

Representation and protection of threatened biodiversity by the largest Spanish regional network of protected areas

D. Rodríguez-Rodríguez*, J. Martínez-Vega

*Corresponding author: david.rodriguez@csic.es

Endangered Species Research 35:125–139 (2018)

Table S1. Definitions of the eight National protected area categories existing in Andalusia by September of 2017

Protected area category	Definition ¹
National Park	Little transformed sites of high natural and cultural value whose conservation is priority and in the State's general interest for being representative of the Spanish natural heritage as a result of their exception natural values, their representative character, or the singularity of their flora, fauna or geomorphological formations
Natural Monument	Small natural sites that hold singular, rare or beautiful features (such as old tress or caves) that merit protection
Nature Park	Big natural, little transformed sites with ecological, aesthetic, educational and scientific values whose conservation deserves priority because of their landscape beauty, ecosystem representation or their floral, faunal or geo-morphological singularity
Nature Reserve	Highly protected small natural sites designated for the protection of rare, fragile, important or singular ecosystems, communities or biological features
Nature Site	Sites designated for the conservation of their singular and exceptional floral, faunal, geo-morphological, beauty, or other natural values
Peri-urban Park	Small natural sites cloase to urban areas, human-made or not, that are designated chiefly for recreational purposes
Private Nature Reserve	Sites that, not complying with the other categories' requirements, deserve a protection regime that should be required by their land owners
Protected Landscape	Natural sites designated for their aesthetic and cultural values

¹ Adapted from the regional Law 2/1989, on protected areas, and from the national Law 30/2014, on National Parks

Table S2. Threatened species and subspecies considered in the study, their kingdom, regional area of occupancy, and regional² and global³ category of threat

Species or Sub-species	Kingdom	Regional area of occupancy	Regional threat category	Global IUCN Red List Category
<i>Abies pinsapo</i>	<i>Plantae</i>	1700	Endangered	Endangered
<i>Adenocarpus gibbsianus</i>	<i>Plantae</i>	400	Vulnerable	
<i>Aegypius monachus</i>	<i>Animalia</i>	500	Vulnerable	
<i>Allium pruinautum</i>	<i>Plantae</i>	1078	Vulnerable	
<i>Anthemis bourgaei</i>	<i>Plantae</i>	300	Vulnerable	
<i>Antirrhinum charidemi</i>	<i>Plantae</i>	100	Vulnerable	Critically Endangered
<i>Aquila adalberti</i>	<i>Animalia</i>	20,356	Endangered	Vulnerable
<i>Aquilegia pyrenaica subsp. cazorlensis</i>	<i>Plantae</i>	200	Endangered	
<i>Ardeola ralloides</i>	<i>Animalia</i>	29,700	Endangered	
<i>Artemisia alba subsp. nevadensis</i>	<i>Plantae</i>	300	Vulnerable	
<i>Artemisia granatensis</i>	<i>Plantae</i>	500	Endangered	Endangered
<i>Astragalus edulis</i>	<i>Plantae</i>	700	Vulnerable	
<i>Atropa baetica</i>	<i>Plantae</i>	800	Endangered	
<i>Avellara fistulosa</i>	<i>Plantae</i>	300	Endangered	Critically Endangered
<i>Avena murphyi</i>	<i>Plantae</i>	687	Vulnerable	
<i>Aythya ferina*</i>	<i>Animalia</i>	35,518		Vulnerable
<i>Aythya nyroca</i>	<i>Animalia</i>	1085	Endangered	
<i>Betula pendula subsp. fontqueri</i>	<i>Plantae</i>	400	Vulnerable	
<i>Botaurus stellaris</i>	<i>Animalia</i>	500	Endangered	
<i>Campanula lusitanica subsp. specularioides</i>	<i>Plantae</i>	800	Vulnerable	
<i>Carum foetidum</i>	<i>Plantae</i>	200	Vulnerable	
<i>Castrilanthemum debeauxii</i>	<i>Plantae</i>	200	Endangered	
<i>Centaurea kunkelii</i>	<i>Plantae</i>	100	Endangered	
<i>Centaurea lainzii</i>	<i>Plantae</i>	400	Vulnerable	
<i>Centaurea nevadensis</i>	<i>Plantae</i>	100	Vulnerable	
<i>Centaurea sagredoii</i>	<i>Plantae</i>	400	Vulnerable	
<i>Chersophilus duponti</i>	<i>Animalia</i>	1200	Vulnerable	

