

Krzewicka B., Matura N., Adamska E. & Osyczka P. (2020) Species composition of freshwater lichens in temperate mountain streams: the effect of site, habitat and local spatial isolation. – *Preslia* 93: 235–254.

Electronic Appendix 1

corresponding author; e-mail: piotr.osyczka@uj.edu.pl

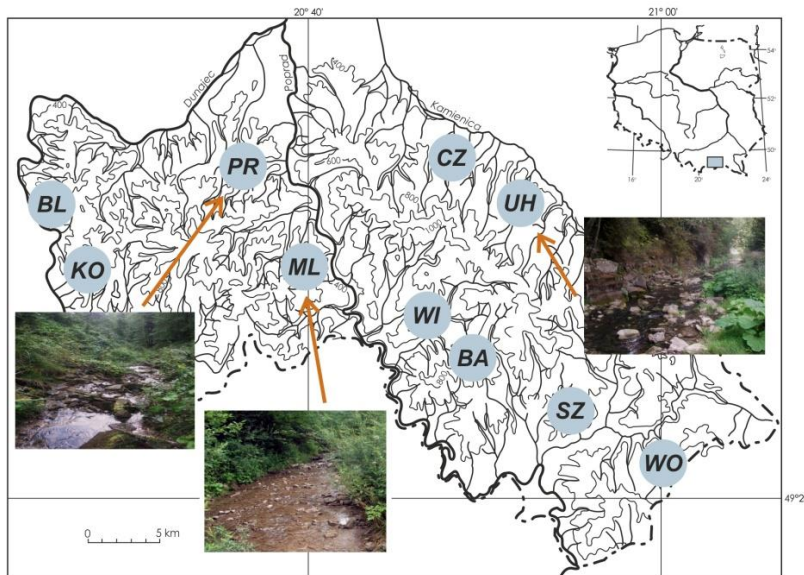


Fig. A1. – Location of the streams in the Beskid Sądecki Mts (Western Carpathians), example illustrations of the sampling sites are also provided.

Streams: *BA* – Potok Baraniecki, *BL* – Potok Bliszczce, *CZ* – Potok Czaczowiec, *KO* – Potok Kozłecki, *ML* – Potok Młodowski, *PR* – Potok Przesietnica, *SZ* – Potok Szczawniczek, *UH* – Potok Uhryński, *WI* – Potok Wierchomlanka, *WO* – Potok Wojkowski

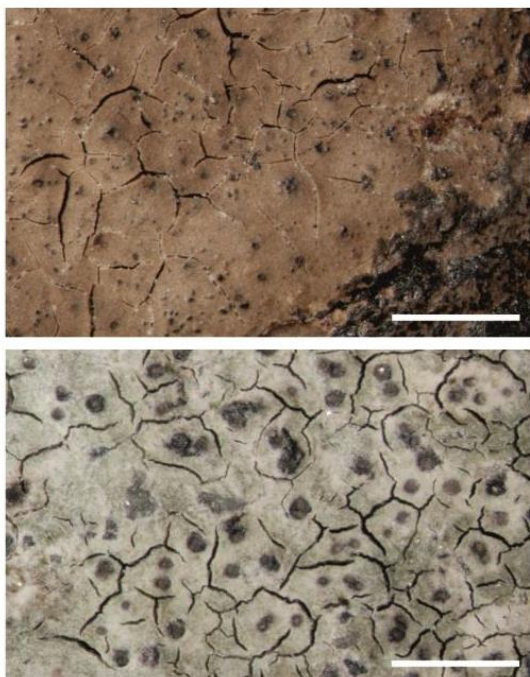


Fig. A2. – Examples of freshwater lichens associated with temperate mountain streams: *Hydropunctaria rheitrophila* (top) and *Verrucaria praetermissa* (bottom). Scale bars – 1 mm.

Table A1. – Habitat parameters of the streams based on measurements obtained from sampling sites, mean±SD and the minimum–maximum range are provided; different letters indicate significant differences ($P < 0.05$) according to the Dunn’s test.

