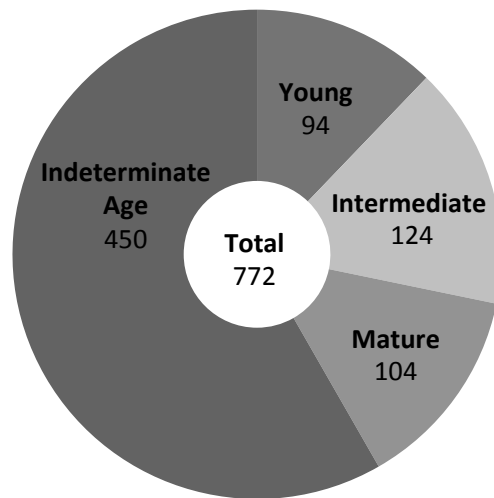


## Supplementary Materials



**Fig. 1** Distribution of secondary vegetation sites per stage of succession in Mediterranean and dryland environments.

**Table 1** Distribution of sites among land-use intensity levels, for each type of land use. Land-use intensity was classified in the PREDICTS database into three levels – minimal, light or intense (Hudson et al. 2014). The classification was based on the description of the habitat given in the original paper from which the data were derived, with a classification of unknown used if insufficient information was given (Hudson et al. 2014). Criteria for classification depended on the land-use type in question (for full details, see (Hudson et al. 2014)). For example, cropland sites were classified as minimal use if they were in low-intensity farms, typically with small fields, mixed crops, crop rotation, little or no inorganic fertiliser use, little or no pesticide use, little or no ploughing, little or no irrigation, little or no mechanisation; or at the other extreme as intense use for high-intensity monoculture farming, typically showing many of the following features: large fields, annual ploughing, inorganic fertiliser application, pesticide application, irrigation, mechanisation, no crop rotation.

Land use	Land-use intensity			
	Minimal use	Light use	Intense use	Unknown
<i>Drylands:</i>				
Primary vegetation	42	19	1	15
Secondary vegetation	14	20	9	7
Cropland	17	0	5	7
Pasture	9	42	6	19
Urban	1	25	1	0
<i>Mediterranean:</i>				
Primary vegetation	172	268	35	0
Secondary vegetation	511	156	0	55
Plantation forest	79	74	0	26
Cropland	74	19	143	93
Pasture	22	78	0	21
Urban	37	12	1	15

**Table 2** – List of descriptions of secondary vegetation sites used in the dryland and Mediterranean analyses, as provided by authors or extracted from source papers. Descriptions are more or less detailed and include location, type of vegetation, past uses, pressures and/or other biological or geological information. Please note that details were not available for all the secondary sites.

**Habitat description**

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Semi-natural habitat.

Phrygana.

Mixed and Holm oak woodlands, shrublands, water bodies and riparian vegetation such as meadows and grasslands, rocky areas.

Slash & burn with all trees removed 2 years previous, agriculture planned.

Slash & burn with 90% trees removed 3 y previous, agriculture and grazing planned.

Slash & burn all trees removed <1y previous, agriculture planned.

Slash & burn with 90% trees removed 2y previous agriculture planned.

The habitat covered by crassicaule scrubland is located on the north and north-east faces of steep slopes in the canyon, from 1300 to 1700m a.s.l. in basaltic soils derived from volcanic spillage. The vegetation is dominated by *Isolatocereus dumortieri* (Scheidweiler) Backeberg, a columnar candelabrum cactus that reaches 7m high and is endemic to the xeric environments of Mexico. The arboreal and shrub strata are very rich in species, such as those of the genera *Yucca*, *Prosopis*, *Celtis*, *Bursera*, *Acacia*, *Opuntia* and *Myrtillocactus*. The main conservation problem in this habitat is the illegal extraction of cactus species.

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The habitat of the submountainous scrubland is located on hills with soft slopes, on the east and south-east faces. This habitat is located on thin calcareous and very rocky soils of sedimentary origin, from 1600 to 1800m a.s.l. The vegetation is dominated by shrub species belonging to genera such as *Mimosa*, *Senna*, *Krameria*, *Neopringlea*, *Ipomoea* and *Cnidoscolus*, and some sporadic but conspicuous individuals of *Yucca*. The main conservation problem in this habitat is overgrazing. In this habitat, the closed condition has been generated due to the artificial exclusion of cattle that has minimized the impact of grazing during the recent years.

