

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 S1. Locality details, genome sizes, ITS genotypes and plastid haplotypes.

Locality, country codes: AT – Austria, CH – Switzerland, DE – Germany, EE – Estonia, FI – Finland, IT – Italy, SE – Sweden, SI – Slovenia. Depth: depth in which the samples were collected. Abbreviations of collectors: EK – E. Koutecká, JP – J. Prančl, ML – M. Lučanová, PK – P. Koutecký, ZK – Z. Kaplan. Flow cytometry: SE – standard error of mean.

Ref. no.	Taxon / Cytotype	Locality	Depth	Coordinates (WGS 84)	Elevation (m)	Collected	Flow cytometry			DNA sequencing			
							No. of samples	Source	Ratio to <i>Bellis perennis</i> (mean ± SE)	2C-value (pg) (mean ± SE)	No. of samples	ITS genotype	cpDNA haplotype
AT-08	<i>R. confervoides</i>	AT; Steiermark (Styria), distr. Liezen; Äußere Kainisch: Ödensee; mountain lake ca 2 km SW of the village, by the public bathing place	1–2 m	47°33'45"N, 13°49'18"E	790	2018-07-31 ZK & PK & ML	5	this study	2.612 ± 0.011	8.828 ± 0.036	2	5, 6	conf-1
AT-12	<i>R. confervoides</i>	AT; Steiermark (Styria), distr. Liezen; Altausee: Altausseer See lake E of the village, by the public bathing place in the SW corner of the lake	3 m	47°38'10"N, 13°46'10"E	730	2018-07-31 ZK & PK & ML	3	this study	2.676 ± 0.011	9.046 ± 0.039	1	6	conf-1
B14-121; AT-01	<i>R. confervoides</i>	AT; Oberösterreich (Upper Austria), distr. Gmunden; Grünau im Almtal: Almsee lake, SW part	1.5 m	47°44'50"N, 13°57'02"E	589	2014-07-27 ZK; 2018-07-30 ZK & PK & ML	12	Prančl et al. 2018 & this study	2.657 ± 0.006	8.979 ± 0.022	4	6, 7, 9	trich-A, conf-5
B14-159	<i>R. confervoides</i>	AT; Tirol, distr. Schwaz; Gerlos: Langer See lake, ca 5.8 km NW of the village	< 1 m	47°15'57"N, 11°59'08"E	1937	2014-10-05 D. Jäger	1	Prančl et al. 2018	2.614	8.835	1	6	conf-3
B14-160	<i>R. confervoides</i>	AT; Vorarlberg, distr. Bludenz; Tschagguns: Tilisunasee lake, ca 6 km SSW of the village	< 1 m	47°01'36"N, 09°52'54"E	2105	2014-10-05 D. Jäger	1	Prančl et al. 2018	2.597	8.778	1	14	conf-1
B14-161	<i>R. confervoides</i>	AT; Vorarlberg, distr. Bludenz; Lech: Monzabonsee lake, ca 2.5 km SE of the village	< 1 m	47°11'50"N, 10°10'16"E	2226	2014-10-05 D. Jäger	1	Prančl et al. 2018	2.633	8.9	1	4	conf-3
B14-162	<i>R. confervoides</i>	AT; Vorarlberg, distr. Bregenz; Baad: Hochalpsee lake, ca 3.3 km S of the village	< 1 m	47°16'50"N, 10°07'17"E	1969	2014-10-05 D. Jäger	1	Prančl et al. 2018	2.617	8.845	1	4	conf-3
B14-163	<i>R. confervoides</i>	AT; Salzburg, distr. Zell am See; Wörth: Fuscher Lacke lake, ca 14.5 km SW of the village	< 1 m	47°06'39"N, 12°49'57"E	2262	2014-10-05 D. Jäger	1	Prančl et al. 2018	2.615	8.839	1	14	conf-6
