

Appendix 1: Supplemental material for the paper "Diet composition of a declining steppe bird, the Little Bustard (*Tetrax tetrax*), in relation to farming practices" by Carolina Bravo, Francesc Cuscó, Manuel B. Morales and Santi Mañosa

Table A1. 1. Diet diversity (H') and green plant families identified in Little Bustard diet sorted by irrigated and dry farmland area. Diet composition is shown as the average (\pm SD) percentage of microscope fields with presence of each family per dropping. Infrequent families (Caryophyllaceae, Boraginaceae, Dipsacaceae, Euphorbiaceae, Malvaceae, Plantaginaceae, Primulaceae, Resedaceae, Rubiaceae, Scrophulariaceae) are grouped in "other" category. *N* represents the total number of collected droppings and *Date* represents date of collection.

	Date	N	Diversity (H')	Cultivated leguminosae (%)	Weedy leguminosae (%)	Cultivated gramineae (%)	Weedy gramineae (%)	Papaveraceae (%)	Compositae (%)	Cruciferae (%)	Convolvulaceae (%)	Labiatae (%)	Other (%)	
Irrigated area			138	0.6 \pm 0.2	67.0\pm28.4	0.1\pm0.1	0.7 \pm 1.7	0.9\pm1.1	1.2\pm1.6	2.0\pm2.4	25.2\pm25.5	0.1 \pm 0.5	1.4\pm3.4	1.5\pm2.1
1. Anglesola	Jan. 2013	20	0.4 \pm 0.3	86.7 \pm 11.5		0.5 \pm 2.1			0.1 \pm 0.3	9.3 \pm 8.3		2.4 \pm 3.8	1.1 \pm 2.3	
2. Arbeca	Nov/Dec. 2011/12	20	0.8 \pm 0.2	60.6 \pm 14.2	0.2 \pm 0.6	0.1 \pm 0.3		0.4 \pm 0.9	3.9 \pm 3.9	31.8 \pm 14.8	0.4 \pm 1.1	0.7 \pm 2.9	2.1 \pm 4.1	
3. Castellnou S.	Jan. 2012	10	0.3 \pm 0.3	90.0 \pm 10.6		4.9 \pm 9.6	0.1 \pm 0.4	0.2 \pm 0.8		3.3 \pm 5.2		1.2 \pm 1.5	0.2 \pm 0.5	
4. Torregrossa	Dec. 2011	10	0.7 \pm 0.4	79.1 \pm 12.7	0.8 \pm 1.6			1.7 \pm 2.9	0.1 \pm 0.4	9.3 \pm 5.5	0.1 \pm 0.4	8.0 \pm 5.3	1.0 \pm 1.2	
5. Miralcamp	Nov. 2011	13	0.6 \pm 0.4	0.8 \pm 2.0	0.3 \pm 0.5	0.1 \pm 0.4	2.5 \pm 4.6	2.6 \pm 7.0	5.2 \pm 5.5	83.9 \pm 12.8	0.3 \pm 0.8	3.0 \pm 5.0	1.3 \pm 1.6	