² According to the Andalusian Register of Threatened Species

³ According to the IUCN's Red List

*Globally threatened species not included in the Andalusian Register

Species or Sub-species	Kingdom	Regional area of occupancy	Regional threat category	Global IUCN Red List Category
<i>Chlidonias niger</i>	Animalia	7445	Endangered	
<i>Christella dentata</i>	Plantae	100	Endangered	
<i>Ciconia nigra</i>	Animalia	33,000	Endangered	
<i>Circus pygargus</i>	Animalia	68,514	Vulnerable	
<i>Clypeola eriocarpa</i>	Plantae	100	Vulnerable	
<i>Coincya longirostra</i>	Plantae	192	Vulnerable	
<i>Crepis granatensis</i>	Plantae	300	Endangered	Endangered
<i>Culcita macrocarpa</i>	Plantae	200	Endangered	
<i>Cynomorium coccineum</i>	Fungi	3400	Vulnerable	
<i>Dianthus hinoxianus</i>	Plantae	1299	Vulnerable	
<i>Drosophyllum lusitanicum</i>	Plantae	600	Vulnerable	
<i>Dryopteris tyrrhena</i>	Plantae	400	Endangered	
<i>Erigeron frigidus</i>	Plantae	400	Endangered	Endangered
<i>Erodium astragaloides</i>	Plantae	200	Endangered	Critically Endangered
<i>Erodium cazorlanum</i>	Plantae	400	Vulnerable	
<i>Erodium rupicola</i>	Plantae	400	Endangered	Vulnerable
<i>Eryngium galioides</i> *	Plantae	400		Endangered
<i>Eryngium grosii</i>	Plantae	1300	Vulnerable	
<i>Euonymus latifolius</i>	Plantae	300	Endangered	
<i>Euphorbia gaditana</i>	Plantae	600	Vulnerable	
<i>Fulica cristata</i>	Animalia	5392	Endangered	
<i>Galium viridiflorum</i> *	Plantae	1400		Endangered
<i>Galium pulvinatum</i>	Plantae	100	Vulnerable	
<i>Genista ancistrocarpa</i> *	Plantae	100		Endangered
<i>Genista haenseleri</i>	Plantae	300	Vulnerable	
<i>Geranium cazorlense</i>	Plantae	200	Endangered	
<i>Geronticus eremita</i>	Animalia	301	Extinct	Critically Endangered
<i>Gypsophila montserratii</i>	Plantae	300	Vulnerable	
<i>Haplophyllum bastetanum</i>	Plantae	100	Endangered	
<i>Hieraaetus fasciatus</i>	Animalia	3100	Vulnerable	
<i>Hieracium texedense</i>	Plantae	100	Endangered	
<i>Hormathophylla baetica</i>	Plantae	100	Vulnerable	
<i>Hymenostemma pseudanthemis</i>	Plantae	368	Vulnerable	

Species or Sub-species	Kingdom	Regional area of occupancy	Regional threat category	Global IUCN Red List Category
<i>Isoetes durieui</i>	<i>Plantae</i>	400	Vulnerable	
<i>Juniperus oxycedrus subsp. macrocarpa</i>	<i>Plantae</i>	121	Vulnerable	
<i>Jurinea fontqueri</i>	<i>Plantae</i>	200	Endangered	Critically Endangered
<i>Limonium majus</i>	<i>Plantae</i>	1100	Vulnerable	
<i>Limonium subglabrum</i>	<i>Plantae</i>	500	Vulnerable	
<i>Linaria clementei</i>	<i>Plantae</i>	800	Vulnerable	
<i>Linaria glacialis</i>	<i>Plantae</i>	200	Vulnerable	
<i>Linaria huteri</i>	<i>Plantae</i>	400	Vulnerable	
<i>Marmaronetta angustirostris</i>	<i>Animalia</i>	4045	Endangered	Vulnerable
<i>Marsilea strigosa</i>	<i>Plantae</i>	200	Vulnerable	
<i>Maytenus senegalensis</i>	<i>Plantae</i>	796	Vulnerable	
<i>Micropyropsis tuberosa</i>	<i>Plantae</i>	400	Vulnerable	Endangered
<i>Milvus milvus</i>	<i>Animalia</i>	30,238	Endangered	
<i>Miniopterus schreibersii</i>	<i>Animalia</i>	5100	Vulnerable	
<i>Moehringia fontqueri</i>	<i>Plantae</i>	400	Endangered	Endangered
<i>Moehringia intricata subsp. tejedensis</i>	<i>Plantae</i>	200	Endangered	
<i>Myotis blythii</i>	<i>Animalia</i>	200	Vulnerable	
<i>Myotis capaccinii</i>	<i>Animalia</i>	400	Endangered	Vulnerable
<i>Myotis emarginatus</i>	<i>Animalia</i>	2200	Vulnerable	
<i>Myotis myotis</i>	<i>Animalia</i>	1300	Vulnerable	
<i>Myotis myotis/M. blythii</i>	<i>Animalia</i>	7100	Vulnerable	
<i>Narcissus longispathus</i>	<i>Plantae</i>	1356	Endangered	Endangered
<i>Narcissus nevadensis</i>	<i>Plantae</i>	200	Endangered	Endangered
<i>Narcissus tortifolius</i>	<i>Plantae</i>	600	Vulnerable	
<i>Neophron percnopterus</i>	<i>Animalia</i>	8949	Endangered	Endangered
<i>Neottia nidus-avis</i>	<i>Plantae</i>	400	Vulnerable	
<i>Nymphaea alba</i>	<i>Plantae</i>	2900	Vulnerable	
<i>Ononis azcaratei</i>	<i>Plantae</i>	100	Vulnerable	
<i>Ophrys atlantica</i>	<i>Plantae</i>	800	Vulnerable	
<i>Ophrys speculum subsp. lusitanica</i>	<i>Plantae</i>	88	Vulnerable	
<i>Ornithogalum reverchonii</i>	<i>Plantae</i>	900	Vulnerable	
<i>Otis tarda</i>	<i>Animalia</i>	12,299	Endangered	Vulnerable
<i>Oxyura leucocephala</i>	<i>Animalia</i>	6202	Endangered	Endangered