B14-164	<i>R. confervoides</i>	CH; canton Graubünden; Sankt Antönien: Partnunsee lake, ca 5.5 km NE of the village	< 1 m	47°00'32"N, 09°51'35"E	1869	2014-10-05 D. Jäger	1	Prančl et al. 2018	2.606	8.808	1	10	conf-1
B14-165	<i>R. confervoides</i>	AT; Vorarlberg, distr. Bregenz; Warth: Seebachsee lake, at the SE edge of the village	< 1 m	47°15'26"N, 10°11'07"E	1480	2014-10-05 D. Jäger	1	Prančl et al. 2018	2.597	8.778	1	4	conf-3
K14-41	<i>R. confervoides</i>	SI; region Goritzia; Trenta: Spodnje Kriško jezero lake, ca 4.1 km NE of the village	1 m	46°23'56"N, 13°48'07"E	1900	2014-07-19 PK	5	Prančl et al. 2018	2.653 ± 0.009	8.966 ± 0.029	3	14	conf-2
K15-31	<i>R. confervoides</i>	AT; Salzburg, distr. Tamsweg; Wald: Riedingtal valley, Ilgsee mountain lake ca 7 km W of the village	< 1 m	47°11'32"N, 13°20'50"E	2100	2015-07-27 O. Lepšová	1	Prančl et al. 2018	2.599	8.785	1	14	conf-4
K15-34	<i>R. confervoides</i>	CH; canton Valais; Zermatt: Schwarzsee mountain lake, ca 4.5 km SW of the village	< 1 m	45°59'27"N, 07°42'24"E	2570	2015-08-29 O. Lepšová	1	Prančl et al. 2018	2.655	8.974	1	14	conf-4
K17-51; K18-64	<i>R. confervoides</i>	AT; Steiermark (Styria), distr. Liezen; Totes Gebirge, Tauplitz: Tauplitzalm, Steirersee lake, S coast, ca 4,3 km NNE of the village	1–2 m	47°35'54"N, 14°01'57"E	1450	2017-07-09; 2018-08-05 J. Lepš & O. Lepšová	3	Prančl et al. 2018	2.669 ± 0.004	9.020 ± 0.015	1	6	conf-4

Ref. no.	Taxon / Cytotype	Locality	Depth	Coordinates (WGS 84)	Elevation (m)	Collected	Flow cytometry			DNA sequencing			
							No. of samples	Source	Ratio to <i>Bellis perennis</i> (mean ± SE)	2C-value (pg) (mean ± SE)	No. of samples	ITS genotype	cpDNA haplotype
K17-81	<i>R. confervoides</i>	AT; Steiermark (Styria), distr. Liezen; Totes Gebirge, Grundlsee: Henar-See lake, ca 8.2 km NNE of the church in the village	< 1 m	47°41'42"N, 13°52'53"E	1700	2017-08-27 ML	6	Prančl et al. 2018	2.641 ± 0.004	8.926 ± 0.013	1	6	conf-4
K17-82	<i>R. confervoides</i>	AT; Steiermark (Styria), distr. Liezen; Totes Gebirge, Altausee: Wildensee lake, ca 10.4 km NE of the centre of the village	< 1 m	47°42'44"N, 13°51'14"E	1540	2017-08-27 ML	3.1.1900	Prančl et al. 2018	2.630 ± 0.001	8.889 ± 0.003	1	8	conf-4
K18-32	<i>R. confervoides</i>	SI; region Gorizia; Kobarid: Krnsko jezero lake, ca 9 km ENE of the village	< 1 m, partly terrestrial	46°17'12"N, 13°41'04"E	1400	2018-07-18 PK & EK	6	this study	2.638 ± 0.009	8.917 ± 0.032	1	14	conf-2
K18-33	<i>R. confervoides</i>	SI; Upper Carniola region; Ukanc: Dvojno jezero lake, N part, ca 5.6 km NW of the village, N bank	< 1 m, partly terrestrial	46°19'03"N, 13°46'44"E	1690	2018-07-19 PK & EK	5	this study	2.626 ± 0.011	8.876 ± 0.038	1	14	conf-2
