Koutecký P., Prančl J., Lučanová M., Brožová V., Nagy Nejedlá M., Košnar J., Koutecká E., Englmaier P. & Kaplan Z. (2025) Striking diversity in Alpine lakes: genetic variation, hybridization and taxonomy of the aquatic *Ranunculus trichophyllus* group. – Preslia 97: 191–216.

Supplementary Table S3. Morphological characters. Number of samples: all individuals / individuals with open flowers / individuals with fruits (or empty receptacles in sterile plants). For quantitative characters observed range (minimum–maximum) is shown for each population; for categorical characters the number of individuals is indicated in brackets, if the population was not uniform. See Table 1 for the description of characters and Supplementary Table S1 for locality details.

Ref. no.	Taxon / Cytotype	Locality (abbreviated)	Elevation (m)	No. of samples	Growth form	Stem length (cm)	Rooting on the upper nodes	Stem diameter (mm)	Leaf length (cm)	Flower type	Petal length (mm)	Fruiting pedicel length (cm)	No. of achenes	Fertility
AT-08	*R. confervoides*	AT; Äußere Kainisch: Ödensee lake	790	5/2/2	prostrate to shortly ascending	<20	yes	0.60–0.75	1.4–2.9	mixed (mostly cleistogamous, a few flowers open)	4.3–4.8	2.9–5.3	18	full
AT-12	*R. confervoides*	AT; Altausee: Altausseer See lake	730	3/0/0	prostrate	<15	yes	0.65–0.80	2.3–2.6	no flowers/fruits				
B14-121; AT-01	*R. confervoides*	AT; Grünau im Almtal: Almsee lake	589	5/3/3	prostrate	<20	yes	0.85–1.15	1.8–2.8	mixed (mostly cleistogamous, a few flowers open)	3.8–4.7	1.5–2.3	10–15	full
B14-159	*R. confervoides*	AT; Gerlos: Langer See lake	1937	1/0/0	prostrate	<15	yes	fragmentary collection, characters could not be measured						
B14-160	*R. confervoides*	AT; Tschagguns: Tilisunasee lake	2105	1/0/0	prostrate	<15	yes	fragmentary collection, characters could not be measured						
B14-161	*R. confervoides*	AT; Lech: Monzabonsee lake	2226	1/0/0	prostrate	<15	yes	fragmentary collection, characters could not be measured						
B14-162	*R. confervoides*	AT; Baad: Hochalpsee lake	1969	1/0/0	prostrate	<15	yes	fragmentary collection, characters could not be measured						
B14-163	*R. confervoides*	AT; Wörth: Fuscher Lacke lake	2262	1/0/0	prostrate	<15	yes	fragmentary collection, characters could not be measured						
B14-164	*R. confervoides*	CH; Sankt Antönien: Partnunsee lake	1869	1/0/0	prostrate	<15	yes	fragmentary collection, characters could not be measured						
B14-165	*R. confervoides*	AT; Warth: Seebachsee lake	1480	1/0/0	prostrate	<15	yes	fragmentary collection, characters could not be measured						
K14-41	*R. confervoides*	SI; Trenta: Spodnje Kriško jezero lake	1900	4/0/1	prostrate	<10–15	yes	0.45–0.60	1.9–2.6	not flowering, one individual with fruits from the previous year		2.4	11	full
K15-31	*R. confervoides*	AT; Wald: Ilgsee lake	2100	1/0/0	prostrate	<15	yes	0.6	1.8	no flowers/fruits				
K15-34	*R. confervoides*	CH; Zermatt: Schwarzsee lake	2570	1/1/1	prostrate	<15	yes	0.7	2	cleistogamous			12	full
K17-51; K18-64	*R. confervoides*	AT; Tauplitz: Steirersee lake	1450	4/2/2	prostrate	<15	yes	0.55–0.65	1.4–2.3	mixed	4.1–4.6	1.6–3.4	13	full