Species or Sub-species	Kingdom	Regional area of occupancy	Regional threat category	Global IUCN Red List Category
<i>Pandion haliaetus</i>	Animalia	27,725	Vulnerable	
<i>Papaver rupifragum</i>	Plantae	300	Vulnerable	
<i>Pinguicula nevadensis</i>	Plantae	400	Vulnerable	Endangered
<i>Pinguicula vallisnerifolia</i>	Plantae	500	Vulnerable	
<i>Plantago algarbiensis</i>	Plantae	100	Vulnerable	Endangered
<i>Platycapnos saxicola</i>	Plantae	300	Vulnerable	
<i>Prunus ramburii*</i>	Plantae	500		Vulnerable
<i>Pterocles alchata</i>	Animalia	23,300	Vulnerable	
<i>Quercus alpestris</i>	Plantae	100	Vulnerable	
<i>Rhamnus alpina</i>	Plantae	100	Vulnerable	
<i>Rhinolophus euryale</i>	Animalia	6100	Vulnerable	
<i>Rhinolophus euryale/R.mehelyi</i>	Animalia	100	Vulnerable	
<i>Rhinolophus ferrumequinum</i>	Animalia	9482	Vulnerable	
<i>Rhinolophus mehelyi</i>	Animalia	600	Vulnerable	Vulnerable
<i>Rhynchospora modesti-lucennoi</i>	Plantae	200	Endangered	Endangered
<i>Santolina elegans*</i>		100		Vulnerable
<i>Sarcocapnos baetica</i>	Plantae	806	Vulnerable	
<i>Sarcocapnos baetica subsp. integrifolia</i>	Plantae	100	Vulnerable	
<i>Scrophularia viciosoi</i>	Plantae	200	Vulnerable	
<i>Silene fernandezii</i>	Plantae	400	Vulnerable	Endangered
<i>Solenanthes reverchonii</i>	Plantae	200	Endangered	Critically Endangered
<i>Succisella andreae-molinae*</i>		600		Endangered
<i>Taraxacum gaditanum</i>	Plantae	132	Endangered	
<i>Thymus albicans</i>	Plantae	1493	Endangered	
<i>Trisetum antoni-josephii</i>	Plantae	100	Vulnerable	
<i>Ulex canescens</i>	Plantae	275	Vulnerable	
<i>Utricularia australis</i>	Plantae	100	Endangered	
<i>Vandenboschia speciosa</i>	Plantae	600	Endangered	
<i>Vella pseudocytisus subsp. pseudocytisus</i>	Plantae	500	Vulnerable	
<i>Verbascum charidemi</i>	Plantae	492	Vulnerable	
<i>Veronica tenuifolia subsp. fontqueri</i>	Plantae	300	Vulnerable	
<i>Viola cazorlensis</i>	Plantae	1100	Vulnerable	