K22-18	<i>R. confervoides</i>	AT; Salzburg, distr. Sankt Johann im Pongau; Kleinarl: Jägersee lake, ca 4.6 km S of the village	1–2 m	47°14'12"N, 13°19'54"E	1100	2022-08-19 PK	5	this study	2.600 ± 0.009	8.788 ± 0.029	1	11	conf-4
BA-19	<i>R. confervoides</i>	EE; Jõgevamaa County; Mustvee, Peipsi järv (Čudsko ozero), sandy coast at the village	< 1 m	58°49'57"N, 26°56'54"E	30	2022-06-22 ZK, JP & PK	1	this study	2.643	8.933	1	13	conf-1
SE-17	<i>R. confervoides</i>	SE; region Jämtland; Tännadalen: small pool (partly dried in the time of collections) where streams of the local spring enter a pet bog; the margin o a peat bog on the right margin of the Tannen River valey, W of the village	< 10 cm, partly teresrial	62°32'37"N, 12°18'16"E	720	2022-07-24 PK & V. Dolejšek	5	this study	2.597 ± 0.016	8.779 ± 0.053	2	14	conf-4
SE-19	<i>R. confervoides</i>	SE; region Jämtland; Ljungdalen: small isolated pools on the E bank of the lake Stortjärnen, ca 6 km WNW of the village	< 1 m	62°52'38"N, 12°40'54"E	980	2022-07-24 PK & V. Dolejšek	6	this study	2.594 ± 0.011	8.768 ± 0.037	2	14	conf-3
SK-11	<i>R. confervoides</i>	SE; region Södermanland; Mariefred: W bank of Södra Kärrlängen lake, ca 5,5 km NW of the village	floating	59°17'25"N, 17°08'28"E	40	2017-07-23 JP, PK & J. Hanzlíčková	3	this study	2.675 ± 0.006	9.041 ± 0.022	1	14	conf-1
SK-16	<i>R. confervoides</i>	FI; region Kanta-Häme; Hattula: sandy southern bank of Lehijärvi lake	< 1 m	61°01'58"N, 24°19'42"E	80	2017-07-26 JP, PK & J. Hanzlíčková	4	this study	2.620 ± 0.005	8.855 ± 0.015	1	13	trich-A
AT-05	<i>R. trichophyllus</i> s. l. (‘intermediate’)	AT; Steiermark (Styria), distr. Liezen; Irdning-Donnersbachtal: Plannersee lake, ca 1 km NE of Planneralm	1–2 m	47°24'38"N, 14°12'42"E	1790	2018-07-31 ZK & PK & ML	5	this study	2.679 ± 0.013	9.056 ± 0.044	2	6	conf-7
B20-010	<i>R. trichophyllus</i> s. l. (‘intermediate’)	AT; Oberösterreich (Upper Austria), distr. Gmunden; Grünau im Almtal: Großer Ödsee, mountain lake ca 11 km SSE of the village, by the SE bank	1 m	47°45'57"N, 14°01'10"E	692	2020-08-16 JP	5	this study	2.646 ± 0.008	8.944 ± 0.025	2	6	conf-5
K16-19	<i>R. trichophyllus</i> s. l. (‘intermediate’)	AT; Steiermark (Styria), distr. Murau; Krakaudorf: NE part of Etrachsee lake, ca 6 km NNW of the church	2 m	47°13'39"N, 13°58'37"E	1370	2016-09-04 PK	5	Prančl et al. 2018	2.609 ± 0.007	8.819 ± 0.024	2	14	conf-1
SW-26	<i>R. trichophyllus</i> s. l. (‘intermediate’)	CH; canton Graubünden (Grisons); Poschiavo: Lagh da la Cruseta lake, ca 10 km NNW of the village	< 1 m	46°24'39"N, 10°01'25"E	2304	2019-08-16 JP & ML	7	this study	2.618 ± 0.015	8.849 ± 0.050	1	12	conf-3
