

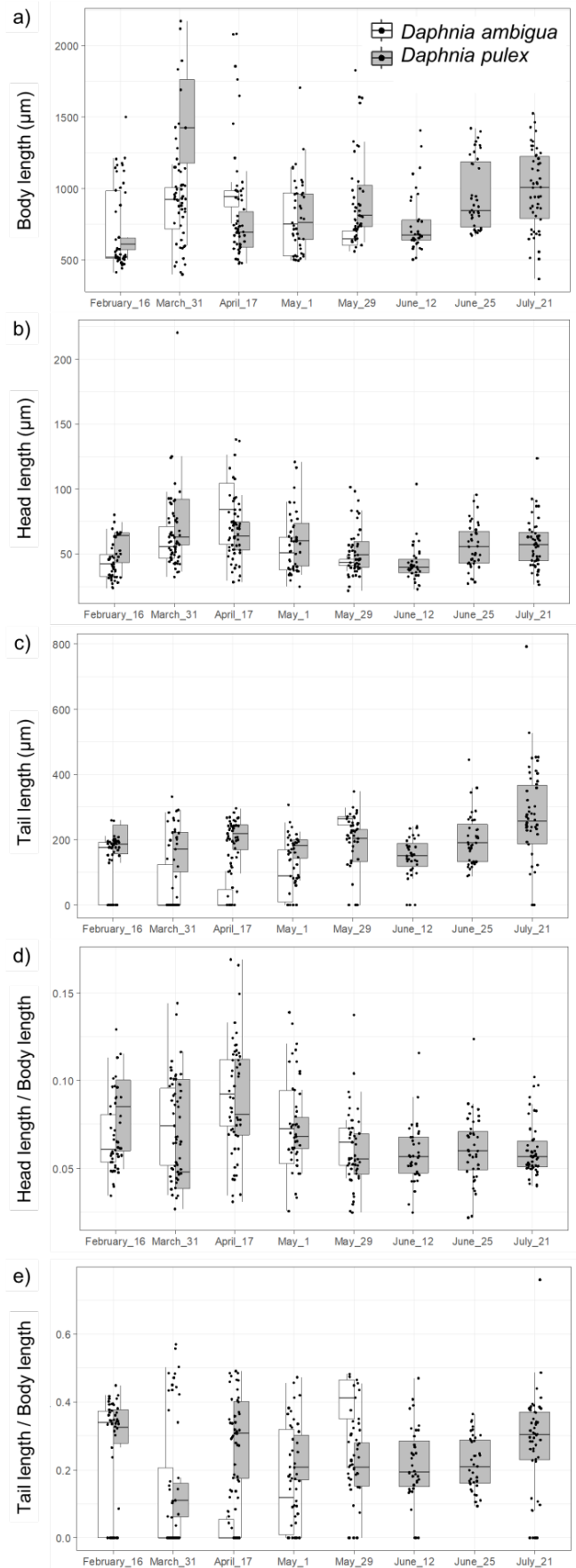
Degree of high phenotypic plasticity in wild populations of *Daphnia* in early spring

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Fig. S1. Seasonal change of morphology of *Daphnia ambigua* and *D. pulex* in Lake Fukami-ike; a) body length, b) head length, c) tail length, d) head length / body length, e) tail length / body length.