Table S3. Regionally threatened species' richness in Andalusian protected areas by level of protection

Richness class (Number of species)	Class Area (ha.)	Number of protected area designation categories	Protected area by protection level (ha.)	Area of richness class by protection levels (ha.)	Area of richness class by protection levels (%)
1	128,900	1	1,080,630	16,948	13.15
1	128,900	2	180,765	2637	2.05
1	128,900	3	318,071	9877	7.66
1	128,900	4	1,126,450	23,185	17.99
1	128,900	5	46,052	2558	1.98
1	128,900	6	69,435	3592	2.79
Area of richness class protected (%)					45.61
2	15,900	1	1,080,630	3599	22.64
2	15,900	2	180,765	422	2.65
2	15,900	3	318,071	1247	7.85
2	15,900	4	1,126,450	3051	19.19
2	15,900	5	46,052	1196	7.52
2	15,900	6	69,435	322	2.02
Area of richness class protected (%)					61.87
3	7900	1	1,080,630	2190	27.72
3	7900	2	180,765	65	0.82
3	7900	3	318,071	241	3.05
3	7900	4	1,126,450	963	12.19
3	7900	5	46,052	2671	33.81
3	7900	6	69,435	300	3.80
Area of richness class protected (%)					81.39
4	11,800	1	1,080,630	1760	14.92
4	11,800	2	180,765	202	1.71
4	11,800	3	318,071	283	2.40
4	11,800	4	1,126,450	300	2.55
4	11,800	5	46,052	5075	43.01
4	11,800	6	69,435	3289	27.87
Area of richness class protected (%)					92.46
5	2700	1	1,080,630	587	21.74
5	2700	2	180,765	15	0.55
5	2700	4	1,126,450	200	7.41
5	2700	5	46,052	990	36.68
5	2700	6	69,435	439	16.25
Area of richness class protected (%)					82.63
6	300	1	1,080,630	109	36.38
6	300	2	180,765	0	0.01
6	300	3	318,071	1	0.26
6	300	4	1,126,450	0	0.00
6	300	5	46,052	190	63.35
Area of richness class protected (%)					100.00
7	11,400	1	1,080,630	2297	20.15
7	11,400	2	180,765	502	4.40

Richness class (Number of species)	Class Area (ha.)	Number of protected area designation categories	Protected area by protection level (ha.)	Area of richness class by protection levels (ha.)	Area of richness class by protection levels (%)
7	11,400	3	318,071	3	0.03
7	11,400	4	1,126,450	1	0.01
7	11,400	5	46,052	2981	26.15
7	11,400	6	69,435	5374	47.14
Area of richness class protected (%)					97.87
8	600	5	46,052	1	0.15
8	600	6	69,435	599	99.85
Area of richness class protected (%)					100.00
9	1500	2	180,765	2	0.15
9	1500	3	318,071	0	0.02
9	1500	4	1,126,450	0	0.00
9	1500	5	46,052	2	0.16
9	1500	6	69,435	1495	99.68
Area of richness class protected (%)					100.00
10	2000	5	46,052	166	8.31
10	2000	6	69,435	1834	91.69
Area of richness class protected (%)					100.00
11	400	5	46,052	8	2.04
11	400	6	69,435	392	97.96
Area of richness class protected (%)					100.00
12	100	6	69,435	100	100.00
Area of richness class protected (%)					100.00

Table S4. Globally threatened species' richness in Andalusian protected areas by level of protection

Richness class (Number of species)	Class Area (ha.)	Number of protected area designation categories	Protected area by protection level (ha.)	Area of richness class by protection levels (ha.)	Area of richness class by protection levels (%)
1	57,900	1	1,080,630	13,366	23.08
1	57,900	2	180,765	1916	3.31
1	57,900	3	318,071	3937	6.80
1	57,900	4	1,126,450	13,486	23.29
1	57,900	5	46,052	8078	13.95
1	57,900	6	69,435	5025	8.68
Area of richness class protected (%)					79,12
2	14,100	1	1,080,630	1914	13.58
2	14,100	2	180,765	569	4.04
2	14,100	3	318,071	398	2.82
2	14,100	4	1,126,450	918	6.51
2	14,100	5	46,052	2523	17.89
2	14,100	6	69,435	5475	38.83
Area of richness class protected (%)					83,67
3	3500	5	46,052	177	5.05
3	3500	6	69,435	3323	94.95
Area of richness class protected (%)					100,00
4	1000	2	180,765	2	0.22
4	1000	3	318,071	0	0.02
4	1000	4	1,126,450	0	0.00
4	1000	5	46,052	0	0.00
4	1000	6	69,435	998	99.75
Area of richness class protected (%)					100.00