K17-81	*R. confervoides*	AT; Grundlsee: Henar-See lake	1700	3/2/2	prostrate to ascending	<20	yes	0.75–0.90	1.9–2.4	mixed	4.1–4.4	2.8–3.0	15–22	full
K17-82	*R. confervoides*	AT; Altausee: Wildensee lake	1540	3/1/2	prostrate to ascending	<20	yes	0.60–0.65	1.7–1.8	cleistogamous (a single flower open)	2.9	2.1–3.2	18–19	full
K18-32	*R. confervoides*	SI; Kobarid: Krnsko jezero lake	1400	3/0/0	prostrate	<10	yes	0.50–0.60	2.6–2.9	no flowers/fruits on submerged plants; terrestrial forms petal length 5.0–7.2 mm, fully fertile, achenes 15-17				
K18-33	*R. confervoides*	SI; Ukanc: Dvojno jezero lake	1690	5/0/0	prostrate	<15	yes	0.55–0.85	2.5–3.2	no flowers/fruits on submerged plants; terrestrial forms petal length 3.4–5.7 mm, fruits not developed yet				
K22-18	*R. confervoides*	AT; Kleinarl: Jägersee lake	1100	5/0/0	prostrate	<20	yes	0.55–0.90	1.7–2.0	no flowers/fruits				
BA-19	*R. confervoides*	EE; Mustvee: Peipsi järv lake	30	1/0/1	ascending	20	yes	0.85	3.3	one open flower; petals lost during sample preparation, the length approximate only; fruits not mature yet	~ 4 mm	1.8	22	full
SE-17	*R. confervoides*	SE; Tänndalen: pool	720	3/3/3	prostrate	<10	yes	0.40–0.50	1.0–1.5	open (plants in very shallow water)	3.8–5.0	0.8–1.2	10–16	full
SE-19	*R. confervoides*	SE; Ljungdalen: pools by the Stortjärnen lake	980	3/2/2	prostrate	<10–20	yes	0.55–0.75	1.7–2.3	mixed	3.7–4.2	1.6–1.7	12	full

Ref. no.	Taxon / Cytotype	Locality (abbreviated)	Elevation (m)	No. of samples	Growth form	Stem length (cm)	Rooting on the upper nodes	Stem diameter (mm)	Leaf length (cm)	Flower type	Petal length (mm)	Fruiting pedicel length (cm)	No. of achenes	Fertility
SK-11	*R. confervoides*	SE; Mariefred: Södra Kärrlången lake	40	4/1/1	prostrate? (plants floating, plucked from the bottom of the lake)	<10	yes	0.25-0.55	1.0-1.2	cleistogamous (a single flower open)	2.6	1.2-1.7	10	full
SK-16	*R. confervoides*	FI; Hattula: Lehijärvi lake	80	4/1/1	prostrate	<15–20	yes	0.50–0.80	2.1–2.5	cleistogamous (a single flower open)	2.8	1.8–2.1	9–20	full
AT-05	*R. trichophyllus* s. l. ('intermediate')	AT; Irdning-Donnersbachtal: Plannersee lake	1790	5/4/4	ascending (1), erect (4)	25–40	yes (4), no (1)	0.50–0.90	2.6–3.0	mixed (mostly cleistogamous, a few flowers open)	5.9–6.2	4.4–5.1	15–19	full
B20-010	*R. trichophyllus* s. l. ('intermediate')	AT; Grünau im Almtal: Großer Ödsee	692	5/0/4	prostrate to ascending	15–25	no (3), yes (2)	0.60–0.80	1.4–2.0	cleistogamous		2.0–3.8	14–21	full
K16-19	*R. trichophyllus* s. l. ('intermediate')	AT; Krakaudorf: Etrachsee lake	1370	3/2/2	erect	45–50	no	0.85–0.90	2.6–2.8	cleistogamous		1.7–2.2	4–19	partial (25%) to full
SW-26	*R. trichophyllus* s. l. ('intermediate')	CH; Poschiavo: Lagh da la Cruseta lake	2304	5/0/3	prostrate to ascending	<15	no	0.60–0.80	1.5–2.2	cleistogamous		0.7–1.1	14–16	full
SW-27	*R. trichophyllus* s. l. ('intermediate')	CH; La Punt Chamues-ch: small lake N of the Albulasee lake	2291	5/3/0	shortly ascending	20–35	yes	0.60–0.90	1.8–3.1	mixed	2.5–3.4	fruits not developed yet		