6. El Poal	Nov. 2013	10	0.8 \pm 0.2	68.4 \pm 10.6			1.6 \pm 4.9	4.3 \pm 5.2	1.4 \pm 2.5	23.9 \pm 7.9			0.5 \pm 1.1	
7. Sidamon	Jan. 2012	10	0.7 \pm 0.5	72.4 \pm 30.7			2.3 \pm 6.4	0.0 \pm 0.0	5.5 \pm 4.7	18.0 \pm 20.0		0.2 \pm 0.5	1.7 \pm 2.9	
8. La Puebla de M.	Dec/Jan. 2003/05	45	0.5 \pm 0.3	77.3 \pm 13.2	0.0 \pm 0.1		0.5 \pm 0.9	0.1 \pm 0.4	0.0 \pm 0.3	21.8 \pm 12.7		0.2 \pm 0.5	0.1 \pm 0.2	
Dryland area			219	1.3 \pm 0.4	26.5\pm28.4	2.0\pm4.2	11.0 \pm 10.6	2.8\pm2.5	8.3\pm19.2	16.3\pm15.2	21.6\pm15.1	1.5 \pm 5.1	6.3\pm13.2	3.9\pm3.4
9. C. de Calatrava	Dec. 2011	84	1.7 \pm 0.3	15.4 \pm 14.7	12.0 \pm 10.4	0.0 \pm 0.2	1.3 \pm 1.4	9.4 \pm 9.5	29.3 \pm 20.7	23.0 \pm 17.2	1.6 \pm 4.5	4.9 \pm 9.7	3.2 \pm 3.8	
10. Campo Real	Nov. 2012	8	1.7 \pm 0.2	20.8 \pm 20.0		0.2 \pm 0.4	7.0 \pm 3.8	0.2 \pm 0.4	1.9 \pm 2.1	35.0 \pm 11.1	1.0 \pm 0.9	27.9 \pm 16.3	6.1 \pm 7.4	
11. Valdepiélagos	Jan. 2012	15	0.7 \pm 0.2	69.6 \pm 16.0		26.8 \pm 16.9	0.9 \pm 1.4		0.9 \pm 2.6	0.2 \pm 0.6		0.2 \pm 0.4	1.6 \pm 3.1	
12. Cobeña	Dec. 2011	10	1.3 \pm 0.3	0.4 \pm 0.8	3.2 \pm 3.0	22.3 \pm 16.5	1.5 \pm 2.2		21.8 \pm 17.4	47.1 \pm 15.9	2.6 \pm 4.5	0.1 \pm 0.4	1.1 \pm 0.8	
13. Daganzo de A.	Jan. 2011	17	1.2 \pm 0.2	1.5 \pm 6.4	0.3 \pm 0.7	14.6 \pm 10.3	0.8 \pm 1.6	55.2 \pm 12.6	15.8 \pm 12.6	9.5 \pm 9.9	0.1 \pm 0.6	0.5 \pm 1.2	1.7 \pm 2.9	
14. Valdeterres J.	Jan. 2010	25	0.9 \pm 0.4	70.6 \pm 23.2			4.7 \pm 5.4		7.3 \pm 8.5	13.7 \pm 15.2		3.2 \pm 6.3	0.6 \pm 2.0	
15. Villanueva T.	Dec/Jan. 2011/13	54	1.2 \pm 0.4	25.9 \pm 23.9	0.6 \pm 3.3	16.0 \pm 25.6	5.5 \pm 7.6	0.6 \pm 2.2	8.1 \pm 8.7	28.6 \pm 26.5	0.4 \pm 1.3	13.2 \pm 19.5	1.1 \pm 2.2	
16. T. de Velasco	Nov. 2012	6	1.4 \pm 0.2	7.3 \pm 8.2		7.9 \pm 6.0	1.0 \pm 1.9	1.2 \pm 1.5	45.0 \pm 22.6	15.5 \pm 8.2	21.8 \pm 16.2		0.2 \pm 0.5	
TOTAL			357	0.9 \pm 0.4	46.7\pm34.5	1.0\pm3.0	5.8 \pm 9.0	1.9\pm2.1	4.7\pm13.7	9.1\pm12.8	23.4\pm20.3	1.8 \pm 5.4	4.1\pm7.3	1.5\pm1.5

