Figure S1. Photographic panorama-view from one of the successful homing trajectory points showing the habitat structure. A) Photograph taken from higher-end perching height of a calling *A. trivittata* (approximately 1 m). B) Photograph taken from a usual perching height of a moving *A. trivittata* (approximately 0.3 m).

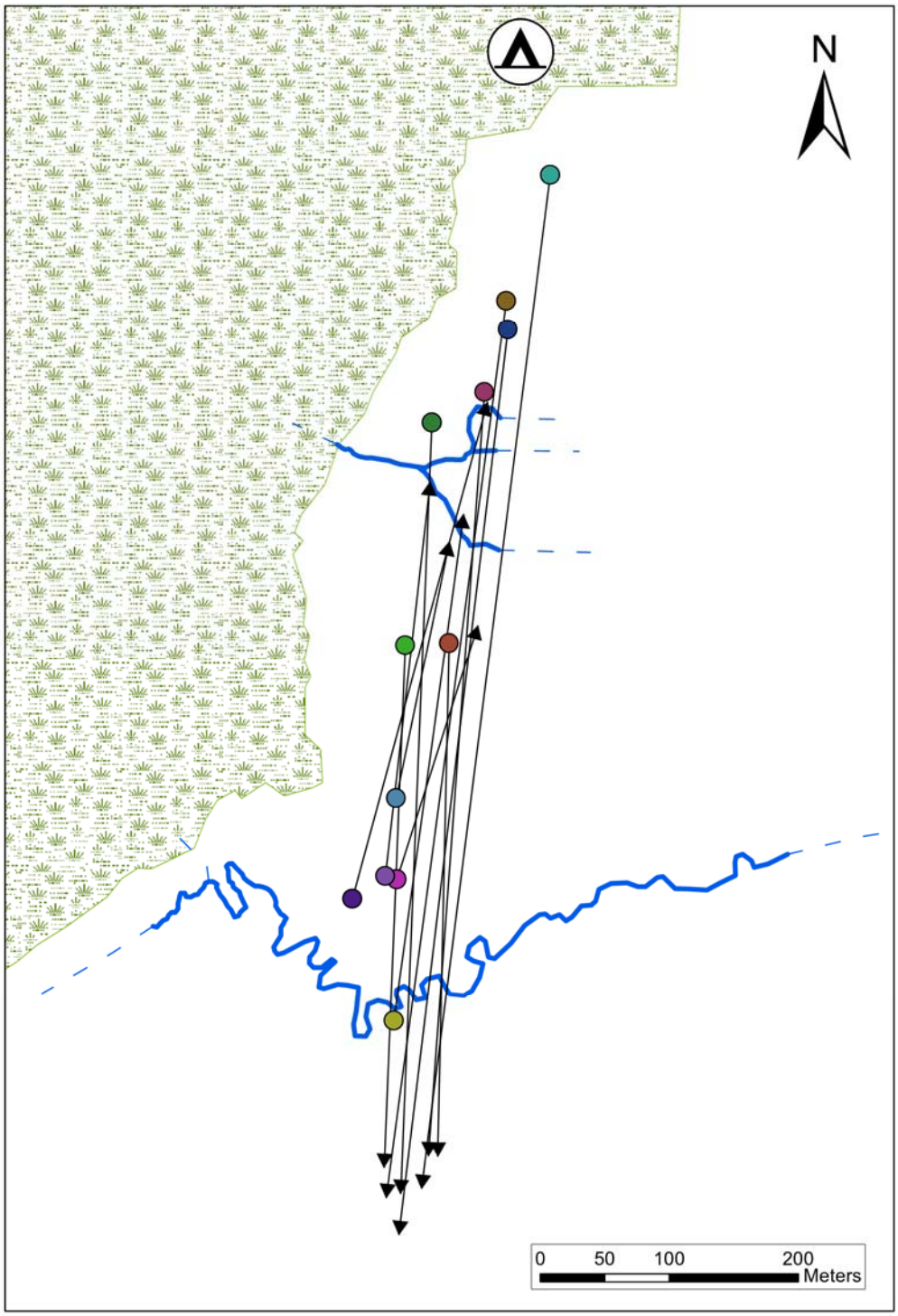

Figure S2. Map of the study area showing the territories (colored circles) and the release sites (arrowheads) of 12 translocated males. The area filled with “tussock” represents the pastureland bordering the study area. Blue lines represent the creeks. Camp symbol represents the field station.

Figure S3. Photograph of a male *A. trivittata* calling in his territory while wearing a miniature radio transmitter attached with a waistband made from fine silicone tubing.

Figure S4. Photograph of a male *A. trivittata* being placed in an airtight opaque container used for transporting frogs between the capture and the release site.