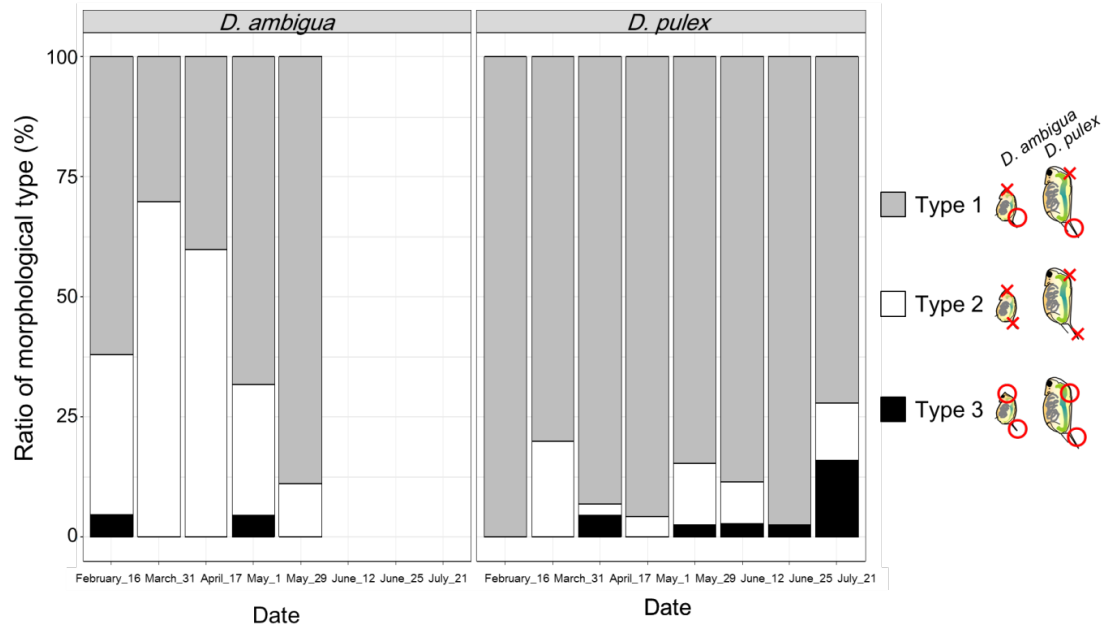


Fig. S2. Seasonal morphological type of *Daphnia ambigua* and *D. pulex* in Lake Fukami-ike. Type 1 is *Daphnia* with tail spine, type 2 is *Daphnia* without any spine, and type 3 is *Daphnia* with tail spine and head spine (*D. ambigua* only), or tail spine and neckteeth (*D. pulex* only).

Tab. S1. Results of Tukey–Kramer multiple comparison tests, comparing single pairs of body length among *Daphnia* species and among seasons for each *Daphnia* species. P-value in bold indicate significant difference ($P < 0.05$); P-values in red show *D. ambigua*, in black show *D. pulex*.

	Feb. 16	Mar. 31	Apr. 17	May. 1	May. 29	Jun. 12	Jun. 25	Jul. 21
Feb. 16	-	<0.001	1	1	0.98	1	0.96	0.85
Mar. 31	0.55	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Apr. 17	0.82	1	-	1	1	1	0.94	0.54
May. 1	1	1	1	-	1	1	0.98	0.76
May. 29	1	1	1	1	-	0.38	1	1
Jun. 12	NA	NA	NA	NA	NA	-	0.22	0.03
Jun. 25	NA	NA	NA	NA	NA	NA	-	1
Jul. 21	NA	NA	NA	NA	NA	NA	NA	-

Tab. S2. Results of Tukey–Kramer multiple comparison tests, comparing single pairs of head length among *Daphnia* species and among seasons for each *Daphnia* species. P-value in bold indicate significant difference ($P < 0.05$); P-values in red show *D. ambigua*, in black show *D. pulex*.

	Feb. 16	Mar. 31	Apr. 17	May. 1	May. 29	Jun. 12	Jun. 25	Jul. 21
Feb. 16	-	0.49	1	1	1	0.98	1	1
Mar. 31	0.02	-	0.62	0.22	<0.001	<0.001	0.007	0.02
Apr. 17	<0.001	0.34	-	1	0.11	<0.001	0.54	0.87
May. 1	0.83	1	0.09	-	0.96	0.08	1	1
May. 29	1	0.91	0.04	1	-	0.83	1	1
Jun. 12	NA	NA	NA	NA	NA	-	0.33	0.05
Jun. 25	NA	NA	NA	NA	NA	NA	-	1
Jul. 21	NA	NA	NA	NA	NA	NA	NA	-

Tab. S3. Results of Tukey-Kramer multiple comparison tests, comparing single pairs of tail length among *Daphnia* species and among seasons for each *Daphnia* species. P-value in bold indicate significant difference (P<0.05); P-values in red show *D. ambigua*, in black show *D. pulex*.