Table S5. Land use-land covers in the Andalusian region in 2012

CLC sub-class	Sub-class area (ha)	Regional area (%)	Cummulative area (%)
223	1,534,160	17.51	17.51
211	1,285,960	14.68	32.19
244	737,329	8.42	40.61
323	683,771	7.81	48.42
311	538,813	6.15	54.57
323	525,281	6.00	60.56
312	502,970	5.74	66.30
212	498,381	5.69	71.99
324	463,347	5.29	77.28
321	360,595	4.12	81.40
222	293,052	3.35	84.74
333	174,581	1.99	86.74
244	161,909	1.85	88.59
242	160,871	1.84	90.42
231	124,245	1.42	91.84
243	118,115	1.35	93.19
313	107,970	1.23	94.42
512	62,008	0.71	95.13
112	61,716	0.70	95.83
111	59,389	0.68	96.51
213	44,184	0.50	97.02
121	39,631	0.45	97.47
411	33,207	0.38	97.85
221	33,175	0.38	98.23
133	26,640	0.30	98.53
131	19,646	0.22	98.75
421	19,532	0.22	98.98
422	13,954	0.16	99.14
511	13,882	0.16	99.30
142	12,499	0.14	99.44
332	10,173	0.12	99.55
322	8,356	0.10	99.65
331	7,642	0.09	99.74
122	5,790	0.07	99.80
522	4,093	0.05	99.85
124	3,489	0.04	99.89
334	3,255	0.04	99.93
141	1,760	0.02	99.95
523	1,490	0.02	99.96
123	1,233	0.01	99.98
132	1,024	0.01	99.99
241	837	0.01	100.00
412	76	0.00	100.00
423	41	0.00	100.00

Table S6. Land use-land covers in Andalusian protected areas in 2012

CLC sub-class	Sub-class area (ha.)	Sub-class area in protected areas (%)	Cummulative area (%)
323	630,707	22.39	22.39
244	389,329	13.82	36.20
312	341,066	12.11	48.31
311	276,821	9.83	58.14
324	227,455	8.07	66.21
223	137,352	4.88	71.08
321	133,467	4.74	75.82
211	127,388	4.52	80.34
333	90,162	3.20	83.54
313	83,486	2.96	86.51
311	69,031	2.45	88.96
231	35,128	1.25	90.20
512	33,782	1.20	91.40
213	33,180	1.18	92.58
411	32,245	1.14	93.72
212	31,888	1.13	94.86
243	28,052	1.00	95.85
222	19,933	0.71	96.56
242	16,400	0.58	97.14
421	15,135	0.54	97.68
422	12,598	0.45	98.13
332	8,897	0.32	98.44
511	8,518	0.30	98.74
221	6,677	0.24	98.98
322	6,547	0.23	99.21
331	4,945	0.18	99.39
111	4,624	0.16	99.55
522	3,440	0.12	99.68
131	2,465	0.09	99.76
112	2,154	0.08	99.84
121	1,315	0.05	99.89
142	919	0.03	99.92
133	844	0.03	99.95
523	588	0.02	99.97
334	377	0.01	99.98
122	353	0.01	100.00
412	76	0.00	100.00
132	55	0.00	100.00
124	2	0.00	100.00
423	2	0.00	100.00
141	1	0.00	100.00
241	0	0.00	100.00
123	0	0.00	100.00

Table S7. Land use-land covers in the area of occupancy of regionally threatened species and sub-species in Andalusia in 2012

CLC sub-class	Sub-class area (ha.)	RTSs' area (%)	Cummulative area (%)
211	44,141	24.52	24.52
323	19,780	10.99	35.50
223	13,871	7.70	43.21
212	13,110	7.28	50.49
411	9,884	5.49	55.98
312	9,882	5.49	61.47
311	8,569	4.76	66.23
422	7,035	3.91	70.14
244	6,503	3.61	73.75
321	6,047	3.36	77.11
213	5,627	3.13	80.23
324	5,422	3.01	83.24
231	4,511	2.51	85.75
421	4,486	2.49	88.24
333	4,323	2.40	90.64
512	2,333	1.30	91.94
313	1,840	1.02	92.96
222	1,758	0.98	93.94
511	1,728	0.96	94.90
242	1,259	0.70	95.59
522	1,227	0.68	96.28
112	1,091	0.61	96.88
243	776	0.43	97.31
332	712	0.40	97.71
133	673	0.37	98.08
111	594	0.33	98.41
331	533	0.30	98.71
121	528	0.29	99.00
322	369	0.20	99.21
523	361	0.20	99.41
142	305	0.17	99.58
221	225	0.12	99.70
131	154	0.09	99.79
334	84	0.05	99.83
141	64	0.04	99.87
122	43	0.02	99.89
241	39	0.02	99.91
423	32	0.02	99.93
123	31	0.02	99.95
132	9	0.01	99.95