Abandoned from cropping 10 to 15 years.

Abandoned from cropping 20 to 30 years.

91.94% Scrubland, 6.43 Vineyard, 0.87 Olive grove, 0.16 Roads, 0.13 Residual 0.46 Water bodies.

71.93% Scrubland, 15.78 Vineyard, 0.22 Olive grove, 1.06 Herbaceous cropland,

5.15 Urban Area, 5.10 Roads, 0.13 Orchard, 0.62 Residual.  
71.26% Scrubland, 26.90 Vineyard, 0.80 Olive grove, 0.08 Herbaceous cropland,  
0.79 Roads, 0.04 Orchard, 0.13 Residual.  
52.67% Scrubland, 37.10 Vineyard, 8.24 Olive grove, 0.96 Herbaceous Cropland,  
1.03 Roads.  
62.70% Scrubland, 27.57 Vineyard, 9.73 Olive grove.  
61.27% Scrubland, 29.26 Vineyard, 9.07 Olive grove, 0.39 Roads, 0.01 Pine  
Plantation.  
61.91% Scrubland, 22.00 Vineyard, 15.94 Olive grove, 0.15 Herbaceous Cropland.  
66.46% Scrubland, 30.54 Vineyard, 2.77 Olive grove, 0.22 Orchard.  
55.06% Scrubland, 35.43 Vineyard, 7.30 Olive grove, 0.17 Herbaceous Cropland,  
1.80 Orchard, 0.24 Residual.  
41.78% Scrubland, 53.73 Vineyard, 3.56 Olive grove, 0.84 Roads.  
36.31% Scrubland, 56.39 Vineyard, 7.00 Olive grove.  
63.43% Scrubland, 12.56 Vineyard, 5.43 Olive grove, 6.17 Herbaceous Cropland,  
10.57 Urban Area, 0.54 Roads, 0.16 Orchard, 0.42, Residual, 0.71.  
53.43% Scrubland, 34.16 Vineyard, 0.75 Olive grove, 10.91 Herbaceous Cropland,  
0.08 Residual, 0.68 Water bodies.  
68.64% Scrubland, 11.73 Vineyard, 17.12 Olive grove, 2.06 Herbaceous Cropland,  
0.45 Water bodies.  
79.35% Scrubland, 11.84 Herbaceous Cropland, 8.73 Wooded Grassland, 0.08  
Orchard.  
84.44% Scrubland, 7.95 Olive grove, 7.31 Herbaceous Cropland, 0.31 Water bodies.  
65.73% Scrubland, 16.10 Vineyard, 12.34 Olive grove, 5.36 Herbaceous Cropland,  
0.02 Residual, 0.44 Water bodies.  
78.67% Scrubland, 21.33 Herbaceous Cropland.  
Semi-arid shrubland steppe.  
Forest (secondary forest): mainly Quercus species with some coniferous  
plantations.  
Scrub: shrubs and uncultivated fields.  
Riverside, lake and riparian vegetation.  
Calcareous submediterranean pastures dominated by hemicryptophytes and  
chamaephytes. Currently subjected to woody encroachment because livestock  
grazing has been reduced or discontinued, however this process is very slow due to  
the climate.  
Abandoned crop lands.  
Natural/silviculture forests.  
No grazing for the past 40 years.  
Quercus pubescens forest.  
Mixed Quercus spp. Forest.  
Mediterranean maquis.  
Garigue.  
Agroforestral landscape.  
Conifer Wood.  
Quercus ilex forest.  
Olive yards.  
Agricultural area.

