm·d ⁻¹)	Soil water potential (<i>pF</i>) at the depth							
			10 cm		20 cm		30 cm		40 cm	
			profile 1	profile 2	profile 1	profile 2	profile 1	profile 2	profile 1	profile 2
2015	28.05–11.06	-4.93	3.7–4.2	3.7–4.2	3.7	3.7–4.2	3.7	2.0–3.7	3.7	2.0
	21.06–07.07	-4.69	> 4.2	> 4.2	3.7–4.2	3.7–4.2	3.7	2.0–3.7	3.7	2.0
	31.07–24.08 ¹⁾	-5.30	> 4.2	> 4.2	3.7–4.2	3.7–4.2	3.7–4.2	2.0–3.7	3.7	2.0
	27.09–11.10	-1.78	> 4.2	> 4.2	> 4.2	> 4.2	3.7–4.2	3.7	3.7	2.0
2016	02.04–08.04	-2.78	3.7	> 4.2	3.7	3.7	3.7	3.7	3.7	2.0
	18.05–24.05	-4.37	3.7–4.2	> 4.2	3.7	3.7	3.7	3.7	3.7	2.0
	11.06–01.07 ¹⁾	-4.70	3.7–4.2	> 4.2	3.7	3.7–4.2	3.7	3.7	3.7	2.0
	16.07–26.07	-3.86	3.7	3.7–4.2	3.7	3.7–4.2	3.7	3.7	3.7	2.0
	23.08–03.09	-3.70	3.7–4.2	> 4.2	3.7	> 4.2	3.7	3.7	3.7	2.0
	06.09–02.10 ¹⁾	-2.44	3.7–4.2	> 4.2	4.2	> 4.2	3.7	3.7	3.7	2.0
2017	12.05–23.05	-4.38	3.7	> 4.2	2.0–3.7	2.0–3.7	1.0–3.7	2.0–3.7	2.0–3.7	2.0
	27.05–03.06	-5.10	3.7	> 4.2	3.7	3.7	3.7	2.0–3.7	2.0–3.7	2.0
	13.10–20.10	-1.29	2.0–3.7	1.0–3.7	1.0–2.0	2.0	1.0	2.0	2.0	2.0
2018	02.04–12.04	-3.04	3.7	3.7–4.2	2.0–3.7	2.0	2.0–3.7	2.0	2.0–3.7	2.0
	30.04–14.05	-2.74	3.7–4.2	> 4.2	3.7	3.7–4.2	3.7	2.0	2.0–3.7	2.0
	03.06–22.06 ¹⁾	-3.79	> 4.2	> 4.2	3.7	> 4.2	3.7	2.0	2.0–3.7	2.0
	20.07–28.07	-4.27	3.7–4.2	> 4.2	4.2	3.7	3.7	2.0	2.0	2.0
	12.08–23.08	-1.88	3.7–4.2	> 4.2	3.7	3.7	3.7	2.0	2.0–3.7	2.0
	27.08–04.09	-1.25	3.7	> 4.2	3.7	3.7	3.7	2.0	2.0–3.7	2.0
	14.09–22.09	-0.77	3.7	3.7–4.2	3.7	3.7	3.7	2.0	2.0	2.0
	27.09–19.10 ¹⁾	-1.35	3.7	3.7–4.2	3.7	3.7	3.7	2.0	2.0	2.0
2019	01.04–11.04	-4.09	3.7	4.2	3.7	3.7	3.7	2.0	2.0	2.0
	14.04–23.04	-4.51	3.7	4.2	3.7	3.7	3.7	2.0	2.0–3.7	2.0
	21.06–30.06	-4.38	> 4.2	> 4.2	4.2	> 4.2	3.7	2.0–3.7	3.7	2.0
	17.10–26.10	-0.50	3.7–4.2	3.7–4.2	3.7	3.7	3.7	2.0	3.7	2.0

¹⁾ Periods of meteorological drought.

Explanations: bold – periods of soil drought.

Source: own study.