Stream	pH		Conductivity ($\mu\text{S}/\text{cm}$)		Dissolved oxygen content (%)		Siltation (% of substrate surface)		Light intensity ($\mu\text{mol m}^{-2} \text{s}^{-1}$)	
	mean±SD	min–max	mean±SD	min–max	mean±SD	min–max	mean±SD	min–max	mean±SD	min–max
BA (n=6)	8.3±0.2	8.1–8.5	190±24 a,b	170–230	94.5±0.2 b,c,d,e	94.2–94.7	16±2	15–20	330±185	85–630
BL (n=3)	8.5±0.3	8.2–8.7	287±29 a,b	270–320	84.6±3.4 a,b,c,d	81.0–87.6	32±20	20–55	242±116	145–370
CZ (n=6)	8.5±0.2	8.3–8.7	203±53 a,b	150–290	92.7±2.0 a,b,c,d,e	90.6–94.6	25±17	10–55	275±183	92–585
KO (n=3)	8.2±0.2	8.1–8.4	240±20 a,b	220–260	86.9±3.0 a,b,c,d	83.4–89.0	43±20	20–55	233±135	95–365
ML (n=3)	8.6±0.1	8.5–8.7	267±32 a,b	230–290	89.0±1.0 a,b,c,d,e	88.0–90.0	22±3	20–25	287±51	250–345
PR (n=3)	8.3±0.2	8.1–8.5	157±15 a	140–170	88.7±3.1 a,b,c,d,e	86.0–92.0	16±6	10–20	212±63	145–270
SZ (n=5)	8.4±0.1	8.4–8.5	178±23 a	150–200	91.0±1.5 a,b,c,d,e	89.3–93.0	17±11	10–35	314±199	35–590
UH (n=6)	8.5±0.1	8.4–8.6	208±44 a,b	140–250	96.4±0.8 e	95.0–97.0	18±9	10–35	341±193	45–635
WI (n=4)	8.6±0.1	8.5–8.6	278±67 a,b	210–340	90.3±3.7 a,b,c,d,e	86.7–94.0	21±2	20–25	400±250	125–730
WO (n=4)	8.5±0.1	8.4–8.7	368±34 b	320–400	82.8±3.0 a	79.0–85.5	16±2	15–20	336±243	105–660

Streams: **BA** – Potok Baraniecki, **BL** – Potok Bliszcz, **CZ** – Potok Czaczowiec, **KO** – Potok Kozłowski, **ML** – Potok Młodowski, **PR** – Potok Przesietnica, **SZ** – Potok Szczawniczek, **UH** – Potok Uhryński, **WI** – Potok Wierchomlanka, **WO** – Potok Wojkowski

Fig. A3. – Non-metric multidimensional scaling (NMDS) ordination diagrams showing patterns of similarity between the sampling sites in terms of lichen species composition in habitat classes *Hab-I*, *Hab-II*, *Hab-III* (A) and study streams (B).

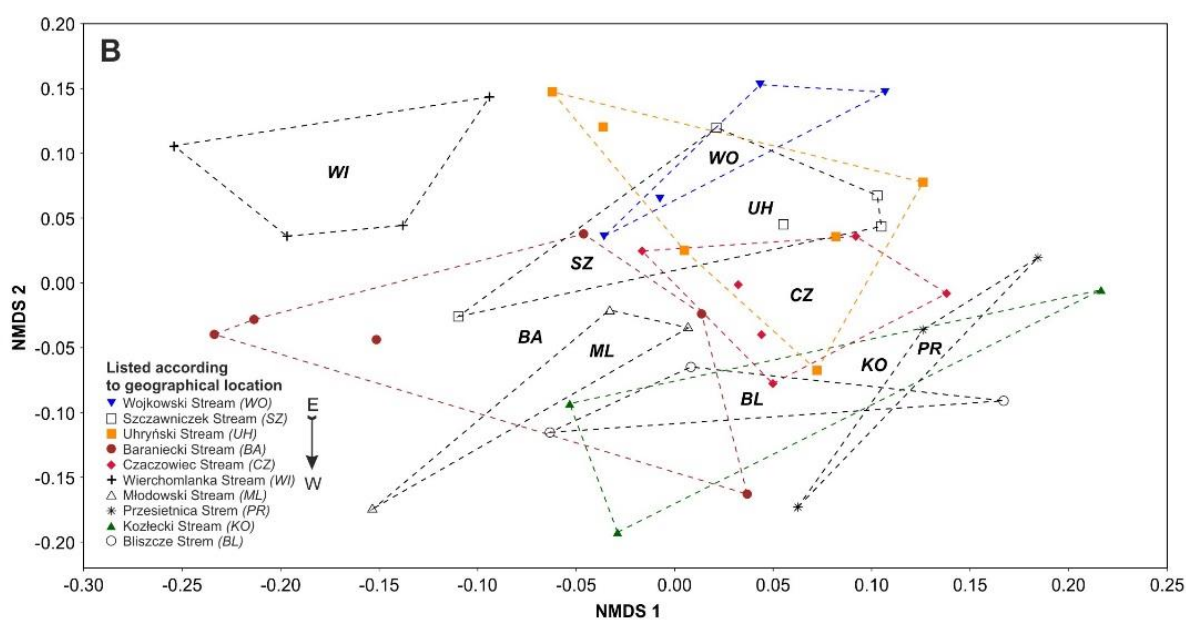
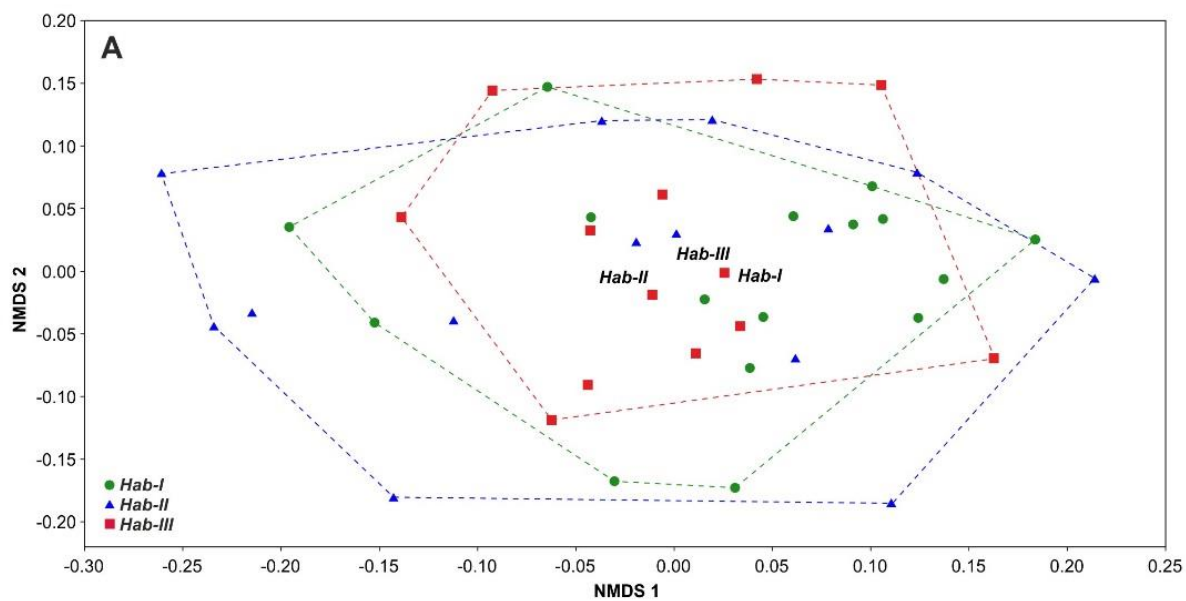


