Table S1. Results of all experiments conducted with froglets

Year	Date of capture	Date of release	Location of capture	Location of arena, side of the river	*N* of released	Number of check	Total *N* of recaptured*	N of Y-O-T-Y froglets**	Exact *N****	*Rayleigh Z;P*	r (CSD)	μ (°)	*N* in first check	*Rayleigh Z;P*	r (CSD)	μ (°)	Wind direction
*Froglets from right side population, captured and released 14-17 days **before** start of migration*																	
2017	September 21	September 21	F1	left	45	4	*48*[a]	45	45	3.07; **0.045**	0.26 (93.9)	182	30	3.09; **0.044**	0.32 (86.4)	202	N
2017	September 20	September 20	F1	right	39	4	*39*	39	39	24.08; **<0.001**	0.79 (39.8)	140	30	22.93; **<0.001**	0.87 (29.7)	137	Calm
2017	September 23	September 23	F1	right	45	4	*33*	33	33	24.47; **<0.001**	0.86 (31.3)	140	28	19.84 **<0.001**	0.84 (33.6)	143	Calm
2017 pooled sample			F1	right	84	4	*72*	72	72	48.45; **<0.001**	0.82 (36.1)	140	58	42.66 **<0.001**	0.86 (31.8)	140	---
*Froglets from right side population, captured and released 1-3 days **before** start of migration*																	
2016	September 18	September 18	F1	left	64	5	*57*	57	57	2.15; 0.12	0.19 (103.7)	---	28	0.23; 0.8	0.09 (125.9)	---	N
2016	September 19	September 19	F1	right	54	3	*49*[b]	48	39	2.46; 0.085	0.25 (95.3)	---	16	2.06; 0.13	0.36 (82)	---	N
2017	October 5	October 5	F1	right	44	2	*44*	44	44	0.49; 0.62	0.11 (121.6)	---	27	0.99; 0.37	0.19 (104)	---	S
2018	September 20	September 20	F1	right	32	2	*34*	33	33	1.15 0.32	0.19 (104.9)	---	28	0.68; 0.51	0.16 (110.6)		SW
2016+2017+2018, 1-3 days before migration, pooled sample			F1	right	130	2-3	*127*	125	116	2.55; **0.029**	0.18 (107)	124	71	2.92 0.054	0.2 (102.3)	---	---
*Froglets from right side population, captured and released **after** start of migration*																	

2016	September 21	September 21	F1	left	84	4	*77*	77	76	4.5; **0.01**	0.24 (96.3)	197	48	4.31; 0.01	0.3 (88.96)	194	Calm
2018	September 23	September 23	F1	right	64	3	*59*	57	56	2.29; 0.1	0.2 (102.4)	---	53	1.8; 0.17	0.18 (105.4)	---	WNW
2018	September 25	September 25	F1	right	36	2	*29*	29	29	1.46; 0.23	0.23 (99)	---	25	2.35; 0.095	0.31 (88.1)	---	W
2018, pooled sample			F1	right	100	2-3	*88*	86	85	8.5; **<0.001** ****	0.2 (102)	NW, SE	78	5.99 **0.002** ****	0.22 (100.2)	N W, SE	
2018	September 20, 23, 25	September 28	F1	right (repeated release)	118	1	117	117	117	17.62; **<0.001**	0.39 (78.8)	298	-//-	-//-	-//-	-//-	WNW
2018	September 23	September 23	M	left	119	2	107	104	104	40.36; **<0.001**	0,62 (55,7)	13	101	42.84; **<0.001**	0,65 (53)	13	WNW
2018	September 26	September 26	M	right	101	3	98	89	89[c]	25.01; **<0.001**	0,53 (64,6)	320	73	21.21; **<0.001**	0,54 (63,7)	328	NW
2015	October 1	October 1	R2	left	54	4	*60*	60	60	10,47; **<0.001**	0.42 (75.7)	354	37	11.1 **<0.001**	0.55 (62.9)	354	W
2016	September 20	September 20	R1	right	70	3	*69*	69	69	29.82; **<0.001**	0.66 (52.5)	337	36	17.85; **<0.001**	0.7 (47.9)	332	Calm
2016	September 20	September 20	R1	left	65	3	*69*	69	67	14.89; **<0.001**	0.47 (70.3)	319	47	16.1; **<0.001**	0.59 (59.3)	312	NW
2018	September 24	September 24	R1	right	70	2	*70*	70	68	22.56; **<0.001**	0.58 (60.2)	331	58	24.58 **<0.001**	0.65 (53.1)	329	WNW
2018	September 28	September 28	R1	left	69	3	*66*	64	63	16.73; **<0.001**	0.52 (65.9)	356	45	12.46; **<0.001**	0.53 (64.9)	358	NW
2015+2016+2018, pooled sample			R2 +R 1	left	188	3	*194*	193	190	38; **<0.001**	0.45 (72.7)	343	137	32.66; **<0.001**	0.49 (68.6)	341	
2016+2018, pooled sample			R1	right	140	2-3	*139*	139	137	52.01; **<0.001**	0.62 (56.4)	334	94	42.33; **<0.001**	0.67 (51.2)	330	