Table S8. Land use-land covers in the area of occupancy of globally threatened species and sub-species in Andalusia in 2012

CLC sub-class	Sub-class area (ha.)	GTSs' area (%)	Cummulative area (%)
211	16,435	21.72	21.72
411	9,238	12.21	33.93
323	8,162	10.79	44.72
212	5,091	6.73	51.44
312	4,787	6.33	57.77
311	4,423	5.85	63.62
422	4,186	5.53	69.15
244	3,027	4.00	73.15
223	2,993	3.96	77.10
213	2,930	3.87	80.98
324	2,436	3.22	84.20
231	2,374	3.14	87.33
333	2,008	2.65	89.99
321	1,400	1.85	91.84
421	1,142	1.51	93.35
511	1,117	1.48	94.82
512	1,011	1.34	96.16
313	712	0.94	97.10
133	282	0.37	97.47
222	276	0.36	97.84
112	273	0.36	98.20
242	237	0.31	98.51
522	169	0.22	98.73
142	165	0.22	98.95
332	157	0.21	99.16
322	142	0.19	99.35
121	138	0.18	99.53
243	134	0.18	99.71
331	103	0.14	99.84
131	58	0.08	99.92
111	41	0.05	99.97
523	11	0.01	99.99
123	9	0.01	100.00

Table S9. Relative importance of land use-land covers for regionally threatened species and sub-species in Andalusia in 2012

Species richness class (Number of species)	Area of richness class (ha.)	CLC sub-class	Area of the species richness class in the CLC sub-class (ha)	Area of the species richness class in the CLC sub-class (%)
12	100	422	100	99.67
12	100	411	0	0.33
11	400	411	207	51.72
11	400	422	100	25.00
11	400	512	93	23.28
10	2000	411	955	47.76
10	2000	422	887	44.37
10	2000	212	144	7.18
10	2000	213	14	0.69
9	1500	422	770	51.35
9	1500	411	727	48.44
9	1500	511	3	0.22
8	600	411	336	56.08
8	600	422	264	43.92
7	11,400	411	5194	45.56
7	11,400	212	2318	20.34
7	11,400	211	1316	11.54
7	11,400	213	1189	10.43
7	11,400	511	908	7.96
7	11,400	422	156	1.37
7	11,400	512	143	1.25
7	11,400	231	95	0.84
7	11,400	421	33	0.29
7	11,400	333	28	0.25
7	11,400	311	20	0.17
7	11,400	324	0	0.00
6	300	312	99	33.07
6	300	231	93	30.90
6	300	421	48	16.12
6	300	422	33	11.15
6	300	324	18	6.07
6	300	211	7	2.39
6	300	244	1	0.27
6	300	213	0	0.04
5	2700	211	789	29.23
5	2700	231	401	14.86
5	2700	323	333	12.35
5	2700	213	272	10.06
5	2700	422	155	5.73
5	2700	223	119	4.39
5	2700	312	105	3.88
5	2700	411	83	3.08
5	2700	244	79	2.93
5	2700	311	71	2.63

Species richness class (Number of species)	Area of richness class (ha.)	CLC sub-class	Area of the species richness class in the CLC sub-class (ha)	Area of the species richness class in the CLC sub-class (%)
5	2700	321	50	1.87
5	2700	111	44	1.64
5	2700	212	41	1.52
5	2700	112	31	1.16
5	2700	142	22	0.82
5	2700	332	21	0.79
5	2700	333	20	0.73
5	2700	222	19	0.70
5	2700	324	18	0.67
5	2700	512	14	0.51
5	2700	313	5	0.19
5	2700	421	4	0.16
5	2700	242	2	0.08
5	2700	243	1	0.03
4	11,800	211	4132	35.02
4	11,800	213	1532	12.98
4	11,800	411	1486	12.59
4	11,800	422	975	8.26
4	11,800	212	645	5.46
4	11,800	323	598	5.07
4	11,800	421	562	4.76
4	11,800	231	467	3.96
4	11,800	312	235	1.99
4	11,800	511	212	1.80
4	11,800	311	174	1.48
4	11,800	223	174	1.47
4	11,800	244	131	1.11
4	11,800	324	116	0.98
4	11,800	333	109	0.92
4	11,800	242	51	0.43
4	11,800	243	48	0.40
4	11,800	313	46	0.39
4	11,800	222	38	0.32
4	11,800	321	26	0.22
4	11,800	112	22	0.19
4	11,800	332	10	0.09
4	11,800	512	10	0.08
4	11,800	322	1	0.01
3	7900	211	1203	15.23
3	7900	323	825	10.45
3	7900	421	821	10.39
3	7900	422	742	9.40
3	7900	212	690	8.73
3	7900	213	683	8.65
3	7900	231	510	6.45
3	7900	244	438	5.55
3	7900	311	293	3.71