SW-27	<i>R. trichophyllus</i> s. l. (‘intermediate’)	CH; canton Graubünden (Grisons); La Punt Chamues-ch: small lake N of the Albulasee lake (over the road), ca 6 km W of the village	< 1 m	46°35'06"N, 09°50'56"E	2291	2019-08-16 JP & ML	5	this study	2.675 ± 0.002	9.042 ± 0.008	1	1	conf-1
SW-30	<i>R. trichophyllus</i> s. l. (‘intermediate’)	CH; canton Graubünden (Grisons); Tschier: Lai da Juata lake, ca 1.3 km NNE of the village	1–2 m	46°38'13"N, 10°20'40"E	2236	2019-08-17 JP & ML	5	this study	2.650 ± 0.011	8.958 ± 0.036	2	14	trich-B
AT 15a	<i>R. trichophyllus</i> B	AT; Oberösterreich (Upper Austria), distr. Gmunden; Bad Goisern: Hallstättersee lake, at the outlet of the Traun River from the lake	1 m	47°36'41"N, 13°37'59"E	508	2018-08-01 ZK & PK & ML	5	this study	2.926 ± 0.012	9.889 ± 0.042	1	18	trich-B

Ref. no.	Taxon / Cytotype	Locality	Depth	Coordinates (WGS 84)	Elevation (m)	Collected	Flow cytometry		DNA sequencing				
							No. of samples	Source	Ratio to <i>Bellis perennis</i> (mean $\pm$ SE)	2C-value (pg) (mean $\pm$ SE)	No. of samples	ITS genotype	cpDNA haplotype
AT-16b	<i>R. trichophyllus</i> B	AT; Oberösterreich (Upper Austria), distr. Gmunden; Obertraun: southern part of Hallstättersee lake, ca 1.2 km SW of the village	2 m	47°32'56"N, 13°40'31"E	520	2018-08-01 ZK & PK & ML	5	this study	2.982 $\pm$ 0.006	10.081 $\pm$ 0.022	1	18	trich-B
B11-025	<i>R. trichophyllus</i> B	AT; Steiermark (Styria), distr. Bruck-Mürzzuschlag; Tragöß-Oberort: Grüner See lake	?	47°32'35"N, 15°03'27"E	776	2011-07-22 F. Kolář	1	Prančl et al. 2018	2.954	9.985	-	?	?
B14-122	<i>R. trichophyllus</i> B	AT; Oberösterreich (Upper Austria), distr. Gmunden; Grünau im Almtal: Almsee lake, SW part	1.5 m	47°44'50"N, 13°57'02"E	589	2014-07-27 ZK	2	Prančl et al. 2018	2.922 $\pm$ 0.029	9.876 $\pm$ 0.098	1	21	trich-B
K16-15; K22-35	<i>R. trichophyllus</i> B	DE; Bayern (Bavaria), distr. Traunstein; Ruhpolding: Förchensee lake, ca 6.5 km SSW of the centre of the village	2–4 m	47°42'29"N, 12°37'11"E	740	2016-07-23 M. Kotlínek; 2022-08-19 PK	6	Prančl et al. 2018 & this study	2.912	9.843	2	17, 19	pelt-15
K18-36	<i>R. trichophyllus</i> B	IT; region Trentino-Alto Adige, prov. Trento; Tiarno di Sopra: Lago d'Ampola lake, ca 2.5 km SW of the village	floating	45°52'16"N, 10°39'13"E	730	2018-07-17 O. Lepšová & J. Lepš	1	this study	2.974	10.053	1	20	pelt
SW-16	<i>R. trichophyllus</i> B	CH; canton Valais; Crans-Montana: Lac des Miriougues lake, N bank	1–2 m	46°17'32"N, 07°27'32"E	1345	2019-08-15 JP & ML	5	this study	2.901 $\pm$ 0.015	9.807 $\pm$ 0.050	1	20	pelt