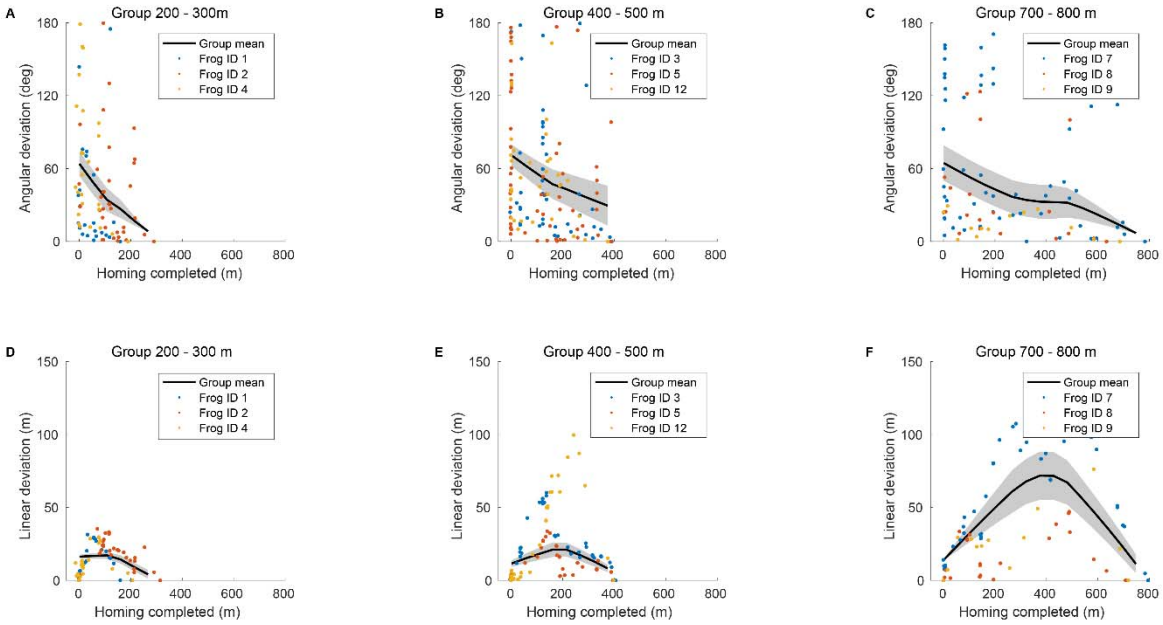

Figure S5. Homing precision as a function of homing path completed. Each plot shows three frogs homing from 200 – 300 m, 400 – 500 m, and 700 – 800 m back to their territory (total n = 9), where the far-left corresponds to the release site and far-right to the arrival at the home territory. Colored dots represent tracking points along the trajectory and each line represents a smoothed group mean. The shading represents the respective standard errors of each mean. The group mean and standard error were calculated using 50 m averaging bins and smoothed with a 10-point sliding window. The homing precision measured as A) B) C) absolute angular deviation from the ideal angle (i.e., home direction) and D) E) F) linear deviation from a straight-line path from the release site to the home territory.

Frog ID	Homing success	Transloc. dist. [m]	Homing dur. [h]	Mean speed [m/h]	Max. speed [m/h]	Linear deviation [m]	Abs. ang. deviation [deg]	SC	Orient. 5-20 m [deg]	Orient. 20-50 m [deg]
1 (Señor Estanque)	+	200	120.0	4.3	11.4	14.6	35.5	0.9	287.2	331.1
2 (Lianida)	+	300	137.8	5.5	31.7	19.5	40.0	0.8	311.8	NA
3 (Phoneutria)	+	400	190.9	6.0	32.1	31.3	54.8	0.8	172.2	28.4
4 (Mr. Bullet Ant)	+	200	94.8	7.6	30.1	11.7	67.7	0.6	221.3	19.3
5 (Ricky Martin)	+	400	215.8	4.4	38.3	9.0	55.8	0.8	70.3	NA
6 (Drunken Sailor)	-	600	NA	10.5	37.7	70.3	75.6	0.2	5.7	206.2
7 (Herr Humboldt)	+	800	264.8	8.8	38.1	52.1	63.3	0.8	297.6	327.9
8 (La Tigresa)	+	700	89.4	19.4	55.4	18.8	46.5	0.9	336.0	3.2
9 (Speedy Gonzales)	+	700	45.2	39.9	64.2	30.3	13.5	0.9	335.6	NA
10 (Mick Jagger)	+*	400	NA	6.5	40.5	NA	NA	NA	318.2	281.2
11 (Adam)	-	600	NA	8.7	39.6	12.0	57.7	0.2	151.0	NA
12 (Delfin)	+	400	191.2	6.4	23.5	28.6	55.9	0.7	277.4	3.2

Table S1: Summary table of all measured variables for each translocated frog: homing success ("+" stands for successful homing), translocation distance, homing duration, mean and maximum speed, mean linear deviation from straight line trajectory to home, mean absolute angular deviation from homeward orientation, straightness coefficient, initial orientation bearings within 5 – 20 m and 20 – 50 m from the release site.
* Transmitter malfunction. Frog recaptured home but full trajectory not available.

Dataset 1

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Dataset 2

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