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Galarza, J. A., Jovani, R., Cerdá, X., Rico, C., Barroso, Á. and Boulay, R. 2012. Frequent colony relocations do not result in effective dispersal in the gypsy ant *Aphaenogaster senilis.* – Oikos 121: 605–613.

Appendix A1

Figure A1. *Aphaenogaster senilis* nest entrance ornamented with flower petals. Credit: Alain Lenoir.

Table A1. Data from the 21 focal colonies used for mark-recapture and random-walk simulations.

Population	Colony ID	Date of release	Number of workers	Date last seen	Number of relocations	Average relocation distance (m)	Cumulated distance from first location (m)	Simulated cumulated distance from first location (m)
Beles	619	03/08/06	1620	09/13/06	9	3.9 ± 0.9	35.1	46.3 ± 14.7
	627	03/15/06	2243	05/17/06	4	3.4 ± 2.2	13.4	4.3±1.3
	628	03/08/06	454	05/31/06	4	5.8 ± 2.1	23.3	13.7 ± 2.6
	629	03/08/06	1569	11/01/06	7	4.0 ± 1.4	28.0	28.8 ± 9.0
	632	02/15/06	1203	10/18/06	8	4.3 ± 1.4	34.3	103.6 ± 40.7
	646	03/29/06	1108	06/14/06	4	4.3 ± 1.9	17.3	11.4 ± 2.4
	647	03/08/06	1786	06/07/06	5	3.5 ± 1.7	17.6	9.0 ± 2.5
Jaulon	601	03/08/06	1534	10/11/06	10	2.1 ± 0.9	21.3	23.6 ± 8.2
	602	02/08/06	1733	10/18/06	6	4.1 ± 1.6	24.5	48.2 ± 12.0
	604	02/08/06	1835	05/24/06	4	1.4 ± 0.4	1.9	8.1 ± 2.1
	605	02/08/06	1556	10/18/06	7	1.6 ± 0.3	11.3	19.4 ± 6.0
	606	05/03/06	1217	11/08/06	6	0.8 ± 0.1	3.8	6.2 ± 1.8
	608	04/05/06	646	11/08/06	7	2.0 ± 0.7	14.2	28.2 ± 6.3
	616	05/03/06	1836	10/04/06	3	2.6 ± 0.6	7.8	11.5 ± 3.8
	617	02/08/06	1203	10/11/06	10	1.1 ± 0.2	11.4	27.1 ± 8.7
Algaida	630	05/17/06	1192	06/21/06	3	4.7 ± 2.7	14.1	4.4 ± 1.2
	639	04/05/06	1628	06/07/06	4	4.2 ± 1.9	16.9	9.4 ± 3.0
	640	03/08/06	1467	10/25/06	8	5.1 ± 1.3	40.8	69.9 ± 25.6
	643	05/24/06	2132	09/27/06	7	6.1 ± 1.4	33.4	68.6 ± 20.2
	644	05/24/06	1055	08/16/06	6	4.6 ± 1.4	27.5	28.5 ± 8.7
	645	05/24/06	1502	08/16/06	7	3.9 ± 1.1	27.3	30.5 ± 9.6

Table A2. Spatial autocorrelation analyses for each population.