Species richness class (Number of species)	Area of richness class (ha.)	CLC sub-class	Area of the species richness class in the CLC sub-class (ha)	Area of the species richness class in the CLC sub-class (%)
3	7900	223	247	3.12
3	7900	222	244	3.09
3	7900	324	224	2.83
3	7900	312	207	2.63
3	7900	321	142	1.80
3	7900	243	88	1.11
3	7900	522	87	1.10
3	7900	332	55	0.70
3	7900	333	54	0.68
3	7900	111	51	0.64
3	7900	512	41	0.52
3	7900	141	39	0.50
3	7900	242	31	0.39
3	7900	313	20	0.26
3	7900	112	19	0.25
3	7900	411	8	0.11
3	7900	122	7	0.08
3	7900	133	2	0.03
3	7900	511	2	0.02
3	7900	523	1	0.02
3	7900	131	0	0.00
2	15,900	211	4065	25.56
2	15,900	223	1374	8.64
2	15,900	312	1273	8.01
2	15,900	212	1268	7.98
2	15,900	323	1238	7.78
2	15,900	213	765	4.81
2	15,900	422	615	3.87
2	15,900	421	574	3.61
2	15,900	231	554	3.48
2	15,900	324	495	3.11
2	15,900	333	485	3.05
2	15,900	321	413	2.60
2	15,900	311	344	2.17
2	15,900	244	298	1.87
2	15,900	511	261	1.64
2	15,900	313	242	1.52
2	15,900	411	192	1.21
2	15,900	222	163	1.03
2	15,900	512	159	1.00
2	15,900	112	155	0.97
2	15,900	522	145	0.91
2	15,900	242	94	0.59
2	15,900	523	81	0.51
2	15,900	243	72	0.45
2	15,900	133	66	0.42
2	15,900	332	63	0.40

Species richness class (Number of species)	Area of richness class (ha.)	CLC sub-class	Area of the species richness class in the CLC sub-class (ha)	Area of the species richness class in the CLC sub-class (%)
2	15,900	121	57	0.36
2	15,900	331	54	0.34
2	15,900	142	41	0.26
2	15,900	322	21	0.13
2	15,900	111	18	0.12
2	15,900	131	12	0.07
1	128,900	211	32,655	25.33
1	128,900	323	16,785	13.02
1	128,900	223	11,954	9.27
1	128,900	212	8013	6.22
1	128,900	312	7963	6.18
1	128,900	311	7670	5.95
1	128,900	244	5558	4.31
1	128,900	321	5411	4.20
1	128,900	324	4553	3.53
1	128,900	333	3626	2.81
1	128,900	421	2450	1.90
1	128,900	231	2396	1.86
1	128,900	422	2248	1.74
1	128,900	512	1875	1.45
1	128,900	313	1527	1.18
1	128,900	222	1294	1.00
1	128,900	213	1179	0.91
1	128,900	242	1080	0.84
1	128,900	522	998	0.77
1	128,900	112	865	0.67
1	128,900	411	708	0.55
1	128,900	133	604	0.47
1	128,900	243	569	0.44
1	128,900	332	562	0.44
1	128,900	111	480	0.37
1	128,900	331	480	0.37
1	128,900	121	471	0.37
1	128,900	322	346	0.27
1	128,900	511	344	0.27
1	128,900	523	280	0.22
1	128,900	142	243	0.19
1	128,900	221	225	0.17
1	128,900	131	142	0.11
1	128,900	334	84	0.07
1	128,900	241	39	0.03
1	128,900	122	36	0.03
1	128,900	423	32	0.02
1	128,900	123	31	0.02
1	128,900	141	24	0.02
1	128,900	132	9	0.01

