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Dedicated to Prof. dr. LJUDEVIT ILIJANIĆ on the occasion of his 70th birthday.

Vegetation dynamics of phrygana in erosion rills on Mykonos (Greece)

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The paper investigates the dynamics of phrygana vegetation in erosion rills on Mykonos Island, Greece, one of the Cyclades archipelago. The landscape of the Cyclades islands is heavily influenced by rural depopulation and the abandonment of agriculture. The vegetation is dominated by secondary phrygana (*Trigonella monspelliaca-Sarcopoterium spinosum* community) and therophytic-grassland (*Tuberarietum guttatae* Br. Bl. 31). The consequences of the abandonment of the land are incipient sheet and rill erosion. The species composition of the erosion rills was investigated in relation to the surrounding vegetation and the different erosion processes. Therophytes dominate the vegetation of the erosion rills, and dwarf shrubs; *Sarcopoterium spinosum* and *Cistus incanus* were only found as seedlings. 35% of species of the surrounding phrygana vegetation are absent from the erosion rills and 5% of species of the erosion rills are absent from the surrounding vegetation. A DCA ordination showed differentiation of species composition according to different study sites only. No significant differences in species composition were recorded between sites of dominant soil denudation and accumulation within the erosion rills. However, significant differences in species number and vegetation cover were observed. Rainfall runoff influences the accumulation of diaspores in the shelter of dwarf shrubs, rock fragments and tall geophytes such as *Asphodelus aestivus*.

Key words: vegetation, annuals, erosion, phrygana, Cyclades, Greece

Introduction

The vegetation of the Mediterranean basin has been subject to strong human impact for several millennia. PIGNATTI (1983) distinguishes two phases of human impact: an agropastoral phase, which lasted from the year 1000 B.C. to the

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opening of the Suez Canal in 1869 and a technological phase, lasting from 1869 to the present day. During the first phase coppicing, fire management, grazing and arable farming caused the treeless appearance of the landscape. During the second period large areas of land were abandoned as a consequence of rural depopulation. Today farmers can exist only if they intensify the cultivation of land.

The Cyclades archipelago, especially the island of Mykonos, provides evidence of this development. Until the beginning of the 1900s, valley floors and foothills were used for agriculture. Since the 1950s the exodus from the countryside has led to the abandonment of arable land. The consequences of the abandonment of the land are secondary successions in vegetation (HEISELMAYER 1996), decay of the terraces and incipient erosion (STOCKER 1995), all resulting in changes to the structure of the landscape. The quality and quantity of plant cover, together with the spatial and temporal characteristics of precipitation and runoff, influence the morphodynamic processes (DIECKMANN et al. 1985, GIESSNER 1990). After fires, spatial denudation prevails (NAVEH 1973, May 1990), whereas with increasing vegetation cover sheet erosion decreases and rill erosion increases (SEUFFERT 1983). The rills can develop into gullies (AHNERT 1996), which may reduce slope stability. If the rills become overloaded with eroded material, any surplus is deposited at various points within the rill itself or beyond its margins as a small alluvial fan. Areas of denudation and deposition alternate in these discontinuous rills and are colonized by various plants.

This paper aims to: 1. determine whether species composition in erosion rills is different to that of the surrounding phrygana vegetation; 2. investigate if species composition in erosion rills is correlated to site factors, such as erosion processes and micro-relief; 3. investigate which species can reduce soil erosion and if possibilities for the recolonization of erosion rills exist.

Study area

Figure 1 shows a map of the island of Mykonos. This island is the SE extension of the Euboea-Andros-Tinos island chain. The climate of this part of the Aegean Sea is Mediterranean Type IV 1, with subtropical arid characteristics (WALTER and LIETH 1964). The climate of Mykonos is similar to that of Syros with 449 mm average annual precipitation and a dry period from May to September. The mean annual temperature is 18.3 °C (THEOCHARATOU 1977). The island is part of the median Aegean crystalline belt (DÜRR et al. 1978) and consists of plutonic granites, schists and greenstone.