Pop *Comedero*																				
n	1	4	3	4	1	1	2	1	2	1	1	2	5	0	6	3	3	1	2	0
Distance Class (m)	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
r	0.10	-2.87	-2.48	0.10	-3.28	0.43	-0.22	0.10	0.10	0.10	0.10	-5.42	0.62	0.00	1.71	1.32	1.64	0.46	0.10	0.00
U	2.25	1.50	2.63	3.67	1.98	2.66	2.58	2.25	2.62	2.66	1.98	2.74	1.16	0.00	2.59	2.19	1.53	1.72	1.68	0.00
L	-2.5	-2.26	-3.00	-3.57	-2.90	-1.69	-2.46	-2.90	-2.73	-3.28	-3.28	-4.48	-2.97	0.00	-3.05	-2.12	-2.56	-1.95	-2.08	0.00
p(r-rand >= r-data)	0.04	0.99	0.96	0.66	1.00	0.00	0.84	0.80	0.79	0.80	0.78	0.99	0.14	0.00	0.07	0.09	0.02	0.20	0.65	0.00
Pop *Visita*																				
n	5	14	13	8	0	0	7	3	6	8	2	1	3	3	5	6	2	2	2	2
Distance Class (m)	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
r	2.04	1.09	-0.18	-4.81	0.00	0.00	-0.02	0.69	-0.20	0.50	2.20	0.05	-2.59	-1.05	1.61	0.50	0.37	1.06	1.49	0.05
U	2.59	1.13	1.76	1.06	0.00	0.00	1.25	2.28	2.05	1.42	2.30	2.50	1.98	2.03	1.34	2.00	2.13	2.11	1.58	2.56
L	-2.8	-1.37	-1.15	-2.22	0.00	0.00	-2.00	-1.51	-1.97	-1.90	-3.37	-2.46	-2.56	-3.82	-1.20	-2.03	-1.81	-2.23	-2.62	-1.96
p(r-rand >= r-data)	0.02	0.01	0.34	0.01	0.00	0.00	0.46	0.83	0.39	0.79	0.97	0.74	0.02	0.08	0.98	0.81	0.69	0.89	0.97	0.66
Pop *Beles*																				
n	6	21	21	5	4	3	10	13	10	17	10	25	25	19	18	4	8	6	9	7
Distance Class (m)	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
r	0.11	0.04	-4.39	-1.14	0.04	-3.64	1.31	-3.12	-1.61	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	6.17	0.04
U	3.99	2.24	10.10	3.37	3.11	4.03	2.18	4.28	6.12	3.86	4.10	5.22	2.86	2.79	2.75	6.08	3.35	3.21	3.70	2.07
L	-3.5	-9.40	-7.30	-4.81	-5.13	-4.06	-2.81	-4.58	-4.32	-5.32	-5.62	-8.24	-2.90	-3.21	-12.3	-9.87	-3.27	-6.81	-3.63	-2.53
p(r-rand >= r-data)	0.06	0.86	0.95	0.92	0.85	0.06	0.08	0.96	0.94	0.92	0.87	0.88	0.86	0.79	0.88	0.91	0.89	0.88	0.02	0.87

N: number of pairwise comparisons per distance class. r: spatial autocorrelation and upper (U) and lower (L) 95% CI as determined by 999 random permutations.
p: probability of random achieving a *r* value grater or equal than the observed.

Table A3. AIC-based model selection. Details of backward model selection based on pairwise log likelihood test of concurrent models. The best model is indicated in bold. Preloc: probability of relocation; Dreloc: relocation distance; RelocPrev: having relocating the week befote or not; Wk: week of sampling; Sp: sampling site; Col: colony.

Probability of relocation

Model (R script)	AIC	Comparison	χ^2	DF	p
(1) Preloc~RelocPrev+Wk+(Wk|Sp/Col)	635.10				
(2) Preloc~RelocPrev+Wk+(1|Sp/Col)	629.38	1 vs 2	2.28	4	0.6842
(3) Preloc~RelocPrev+(1|Sp/Col)	627.66	2 vs 3	0.2806	1	0.5963
(4) Preloc~1+(1|Sp/Col)	640.00	3 vs 4	14.339	1	<0.001

Dispersal distance

Model (R script)	AIC	Comparison	χ^2	DF	p
(1) Dreloc~Wk+(Wk|Sp/Col)	345.59				
(2) Dreloc~Wk+(1|Sp/Col)	338.02	1 vs 2	0.4292	4	0.98
(3) Dreloc~1+(1|SpCol)	339.33	2 vs 3	3.2980	1	0.069