Basaltic cliff.  
Ocaña ENCINA (holm oak).  
Pioz ENCINA (holm oak).  
Valverde de Alcalá ENCINA (holm oak).  
Romanones ENCINA (holm oak).  
Pico del Águila ENCINA (holm oak).  
Colmenar de Oreja ENCINA (holm oak).  
Aranjuez ENCINA (holm oak).  
El Casar ENCINA (holm oak).  
Zarza de Tajo ENCINA (holm oak).  
Yepes ENCINA (holm oak).  
Tarancón ENCINA (holm oak).  
Perales de Tajuña ENCINA (holm oak).  
Ribatejada ENCINA (holm oak).  
Morata de Tajuña ENCINA (holm oak).  
Valdelaguna ENCINA (holm oak).  
La Toba-Embalse de Alcorlo ENCINA (holm oak).  
Fresno de Torote ENCINA (holm oak).  
Daganzo-Alcalá de Henares ENCINA (holm oak).  
Loeches ENCINA (holm oak).  
Camarma de Esteruelas ENCINA (holm oak).  
Anchuelo ENCINA (holm oak).  
Matarrubia ENCINA (holm oak).  
Alcalá de Henares ENCINA (holm oak).  
Madrid-El Pardo ENCINA (holm oak).  
Guadalajara-Chiloeches ENCINA (holm oak).  
Mesones ENCINA (holm oak).  
Madrid-Valdelatas ENCINA (holm oak).  
Villaseca de Uceda ENCINA (holm oak).  
El Casar ERIAL (recently (<4 years) abandoned cropland stands).  
Torrejón del Rey ERIAL (recently (<4 years) abandoned cropland stands).  
Aranjuez ERIAL (recently (<4 years) abandoned cropland stands).  
Valdetorres de Jarama ERIAL (recently (<4 years) abandoned cropland stands).  
Fresno de Torote-Serracines ERIAL (recently (<4 years) abandoned cropland stands).  
Daganzo-Alcalá de Henares ERIAL (recently (<4 years) abandoned cropland stands).  
Perales de Tajuña ERIAL (recently (<4 years) abandoned cropland stands).  
Campo Real ERIAL (recently (<4 years) abandoned cropland stands).  
Velilla de San Antonio ERIAL (recently (<4 years) abandoned cropland stands).  
Ribatejada ERIAL (recently (<4 years) abandoned cropland stands).  
Robledillo de Mohernando ERIAL (recently (<4 years) abandoned cropland stands).  
Casa de Uceda ERIAL (recently (<4 years) abandoned cropland stands).  
Area with reintroduced topsoil but in which no planting has yet taken place.  
native forests that had never been exploited by mining activities.  
9-year-old bauxite mine pits.  
6-year-old pits.  
4-year-old pits.

Bauxite mine-pit restored 13 years previously by seeding with a wide variety of local species.

Bauxite mine-pit restored 13 years previously by seeding with a wide variety of local species and thinned and burned 2 years prior to sampling.

Bauxite mine-pit at Huntly minesite restored 17 years previously by seeding with a wide variety of local species.

Bauxite mine-pit at Jarrahdale minesite restored 17 years previously by seeding with a wide variety of local species.

Bauxite mine-pit at Huntly minesite restored 12 years previously by seeding with a wide variety of local species.

Bauxite mine-pit at Jarrahdale minesite restored 12 years previously by seeding with a wide variety of local species.

Bauxite mine-pit at Huntly minesite restored 8 years previously by seeding with a wide variety of local species.

Bauxite mine-pit at Jarrahdale minesite restored 8 years previously by seeding with a wide variety of local species.

Bauxite mine-pit at Huntly minesite restored 4 years previously by seeding with a wide variety of local species.

Bauxite mine-pit at Jarrahdale minesite restored 4 years previously by seeding with a wide variety of local species.

Bauxite mine-pit restored 3 years previously by seeding with a wide variety of local species. Sampled next to piles of logs placed in mine-pits.

Bauxite mine-pit restored 3 years previously by seeding with a wide variety of local species and 10m from unmined forest.

Bauxite mine-pit restored 3 years previously by seeding with a wide variety of local species and 30m from unmined forest.

Bauxite mine-pit restored 3 years previously by seeding with a wide variety of local species and 70m from unmined forest.

Bauxite mine-pit restored 3 years previously by seeding with a wide variety of local species and 140m from unmined forest.

Semi-natural habitat.