*Froglets from right side population, captured and released **at night after** start of migration*																	
2016	September 22	September 22	R1	left	48	2	*48*	47	29 [d]	7; **<0.001**	0.49 (68)	284	26	6.57; **0.001**	0,5 (67.2)	286	Calm
2017	October 13	October 13	R1	left	45	2	*44*	39	36	10.86; **<0.001**	0.55 (62.7)	63	27	7.43; **<0.001**	0.53 (65)	65	W
2018	September 26	September 26	R1	left	65	2	*62*	57	54	14.21**;** **<0.001**	0.51 (66.2)	23	47	13.77; **<0.001**	0.54 (63.5)	27	W
2016	September 21	September 21	R1	right	51	3	53	53	53	6.5; **0.002**	0.35 (82.9)	336	43	3.52; **0.029**	0.29 (89.5)	341	Calm
2018	September 27	September 27	R1	right	70	2	*69*	60	57	25.9; **<0.001**	0.67 (50.9)	317	55	25.79; **<0.001**	0.69 (49.9)	317	Calm
2016+2017+2018, pooled sample			R1	left	158	2	*154*	143	119	13.84; **<0.001**	0.34 (84)	21	100	11.86; **<0.001**	0,34 (83.6)	20	
2016+2018, pooled sample			R1	right	121	2-3	*122*	113	110	28.82; **<0.001**	0.51 (66.3)	324	98	24.72; **<0.001**	0.5 (67.2)	323	Calm
*Froglets from left side population, captured and released **after** start of migration*																	
2017	October 7	found in arena A*****		left		1	*46*	42	42	8.79; **<0.001**	0.46 (71.7)	194	Only one check				---
2017	October 7	October 8	arena A	right	42	2	*44*	42	42	10.71; **<0.001**	0.51 (66.9)	185	31	14.11; **<0.001**	0.68 (50.8)	175	Calm
2017	October 10	October 11	R3	left	50	4	*46*	44	44	17.73; **<0.001**	0.64 (54.62)	108	26	16.26; **<0.001**	0.79 (39.3)	107	SSW
2018	September 30	September 30	R3	left	31	3	*31*	28	28	14.64; **<0.001**	0.72 (46.1)	173	11	7.37; **<0.001**	0.82 (36.3)	170	W
2018	September 29	September 29	R3	right	82	4	*77*[c]	68	68	27.9; **<0.001**	0.64 (54.1)	189	65	27.88; **<0.001**	0.66 (52.7)	190	Calm
2017+2018, pooled sample			R3	left	81	3-4	*78*	72	72	23.07; **<0.001**	0.57 (61.1)	134	37	18.26; **<0.001**	0.7 (48.2)	125	
*Froglets from right side population, captured **before** and released **after** start of migration (kept in captivity)*																	
2013	September 13-20	September 21	F2	right	65	3	*63*	63	63	16.86; **<0.001**	0.52 (65.78)	316	49	13.07; **<0.001**	0.52 (65.9)	312	N