The highest elevation of Mykonos is less 400 m a.s.l., so the potential vegetation belongs to the *Oleo-Ceratonion* belt (HORVAT et al. 1974).

Agia Anna

Slope between Leonitra and Ormos Mersinis, south of Agia Anna. Exposure: NW, slope inclination: 5–10°, altitude: 40–120 m a.s.l., soil type: Ranker colluvium, parent rock: granite with Matadero (NESTROY 1995).

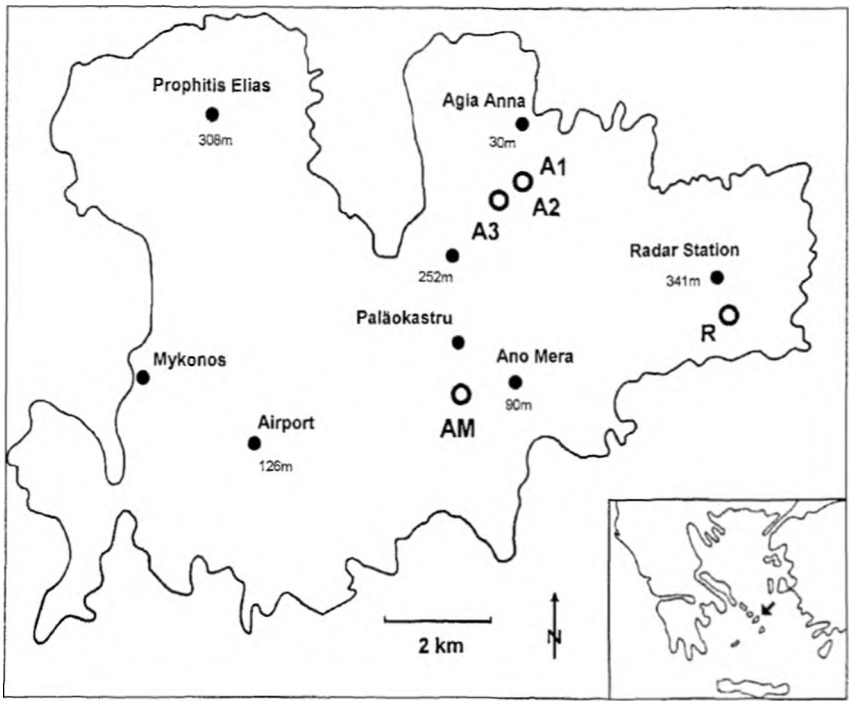

Fig. 1. Map of Mykonos and location of study areas. **A1** = Agia Anna 1, **A2** = Agia Anna 2, **A3** = Agia Anna 3, **AM** = Ano Mera, **R** = Radar Station.

Erosion rills:
Agia Anna 1 (**A1**): upper slope, 80 m a.s.l., NW exposure, 25° inclination,
Agia Anna 2 (**A2**): concave lower slope, 60 m a.s.l., NNW exposure, 5° inclination,
Agia Anna 3 (**A3**): middle slope, 55 m a.s.l., N exposure, 10° inclination.

Ano Mera

Slope between Agios Patamias and Paläokastru, west of Ano Mera. Exposure: NW, slope inclination: 5–10°, altitude: 40–130 m a.s.l., soil type: Ranker, parent rock: granite (NESTROY 1995).

Erosion rill:
Ano Mera (**AM**): middle slope, 100 m a.s.l., NW exposure, 10° inclination.

Radar Station

Slope south of Prophitis Elias near the Radar station. Exposure: SW, slope inclination: 5–15°, altitude 30–250 m a.s.l., soil type: Ranker, parent rock: granite.

Erosion rill:
Radar Station (**R**): lower slope, 120 m a.s.l., W exposure, 10° inclination.