Fig. A4. – Scatterplots showing significant positive correlations ($P < 0.05$) between values of parameters (pH, conductivity of water and light intensity) measured at sampling sites and their distance from stream springs; Pearson coefficients (R) are provided. For conductivity the coefficients were calculated separately for streams with comparable values of this parameter (*BA, CZ, KO, PR, SZ, UH* – first set, black points and *BL, ML, WI, WO* – second set, blue point; see Table S1 for streams abbreviations).

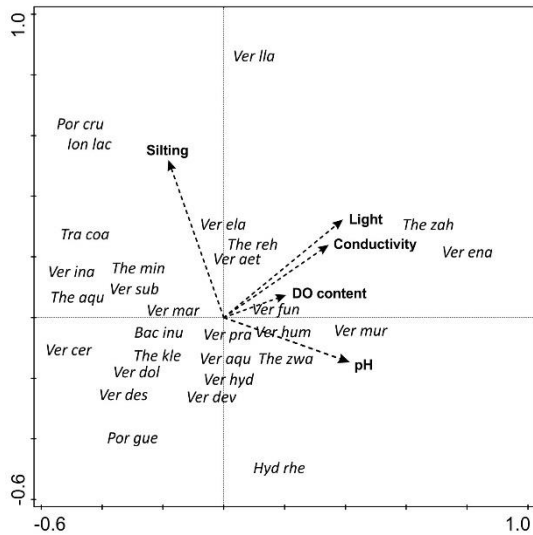
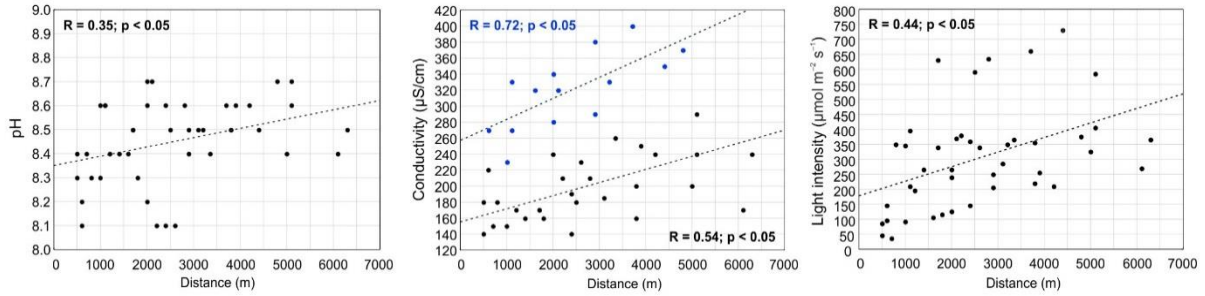


Fig. A5. – Canonical correspondence analysis (CCA) ordination diagram (first two axes) for the abundance of lichen species and habitat parameters of the sampling sites; see Table S2 for stream abbreviations.