Table A1.2. Plant species identified in Little Bustard diet sorted by irrigated (n=8) and dry (n=8) farmland areas. Frequency of each plant species is expressed as the average percentage (\pm SD) of droppings in which the species appears, and diet composition is shown as the average (\pm SD) percentage of microscope fields with presence of each species per dropping. Averages were based on the mean of the 8 sampling sites per agroecosystem.

Family	Species	Frequency (%)		Diet composition (%)	
		Irrigated area	Dry farmland area	Irrigated area	Dry farmland area
Boraginaceae	<i>Echium plantagineum</i>		4.0 \pm 9.3		0.17 \pm 0.39
	<i>Heliotropium europaeum</i>		0.1 \pm 0.4		
	<i>Lithospermum apulum</i>	1.3 \pm 3.3	0.7 \pm 2.1	0.04 \pm 0.12	0.01 \pm 0.02
	<i>Lithospermum arvensis</i>	1.7 \pm 3.6	1.2 \pm 2.3	0.05 \pm 0.14	0.09 \pm 0.16
Caryophyllaceae	<i>Stellaria media</i>	1.3 \pm 3.3	7.4 \pm 18.8	0.03 \pm 0.08	0.14 \pm 0.34
Compositae	<i>Anacyclus clavatus</i>	28.2 \pm 29.2	58.3 \pm 42.6	1.68 \pm 2.00	11.53 \pm 15.06
	<i>Andryala integrifolia</i>		25.4 \pm 28.4		2.62 \pm 4.30
	<i>Bellis perennis</i>	0.6 \pm 1.7		0.01 \pm 0.02	
	<i>Calendula arvensis</i>		0.2 \pm 0.7		0.00 \pm 0.01
	<i>Carthamus lanatus</i>		6.7 \pm 11.8		0.16 \pm 0.34
	<i>Cnicus benedictus</i>		2.1 \pm 5.9		0.12 \pm 0.35
	<i>Crepis sancta</i>		0.4 \pm 1.3		0.00 \pm 0.01
	<i>Crepis vesicaria</i>	1.4 \pm 3.7	11.8 \pm 16.0	0.03 \pm 0.09	0.30 \pm 0.44
	<i>Filago sp</i>		7.0 \pm 13.4		0.65 \pm 1.71
	<i>Picris echinoides</i>		19.7 \pm 25.7		0.53 \pm 0.67
	<i>Picris sp</i>		1.9 \pm 4.2		0.04 \pm 0.09
	<i>Senecio vulgaris</i>	2.5 \pm 4.3	0.1 \pm 0.4	0.03 \pm 0.06	0.00 \pm 0.01
	<i>Silybum marianum</i>	0.3 \pm 0.7	0.5 \pm 1.0	0.00 \pm 0.01	0.01 \pm 0.02
	<i>Tolpis barbata</i>		0.1 \pm 0.4		0.01 \pm 0.02
Undetermined	7.0 \pm 13.0	9.1 \pm 20.4	0.60 \pm 1.07	3.30 \pm 4.09	
Convolvulaceae	<i>Convolvulus arvensis</i>	3.9 \pm 5.0	35.0 \pm 36.2	0.09 \pm 0.14	3.45 \pm 7.48
Cruciferae	<i>Alyssum minus</i>		0.9 \pm 2.5		0.03 \pm 0.08
	<i>Biscutella auriculata</i>		9.7 \pm 21.7		1.11 \pm 2.59