	Feb. 16	Mar. 31	Apr. 17	May. 1	May.29	Jun. 12	Jun. 25	Jul. 21
Feb. 16	-	1	1	1	1	1	1	0.96
Mar. 31	0.3	-	0.94	1	1	1	0.95	0.01
Apr. 17	0.49	1	-	0.98	1	0.43	1	0.18
May. 1	1	1	0.95	-	1	1	0.98	<0.001
May. 29	0.14	<0.001	0.001	0.05	-	1	1	<0.001
Jun. 12	NA	NA	NA	NA	NA	-	0.48	<0.001
Jun. 25	NA	NA	NA	NA	NA	NA	-	0.22
Jul. 21	NA	NA	NA	NA	NA	NA	NA	-

Tab. S4. Results of Tukey-Kramer multiple comparison tests, comparing single pairs of relative head length (head length/body length) among *Daphnia* species and among seasons for each *Daphnia* species. P-value in bold indicate significant difference (P<0.05); P-values in red show *D. ambigua*, in black show *D. pulex*.

	Feb. 16	Mar. 31	Apr. 17	May. 1	May. 29	Jun. 12	Jun. 25	Jul. 21
Feb. 16	-	0.96	1	1	0.65	0.66	0.81	0.77
Mar. 31	0.97	-	0.03	0.95	1	1	1	1
Apr. 17	0.39	0.96	-	0.81	<0.001	<0.001	<0.001	<0.001
May. 1	1	1	0.93	-	0.22	0.24	0.48	0.36
May. 29	1	1	0.9	1	-	1	1	1
Jun. 12	NA	NA	NA	NA	NA	-	1	1
Jun. 25	NA	NA	NA	NA	NA	NA	-	1
Jul. 21	NA	NA	NA	NA	NA	NA	NA-	-

Tab. S5. Results of Tukey-Kramer multiple comparison tests, comparing single pairs of relative tail length (tail length/body length) among *Daphnia* species and among seasons for each *Daphnia* species. P-value in bold indicate significant difference (P<0.05); P-values in red show *D. ambigua*, in black show *D. pulex*.

	Feb. 16	Mar. 31	Apr. 17	May. 1	May. 29	Jun. 12	Jun. 25	Jul. 21
Feb. 16	-	0.61	1	1	0.97	0.99	1	1
Mar. 31	0.01	-	0.07	0.96	1	0.97	0.95	0.15
Apr. 17	0.02	1	-	0.94	0.39	0.65	0.68	1
May. 1	0.85	1	0.79	-	1	1	1	1
May. 29	0.69	<0.001	<0.001	0.07	-	1	1	0.68
Jun. 12	NA	NA	NA	NA	NA	-	1	0.89
Jun. 25	NA	NA	NA	NA	NA	NA	-	0.91
Jul. 21	NA	NA	NA	NA	NA	NA	NA	-

Tab. S6. Ratios of morphological types of *Daphnia ambigua* and *D. pulex* among season in Lake Fukami-ike. Type 1 is *Daphnia* with tail spine, type 2 is *Daphnia* without any spine, and type 3 is *Daphnia* with tail spine and head spine (*D. ambigua* only), or tail spine and neckteeth (*D. pulex* only). Significances of differences between seasons and morphological types were tested by the Pearson's Chi-square test.

Chi-square tests			
	χ^2	df	P-value
<i>Daphnia ambigua</i>	26.2	8	0.001
<i>Daphnia pulex</i>	24.5	14	0.040