

SUPPLEMENTARY MATERIAL 5. The water quality measurement data provided here are for reference purposes to characterize conditions of the spring waters occupied by the springsnails and *Physa* entities discussed in this paper. The values listed are minimum (Min) and maximum (Max) water quality parameters at each spring followed by the total number (*N*) of daily observations found. The average was used whenever multiple measurements were taken during a day. Measurements of water quality for springs are typically taken at the spring orifices where springsnails often occur. Measurements were recorded by numerous researchers, instruments, and at times or dates for which accuracy and precision would vary. Databases from Ledbetter et al. (2017), Sada (2016), and USGS (2018) were used to assist us with compiling data. Water quality data come from various published and unpublished sources listed below. The same water quality measurements may be reported in multiple sources. The period of record for the data is between 16 October 1912 and 31 December 2017. References provided report various water quality parameters. Specific conductance values are typically standardized to 25 °C; however, this standardization could not be confirmed for all sources. Spring brook flow values may be from field measurements, gage monitoring, or experienced observer estimates. Partial measurements of spring brook flow were converted to full flow based on estimates of the percentage measured.

Spring name	Water temperature (°C)			Specific conductance (µS/cm)			pH			Stream flow (L/m)			Species
	Min	Max	<i>N</i>	Min	Max	<i>N</i>	Min	Max	<i>N</i>	Min	Max	<i>N</i>	
Cane Spring	14	15.7	3	302	812	3	7.5	8.3	2	0.5	4.5	3	<i>Pyrgulopsis turbatrix</i>
Cold Creek Spring	9	12	34	301	718	11	7.3	8.1	7	300	9175	23	<i>P. turbatrix</i>
Crystal Spring A/ Crystal Springs	12.7	12.7	1	250	617	2	7.4	7.4	1				<i>P. deaconi</i> , <i>P. turbatrix</i>
Crystal Spring/ Unnamed 24													<i>P. turbatrix</i>
Crystal Spring (Re-emergence)													<i>P. sp2</i>
Grapevine Spring (Bench)	16.8	18.6	2	706	898	2	7.9	7.9	1	5	5	1	<i>P. turbatrix</i>
Grapevine Spring (Tunnel)/ Grapevine Springs	18.7	21.6	8	520	833	7	7.3	8.1	6	5	66.6	1562	<i>P. turbatrix</i> , <i>P. sp.</i>
Green Spot Spring	14.6	14.6	1	822	822	1	6	6	1			0	<i>P. bacchus</i> , <i>Physa</i> sp.
Harris Spring A	13	22.4	5	181	675	3	7.5	7.7	4	20	189.3	5	<i>P. turbatrix</i>
Harris Spring B	13.7	13.7	1	483	483	1			0	2	2	1	<i>P. turbatrix</i>
Horse Spring A/ Unnamed 49	16.3	20.8	5	216	540	4	6.3	7.8	4	1.2	60	4	<i>P. deaconi</i> , <i>P. turbatrix</i>
Horse Spring B/ South of Horse Spring	17.2	21	4	198	1140	4	6.3	8.3	3	2.2	50	4	<i>P. deaconi</i>
Horse Spring C/ Upper Horse Spring	16.3	23	5	378	1150	4	6.8	8.5	4	47.3	200	4	<i>P. deaconi</i>
Horseshutem Spring (Lower)	17.1	18.9	4	277	824	4	7.3	8.4	3	2	20	5	<i>P. turbatrix</i>
Horseshutem Spring (Upper)/ Unnamed 35	13.3	16.9	2	280	407	2				5	25.4	2	<i>P. deaconi</i> , <i>P. sp.</i>
Kiup Spring	15.9	19.9	11	506	778	11	6.8	8.5	8	6	51	1191	<i>P. deaconi</i>
La Madre Spring	10	20.4	8	489	1057	6	7.2	8.1	5	0.6	220.9	31	<i>P. turbatrix</i>
Lost Creek Spring/ Lost Canyon Spring	14	19.6	7	295	929	7	6.8	7.7	7	0.7	350	5	<i>P. turbatrix</i> , <i>Physa</i> sp.
Red Spring	19	21.7	8	310	875	8	7.1	7.9	6	2.2	56.8	8	<i>P. deaconi</i> , <i>Physa</i> sp.
South Rainbow Spring	9.2	26.5	5	425	1027	5	7.4	8	4	1.2	85	1169	<i>Physa</i> sp.
Unnamed 50 Spring	7	16.7	3	370	574	2	7.4	8.1	2	0.2	20	2	<i>P. sp2</i>
Unnamed Spring SE of Corn Creek Station	18.8	18.8	1	320	320	1			0	0.5	0.5	1	<i>P. fausta</i>
Willow Spring (BLM)	15	25	8	210	320	7	7	8	5	0	17	11	<i>P. deaconi</i> , <i>Physa</i> sp.
Willow Spring (USFS)	10.5	12.2	14	285	718	14	6.9	8.2	12	19.2	1699	11	<i>P. turbatrix</i>

## SUPPLEMENTARY MATERIAL 5. Continued.

Spring name	Water temperature (°C)			Specific conductance (µS/cm)			pH			Stream flow (L/m)			Species
	Min	Max	N	Min	Max	N	Min	Max	N	Min	Max	N	
Wood Canyon Spring A	15	18.7	2	268	420	2	8.4	8.4	1	10	10	2	<i>P. turbatrrix</i>
Wood Canyon Spring B	17.4	19.8	3	368	485	3	7.1	7.3	2	20	20	1	<i>P. turbatrrix</i>

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