SW-30	*R. trichophyllus* s. l. ('intermediate')	CH; Tschierv: Lai da Juata lake	2236	5/1/5	shortly ascending	20–30	yes	0.75–1.00	1.8–2.4	cleistogamous (a single flower open)	3.8	2.7–3.4	22–32	full
AT-15a	*R. trichophyllus* B	AT; Bad Goisern: Hallstättersee lake	508	5/5/5	erect	15–35	no	0.75–1.40	1.5–2.4	mixed	2.1–3.2	1.0–1.8	8–11	full
AT-16b	*R. trichophyllus* B	AT; Obertraun: Hallstättersee lake	520	6/2/6	erect	35–45	no	0.90–1.50	2.2–3.1	mixed (mostly cleistogamous, a few flowers open)	2.6–2.9	1.1–1.8	11–20	full
B11-025	*R. trichophyllus* B	AT; Tragöß-Oberort: Grüner See lake	776	1	erect	> 20	no	fragmentary collection, characters could not be measured						
B14-122	*R. trichophyllus* B	AT; Grünau im Almtal: Almsee lake	589	2	erect	> 20	no	fragmentary collection, characters could not be measured						
K16-15; K22-35	*R. trichophyllus* B	DE; Ruhpolding: Förchensee lake	740	5/3/6	erect	> 100 (up to 200)	no	1.20–2.30	3.0–3.9	mixed (mostly cleistogamous, a few flowers open)	2.9–3.5	1.7–3.2	16–23	full
K18-36	*R. trichophyllus* B	IT; Tiarno di Sopra: Lago d'Ampola lake	730	1/1/0	? (plant freely floating)	> 20	no	1.65	2.1	open	4.5	fruits not developed yet		
SW-16	*R. trichophyllus* B	CH; Crans-Montana: Lac des Miriouges lake	1345	5/2/5	erect	> 40–60	no	0.95–1.80	1.8–3.2	mixed (mostly cleistogamous, a few flowers open)	2.8–3.5	1.2–3.8	16–27	full
AT-15c	*R. circinatus* × *R. confervoides*	AT; Bad Goisern: Hallstättersee lake	508	5/0/3	ascending (2), erect (3)	15–35	yes (3), no (2)	0.50–1.00	1.4–1.8	unopened buds with reduced white petals		1.7–3.6	0	sterile
AT-17b	*R. circinatus* × *R. confervoides*	AT; Obertraun: Hallstättersee lake	520	5/0/0	erect	35-80	no (4), yes (1)	0.80–1.15	1.5–2.1	no flowers/fruits				
AT-11	*R. trichophyllus* hybrid	AT; Grundlsee: Toplitzsee lake	730	4/1/4	erect	> 100	no	1.10–1.60	2.5–3.5	cleistogamous		3.6–4.8	0	sterile
AT-15b; B14-119	*R. trichophyllus* hybrid	AT; Bad Goisern: Hallstättersee lake	508	5/3/3	erect (3), ascending (1)	20–40	yes (4), no (1)	0.85–1.50	2.6–3.8	open (on two plants only young buds present)	5.4–6.9	3.5–4.3	0	sterile
AT-16a	*R. trichophyllus* hybrid	AT; Obertraun: Hallstättersee lake	520	3/1/1	prostrate	30–40	no	1.10–1.30	4.2–6.4	open (1); absent (2)	4.2	5.8	0	sterile
AT-17a	*R. trichophyllus* hybrid	AT; Obertraun: Hallstättersee lake	520	2/1/1	erect	> 40–60	no	1.40–1.60	3.1–3.5	open (1); absent (1)	5.2	4.9	0	sterile
AT-17c	*R. trichophyllus* hybrid	AT; Obertraun: Hallstättersee lake	520	3/0/0	prostrate	25–30	no (2), yes (1)	1.35–1.50	6.7–8.0	no flowers/fruits				
B20-011	*R. trichophyllus* hybrid	AT; Ebensee am Traunsee: Traunsee lake	423	2/2/2	? (freely floating fragments)	> 20	no	1.40–1.70	2.8–2.9	open	4.9–6.5	1.7–3.2	0	sterile

Ref. no.	Taxon / Cytotype	Locality (abbreviated)	Elevation (m)	No. of samples	Growth form	Stem length (cm)	Rooting on the upper nodes	Stem diameter (mm)	Leaf length (cm)	Flower type	Petal length (mm)	Fruiting pedicel length (cm)	No. of achenes	Fertility
SW-13	*R. trichophyllus* s. l. 6x	CH, Champex-Lac: Lac de Champex lake	1468	5/2/2	erect	>25–40	no	1.05–1.40	3.7–4.9	open	4.2–5.2	1.8–2.4	4–5	partial (20–30%)