AT-15c	<i>R. circinatus</i> $\times$ <i>R. confervoides</i>	AT; Oberösterreich (Upper Austria), distr. Gmunden; Bad Goisern: Hallstättersee lake, at the outlet of the Traun River from the lake	1 m	47°36'41"N, 13°37'59"E	508	2018-08-01 ZK & PK & ML	5	this study	2.169 $\pm$ 0.014	7.331 $\pm$ 0.106	1	16	trich-A
AT-17b	<i>R. circinatus</i> $\times$ <i>R. confervoides</i>	AT; Oberösterreich (Upper Austria), distr. Gmunden; Obertraun: southern part of Hallstättersee lake, N bank at the W edge of the village	1–2 m	47°33'38"N, 13°40'37"E	520	2018-08-01 ZK & PK & ML	5	this study	2.177 $\pm$ 0.008	7.357 $\pm$ 0.028	1	16	trich-A
AT-11	<i>R. trichophyllus</i> hybrid	AT; Steiermark (Styria), distr. Liezen; Grundlsee: Toplitzsee lake, ca 6 km ENE of the village, shallow part by the outlet of the Toplitzbach brook	2–3 m	47°38'28"N, 13°55'06"E	730	2018-07-31 ZK & PK & ML	4	this study	2.949 $\pm$ 0.001	9.968 $\pm$ 0.002	1	3	conf-1
AT-15b; B14-119	<i>R. trichophyllus</i> hybrid	AT; Oberösterreich (Upper Austria), distr. Gmunden; Bad Goisern: Hallstättersee lake, at the outlet of the Traun River from the lake	1 m	47°36'41"N, 13°37'59"E	508	2014-07-27 ZK; 2018-08-01 ZK & PK & ML	8	this study	2.997 $\pm$ 0.019	10.131 $\pm$ 0.043	2	2	conf-1
AT-16a	<i>R. trichophyllus</i> hybrid	AT; Oberösterreich (Upper Austria), distr. Gmunden; Obertraun: southern part of Hallstättersee lake, ca 1.2 km SW of the village	3–4 m	47°32'56"N, 13°40'31"E	520	2018-08-01 ZK & PK & ML	3	this study	3.048 $\pm$ 0.004	10.303 $\pm$ 0.012	1	2	trich-B
AT-17a	<i>R. trichophyllus</i> hybrid	AT; Oberösterreich (Upper Austria), distr. Gmunden; Obertraun: southern part of Hallstättersee lake, N bank at the W edge of the village	1–2 m	47°33'38"N, 13°40'37"E	520	2018-08-01 ZK & PK & ML	2	this study	3.049 $\pm$ 0.009	10.305 $\pm$ 0.030	1	2	conf-1
AT-17c	<i>R. trichophyllus</i> hybrid	AT; Oberösterreich (Upper Austria), distr. Gmunden; Obertraun: southern part of Hallstättersee lake, N bank at the W edge of the village	3–4 m	47°33'38"N, 13°40'37"E	520	2018-08-01 ZK & PK & ML	3	this study	3.084 $\pm$ 0.006	10.424 $\pm$ 0.022	1	2	trich-B
B20-011	<i>R. trichophyllus</i> hybrid	AT; Oberösterreich (Upper Austria), distr. Gmunden; Ebensee am Traunsee: Traunsee lake, S bank near the outlet of the Traun River from the lake; floating fragments that likely originated elsewhere in the southern part of the lake	floating	47°48'44"N, 13°47'02"E	423	2020-08-16 JP	5	this study	3.162 $\pm$ 0.004	10.688 $\pm$ 0.015	2	15	trich-B
SW-13	<i>R. trichophyllus</i> s.l. 6x	CH, canton Valais; Orsières: Champex-Lac village, Lac de Champex lake, shallow NW part (by the small island)	1–2 m	46°01'48"N, 07°06'50"E	1468	2019-08-14 JP & ML	5	this study	3.799 $\pm$ 0.016	12.839 $\pm$ 0.054	1	22	pelt