Family	Species	Frequency (%)		Diet composition (%)	
		Irrigated area	Dry farmland area	Irrigated area	Dry farmland area
	<i>Brassica repanda</i>		0.1 ± 0.4		0.02 ± 0.05
	<i>Camelina micrarpa</i>	1.3 ± 3.3		0.01 ± 0.04	
	<i>Capsella bursa-pastoris</i>	91.1 ± 7.8	42.3 ± 24.5	24.34 ± 25.62	5.24 ± 5.88
	<i>Cardaria draba</i>		3.1 ± 8.8		0.64 ± 1.80
	<i>Descurainia sophia</i>	0.3 ± 0.7	0.7 ± 2.1	0.00 ± 0.01	0.01 ± 0.03
	<i>Diplotaxis eruroides</i>		36.6 ± 38.5		8.47 ± 15.89
	<i>Malcolmia africana</i>		0.1 ± 0.4		
	<i>Neslia paniculata</i>		13.4 ± 19.6		1.77 ± 3.69
	<i>Raphanus raphanistrum</i>		2.9 ± 4.5		0.27 ± 0.48
	<i>Sisymbrium irio</i>	4.5 ± 6.9	3.6 ± 6.8	0.20 ± 0.45	0.71 ± 1.35
	Undetermined	20.1 ± 26.3	26.9 ± 32.3	0.22 ± 0.50	0.64 ± 1.67
Dipsacaceae	<i>Scabiosa sp</i>		3.2 ± 5.1		0.06 ± 0.11
	<i>Scabiosa stellata</i>	1.3 ± 3.3	0.2 ± 0.7	0.02 ± 0.06	0.00 ± 0.01
Euphorbiaceae	<i>Euphorbia helioscopia</i>		0.5 ± 1.4		0.03 ± 0.08
Geraniaceae	Undetermined	3.8 ± 7.0	8.0 ± 17.7	0.09 ± 0.18	1.86 ± 2.53
Gramineae	<i>Bromus diandrus</i>		2.4 ± 4.5		0.09 ± 0.22
	<i>Bromus sp</i>		0.7 ± 2.1		0.02 ± 0.05
	<i>Hordeum murinum</i>	6.9 ± 18.4	32.4 ± 11.8	0.31 ± 0.89	0.84 ± 0.38
	<i>Hordeum vulgare</i>	2.6 ± 3.8	55.5 ± 44.5	0.08 ± 0.17	10.79 ± 10.40
	<i>Lolium rigidum</i>	3.8 ± 7.0	0.7 ± 2.1	0.46 ± 0.87	0.01 ± 0.04
	<i>Triticum aestivum</i>	3.8 ± 9.9	1.5 ± 2.8	0.61 ± 1.73	0.18 ± 0.35
	Undetermined	6.9 ± 11.6	27.9 ± 34.8	0.01 ± 0.02	0.00 ± 0.01
Labiatae	<i>Lamium amplexicaule</i>	32.8 ± 27.7	34.4 ± 33.0	1.95 ± 2.67	6.24 ± 9.83
Leguminosae	<i>Astragalus hamosus</i>		10.3 ± 29.0		1.16 ± 3.27
	<i>Astragalus sp</i>	2.8 ± 7.3		0.03 ± 0.09	
	<i>Medicago polymorpha</i>	2.5 ± 6.6		0.03 ± 0.08	
	<i>Medicago sativa</i>	89.0 ± 25.5		66.90 ± 28.34	

Family	Species	Frequency (%)		Diet composition (%)	
		Irrigated area	Dry farmland area	Irrigated area	Dry farmland area
	<i>Medicago sp</i>		37.2 ± 28.3		5.39 ± 7.63
	<i>Ornithopus compressus</i>		11.9 ± 27.7		0.48 ± 1.10
	<i>Trifolium angustifolium</i>		3.5 ± 7.1		0.04 ± 0.07
	<i>Trigonella monspeliaca</i>	0.3 ± 0.7	9.4 ± 26.5	0.00 ± 0.01	0.31 ± 0.89
	<i>Vicia sativa</i>		25.0 ± 45.1		17.15 ± 31.39
	<i>Vicia sp</i>	3.8 ± 7.0	24.0 ± 30.4	0.10 ± 0.21	3.91 ± 6.22
Malvaceae	<i>Malva sylvestris</i>		3.5 ± 5.1		0.04 ± 0.06
Papaveraceae	<i>Papaver hybridum</i>		6.3 ± 17.7		0.15 ± 0.42
	<i>Papaver rhoeas</i>	24.4 ± 23.3	27.6 ± 43.6	1.17 ± 1.58	8.17 ± 19.29
Plantaginaceae	<i>Plantago lagopus</i>	0.9 ± 1.7	1.2 ± 2.3	0.02 ± 0.06	0.01 ± 0.02
Primulaceae	<i>Anagallis arvensis</i>		0.2 ± 0.7		0.01 ± 0.02
Resedaceae	<i>Reseda alba</i>		0.3 ± 0.8		0.01 ± 0.02
Rubiaceae	<i>Galium tricornutum</i>		4.0 ± 11.4		0.11 ± 0.31
	<i>Sherardia arvensis</i>		0.3 ± 0.8		0.00 ± 0.01
Scrophulariaceae	<i>Veronica heredifolia</i>	6.3 ± 10.2	15.6 ± 18.3	0.13 ± 0.20	0.29 ± 0.36
	<i>Veronica polita</i>	1.4 ± 3.7	0.1 ± 0.4	0.02 ± 0.05	
Undetermined	Undetermined	20.6 ± 13.0	12.3 ± 10.3	0.26 ± 0.62	0.29 ± 0.69