Method

Five study areas were chosen in abandoned fields with slopes of gradients between 10–15° showing typical erosion rills. Following the approach of BRAUN-BLANQUET (1964) 50 relevés were collected and used to characterize the vegetation of each study area. The area of each relevé varied from 15–20 m^2. In each study area one or two drainage courses that showed clear distinction between deposition and denudation were chosen for detailed plant cover investigation. Surfaces of the drainage courses were classified by slope angle, average top soil grain size and a prevailing deposition or denudation process. 120 relevés were then taken from each distinguishable vegetation type and whenever one of the above factors changed distinctly. Since the most important criterion for the sample size was homogeneity, no attention was paid to the minimum area size (BRAUN-BLANQUET 1964). Accordingly, the sample size varied from 30–40 cm^2. Species nomenclature follows TUTIN et al. (1964–1980). Descriptions of the study sites can be found in Appendix 1.

All relevés were classified using the Mulva5 program (WILDI and ORLOCI 1996), applying minimum variance analysis using the covariance coefficient without prior transformation of the data. Species that occurred maximally in two relevés were downweighted. The indirect and direct ordination methods of the Canoco programs (TER BRAAK and SMILAUER 1998) were used to show the relationship between ecological factors and species composition in the drainage courses. DCA analysis showed a length of 3.14 on the first axis, therefore an unimodal model was chosen in accordance with TER BRAAK and SMILAUER (1998). DCA and CCA results have been compared, to see whether the measured environmental factors explain the major variation in the species data (JONGMAN et al. 1995). The significance of differences in grain size, plant cover and species number between locations with a dominant deposition process and a dominant denudation process were tested using the Mann-Whitney U-test.

Results

Vegetation of the study areas is mainly secondary phrygana, dominated by dwarf shrubs such as *Sarcopoterium spinosum, Cistus incanus subsp. incanus*, *Calicotome villosa, Helichrysum italicum* and *Phagnalon graecum*. Therophytes grow in the understory or among the dwarf shrubs, which cover 50–85% of the soil surface. This vegetation is classified as *Trigonella monspelliaca–Sarcopoterium spinosum* community and is typical of sites abandoned at least 25 years ago and where terraces are already completely destroyed (HEISELMAYER et al. 1995). Gentle hill slopes, which have been abandoned for less than 15 years, and where traces of terraces are still visible, are dominated by therophytes of the *Tuberarietum guttatae* BR.BL.31. Geophytes such as *Asphodelus aestivus*, *Muscari comosum* and *Urginea maritima* are very common on these slopes (Tab. 1). All the study areas are grazed extensively and are managed by regular burning.

The phrygana and the vegetation of the drainage courses show differences in their species composition: 34.9% of the species found in the surrounding phrygana vegetation, such as *Carlina corymbosa* and *Galium recurvum* are absent

Tab. 1. Relevés of the surrounding phrygana vegetation and the vegetation of the drainage courses on Mykonos. The species- and relevé groups are results of the cluster analysis performed by Mulva5 (WILDI and ORLÓCI 1996). Relevés with numbers 1–166 were taken from vegetation in the drainage courses, relevés with numbers 307–426 were taken from the surrounding vegetation. A1-A3: Agia Anna, AM: Ano Mera, R: Radar Station.