Table S10. Relative importance of land use-land covers for globally threatened species and sub-species in Andalusia in 2012

Species richness class (Number of species)	Area of richness class (ha.)	CLC sub-class	Area of the species richness class in the CLC sub-class (ha)	Area of the species richness class in the CLC sub-class (%)
4	1000	411	145	14.54
4	1000	422	851	85.13
4	1000	511	3	0.33
3	3500	212	144	4.10
3	3500	213	14	0.40
3	3500	411	1928	55.09
3	3500	422	1321	37.75
3	3500	512	93	2.66
2	14,100	111	19	0.14
2	14,100	112	202	1.43
2	14,100	121	48	0.34
2	14,100	123	8	0.06
2	14,100	131	42	0.30
2	14,100	133	210	1.49
2	14,100	142	143	1.01
2	14,100	211	678	4.81
2	14,100	212	2884	20.45
2	14,100	213	1189	8.43
2	14,100	223	102	0.72
2	14,100	231	322	2.28
2	14,100	242	47	0.33
2	14,100	243	22	0.15
2	14,100	244	29	0.20
2	14,100	311	37	0.27
2	14,100	312	81	0.58
2	14,100	313	2	0.02
2	14,100	321	26	0.18
2	14,100	322	13	0.09
2	14,100	323	333	2.36
2	14,100	324	110	0.78
2	14,100	331	13	0.09
2	14,100	333	210	1.49
2	14,100	411	4850	34.40
2	14,100	421	230	1.63
2	14,100	422	692	4.91
2	14,100	511	908	6.44
2	14,100	512	360	2.55
2	14,100	523	6	0.05
1	57,900	111	22	0.04
1	57,900	112	71	0.12
1	57,900	121	90	0.16
1	57,900	131	15	0.03
1	57,900	133	72	0.12
1	57,900	142	22	0.04

Species richness class (Number of species)	Area of richness class (ha.)	CLC sub-class	Area of the species richness class in the CLC sub-class (ha)	Area of the species richness class in the CLC sub-class (%)
1	57,900	211	15,768	27.23
1	57,900	212	2068	3.57
1	57,900	213	1731	2.99
1	57,900	222	276	0.48
1	57,900	223	2891	4.99
1	57,900	231	2054	3.55
1	57,900	242	191	0.33
1	57,900	243	113	0.19
1	57,900	244	2999	5.18
1	57,900	311	4387	7.58
1	57,900	312	4704	8.12
1	57,900	313	709	1.22
1	57,900	321	1373	2.37
1	57,900	322	128	0.22
1	57,900	323	7829	13.52
1	57,900	324	2327	4.02
1	57,900	331	90	0.16
1	57,900	332	157	0.27
1	57,900	333	1798	3.10
1	57,900	411	2326	4.02
1	57,900	421	912	1.58
1	57,900	422	1327	2.29
1	57,900	511	208	0.36
1	57,900	512	558	0.96
1	57,900	522	169	0.29
1	57,900	523	5	0.01

Table S11. Relative importance of land use-land covers for regionally threatened species and sub-species in Andalusia in 2012 according to the Land Cover Importance Index

CLC sub-class	LCII
422	2904.05
411	2322.93
211	503.57
231	309.57
212	291.97
512	272.80
312	255.83
213	218.88
421	158.88
323	141.97
511	68.52
223	63.75
324	61.97
244	45.36
311	41.71
321	25.03
333	20.02
222	17.13
111	10.75
112	9.88
332	7.62
313	7.47
243	6.41
522	5.90
242	5.33
142	4.79
141	1.52
133	1.39
523	1.29
121	1.08
331	1.05
322	0.58
122	0.28
131	0.26
221	0.17
334	0.07
241	0.03
423	0.02
123	0.02
132	0.01

Table S12. Relative importance of land use-land covers for globally threatened species and sub-species in Andalusia in 2012 according to the Land Cover Importance Index

CLC Sub-class	LCII
422	465.90
411	296.23
212	56.79
211	36.86
213	21.04
323	18.25
511	14.55
512	14.05
312	9.28
231	8.12
311	8.11
223	6.43
333	6.08
244	5.58
324	5.58
421	4.84
133	3.10
112	2.98
321	2.74
142	2.07
313	1.26
242	0.99
121	0.84
131	0.63
243	0.50
222	0.48
322	0.41
331	0.34
111	0.31
522	0.29
332	0.27
123	0.12
523	0.10
122	0.00
132	0.00
141	0.00
221	0.00
241	0.00
334	0.00
423	0.00