2015	September 20-25	September 28	F1 & F2	left	69	3	*63*	63	63	14.99; **<0.001**	0.49 (68.6)	132	62	16.18; **<0.001**	0.51 (66.4)	132	WNW
*Froglets from right side population, captured and released **after** start of migration, but kept in captivity for 3 days before release*																	
2016	September 21	September 24	R1	right	58	3	*57*	56	55	12,78; **<0.001**	0.56 (61.7)	341	30	8.42; **<0.001**	0.53 (64.6)	1	Calm
2016	September 21	September 24	R1	left	59	3	*54*	54	51	18.81; **<0.001**	0.61 (57.2)	350	16	9.93; **<0.001**	0.79 (39.5)	354	Calm

Notes: F, captured in forest; M, captured in the meadow; R, captured at the river bank near water.
μ, mean vector or compass directions (e.g. N for North, SW for Southwest, NNE for North-North-East, etc.); r, length of mean vector; CSD, circular standard deviation in degrees; significant differences are highlighted in bold.

* Total number of recaptured froglets, includes individuals with body length >38 mm and froglets recaptured inside the arena outside of the groove with traps.
** Total number of recaptured young-of-the-year froglets with body length ≤38 mm includes individuals recaptured inside the arena outside of the groove with traps.
*** Number of froglets with body length ≤38 mm and recaptured only in traps. These specimens were included in further analysis.
**** Since we suspected a bimodal distribution, the Rayleigh test was used after the doubling the angles procedure (Batschelet 1981).
***** Froglets that were found in the traps of arena A (left side of the river) after arena wall was broken by the wind; these froglets correspond to those caught in the meadow.

[a] three of two-year-old specimens from left side population were captured.
[b] Nine specimens were captured near the center.
[c] A large number of two-year-old specimens were captured.
[d] The majority of the froglets was found outside of traps.

Table S2. Survey of potential hibernation sites of the froglets in winter and spring of 2019

Site	Environmental remarks	Result of revisions
Bardinskii gully (capture site F1)	The slopes and bottom of the gully are formed by soft and moist soil that did not freeze during the winter under snow (January 25, the temperature dropped to -26°C) and was inhabited by insect larvae. Notably, the number of froglets in the gully, where they apparently come to eat, increases 2 weeks before the start of migration.	On April 6 (snow did not melt completely), we found two young froglets in the ground at approximately 10 cm depth; they were very inactive and most likely spent the winter there. No adult specimens were found. Like Bannikov (Bannikov, 1940), we interpret these young individuals as the specimens "late" for migration into the river before the final temperature drop. This delay can be associated with accumulation of fat essential for the hibernation. Such correlation between the start of migration and storing fat was observed in birds (Dolnik and Blyumental, 1967; King and Farner, 1963; Sandberg, 2003). Assembling in humid places before migration makes it possible for "late" frogs to survive the winter by burrowing into moist soil, where the temperature would not drop below zero due to the decay processes.
Stream in the Bardinskii gully	The stream had running water under ice even after severe frosts (-26°C); during five surveys (January-March),	We were unable to find young-of-the-year common frogs. However, the wintering in general is possible, since on March 30 (snow did not melt), a young-of-the-year common toad and numerous live insect larvae were found in soil of the bottom of the stream (12 cm depth).
Moskva River	The ice on the Moskva River broke up in late March.	on April 6, the first adult frogs appeared on the river bank opposite of the pond 4 and traveled in its direction; on April 9, we found the first froglets (approx. a dozen specimens) emerging from the river and moving towards the forest.
Ponds		We found no froglets emerging from the ponds.