	Trigonella monspelliaca - Sarcopoterium spinosum comunity																																*Tuberarietum guttatae*																						
	R	R	R	R	R	R	R	R	R	A2	R	R	R	R	R	R	A2	A2	A2	A2	AM	AM	A2	A3	A3	A3	R	R	R	R	R	A3	R	R	R	R	AM	A2	A2	A2	A2	A2	A2	A1	A1	A1	A1	A1	A1	R	A3	A3	R	R	R
Relevé No.	311	307	309	308	392	348	391	351	349	363	350	393	352	394	310	395	407	372	417	331	375	421	405	325	366	410	312	353	396	333	374	329	373	332	418	419	420	376	361	364	362	408	406	379	424	380	425	426	381	354	365	409	397	313	398
Shrubs																																																							
Sarcopoterium spinosum	2	2	3	2	1	1	+	2	2	1	1	3	1	2	2	1	1	3	2	2	.	.	2	3	1	3	3	3	2	.	1	2	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cistus incanus ssp. *incanus*	3	3	4	3	3	4	+	3	2	5	5	4	5	3	4	4	4	3	3	3	3	3	3	+	+	.	2	2	2	1	1	+	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.
Helichrysum italicum	1	1	+	2	1	+	1	1	1	+	+	+	+	+	.	1	+	1	+	+	.	.	1	+	+	.	+	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calicotome villosa	3	1	+	3	2	+	+	.	1	.	.	+	.	.	.	+	.	+	.	+	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cichorium spinosum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	+	+	.	1	2	2	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phagnalon graecum	+	.	+	.	+	.	.	.	.	.	.	.	.	1	+	+	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Herbs																																																							
Trigonella monspelliaca	1	+	1	+	+	.	+	2	+	+	+	1	1	.	1	1	.	+	+	.	+	.	+	.	+	.	1	+	.	+	1	.	+	+	+	.	.	1	.	+	.	+	.	.	.	.	.	.	.	.	1	1	+	.	+
Medicago orbicularis	+	.	+	1	.	.	.	+	.	.	+	.	+	.	.	.	.	.	+	.	.	.	.	+	.	+	+	+	.	.	.	.	+	+	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	+	+	.	.	.
Hymenocarpus circinnatus	+	+	+	1	1	.	+	.	.	.	+	.	.	+	.	+	.	.	.	.	.	.	+	+	.	+	+	1	+	+	+	.	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.
Scorpiurus muricatus	+	+	.	1	.	+	.	+	.	.	+	.	.	.	1	+	.	.	.	+	.	.	.	.	.	.	+	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.
Ornithogalum narbonense	+	+	+	+	.	.	.	.	.	.	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium stellatum	+	.	.	+	.	.	.	.	.	+	+	.	.	.	.	.	1	.	.	.	.	.	.	1	+	.	1	+	+	.	1	.	+	+	.	+	.	.	+	+	+	+	.	.	+	+	.	+	.	+	+	.	+	.	.
Tordylium apulum	+	.	.	.	.	.	.	.	.	+	+	.	.	+	+	.	+	.	.	.	.	.	+	.	.	.	.	+	+	.	1	.	+	+	+	1	.	.	+	+	+	.	+	+	+	1	+	+	+	.	.	.	+	.	.
Vicia lathyroides	.	.	1	.	.	.	.	.	.	1	1	+	1	+	.	.	.	.	+	+	.	.	1	.	.	.	1	+	.	.	+	+	.	+	.	.	.	.	+	.	+	+	.	.	.	+	.	+	.	.	.	.	.	+	.
Medicago disciformis	.	.	.	.	.	.	.	.	+	.	+	.	.	.	.	.	+	.	.	.	.	.	.	+	.	.	+	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.
Briza maxima	.	+	+	+	.	.	1	1	+	+	+	.	.	+	+	.	.	.	.	.	.	.	+	+	+	.	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	+	.	.	.	.	.	.
Urginea maritima	+	+	+	+	.	.	1	+	.	+	+	+	+	+	1	.	+	+	1	.	.	.	+	1	+	1	1	+	+	.	.	.	+	1	.	+	.	.	.	+	+	+	+	+	+	+	.	+	+	.	+	+	1	.	+
Hypochoeris achyrophorus	.	.	+	.	.	.	.	+	.	+	+	.	.	+	+	.	.	.	+	.	.	.	.	.	+	+	+	+	+	.	.	.	+	.	.	+	.	+	+	.	.	+	.	+	.	+	.	.	+	.	.	.	+	.	.
Cuscuta epithymium	1	1	+	.	+	+	1	+	1	+	.	+	+	1	+	+	1	+	.	.	+	.	.	.	+	.	.	.	1	+	.	.	+	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	+	.	.	+	.	.
Ononis reclinata	1	+	+	.	.	.	1	1	+	.	.	1	1	1	.	+	+	.	+	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	+	+	+	.	.	.	.	.	.	.	.	.	.	.	+	.	.
Medicago coronata	+	.	.	.	+	1	1	+	.	+	+	+	+	1	+	+	.	.	.	.	.	.	1	.	+	.	.	.	+	.	.	.	+	+	.	.	.	.	.	.	+	1	.	.	.	.	.	.	.	.	.	1	.	.	.
Lotus creticus	1	1	+	+	1	1	1	+	+	+	1	1	+	1	.	.	.	+	.	.	+	.	.	+	.	.	.	.	1	+	.	.	1	1	1	.	.	.	.	2	.	+	.	.	.	+	.	+	.	.	+	1	.	+	.
Vicia villosa ssp. *microphylla*	1	1	1	1	1	1	1	+	1	1	1	1	.	.	1	1	.	.	.	.	.	.	+	1	1	2	+	1	1	.	1	.	1	.	1	.	.	.	+	+	+	+	.	+	+	+	.	+	.	.	2	2	1	.	.
Trifolium arvense	+	+	1	+	.	+	+	+	+	+	1	.	+	+	.	.	.	+	+	+	.	.	+	+	.	+	1	+	+	.	+	.	+	+	+	.	+	.	+	+	+	.	.	+	+	+	+	+	+	+	.	.	+	+	.

Tab. 1. – continued

	Trigonella monspelliaca - Sarcopoterium spinosum comunity																																*Tuberarietum guttatae*																						
	R	R	R	R	R	R	R	R	R	A2	R	R	R	R	R	R	A2	A2	A2	A2	AM	AM	A2	A3	A3	A3	R	R	R	R	R	A3	R	R	R	R	AM	A2	A2	A2	A2	A2	A2	A1	A1	A1	A1	A1	A1	R	A3	A3	R	R	R
Relevé No.	311	307	309	308	392	348	391	351	349	363	350	393	352	394	310	395	407	372	417	331	375	421	405	325	366	410	312	353	396	333	374	329	373	332	418	419	420	376	361	364	362	408	406	379	424	380	425	426	381	354	365	409	397	313	398
Avena barbata	+	+	+	+	.	+	+	1		.	+	+	+	1	+	+	+	1	1	+	+	+	+	+	+	+	1	+	+	+	1	+	1	1	1	1	.	+	1	1	+	1	+	.	+	.	.	1	1	.	1	.	.	.	.
Centaurea raphanina	+	.	+	+	.	.	.	.	.	.	.	+	.	+	+	.	+	+	1	+	+	+	1	1	+	1	+	+	.	1	1	+	+	1	.	1	+	+	+	+	1	1	+	.	.	.	.	.	+	.	+	1	.	.	.
Leontodon tuberosum	.	.	.	+	.	+	1	+	.	.	.	.	.	1	+	.	.	+	1	1	+	+	.	+	+	+	+	+	1	1	1	1	1	1	+	1	.	.	.	+	.	1	+	.	.	.	.	.	.	.	+	+	.	.	.
Aetheorhiza bulbosa	.	+	.	1	+	+	+	.	.	.	+	.	.	+	.	.	.	+	+	+	+	.	.	.	.	.	+	.	+	+	1	.	+	+	+	.	1	1	.	+	.	+	.	.	.	1	.	.	.	.	.	.	.	.	.
Papaver rhoeas	.	.	+	.	+	.	.	+	+	.	.	.	.	.	+	.	.	.	.	+	+	+	+	.	.	.	+	+	+	.	.	+	+	+	.	.	+	+	+	+	+	+	+	.	.	1	.	+	1	.	.	.	.	.	.
Hypericum sp.	.	.	.	.	.	+	+	.	.	.	.	+	.	.	.	.	.	+	.	+	+	+	+	.	.	.	.	.	.	+	.	.	.	.	.	.	.	1	+	+	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.
Carlina corymbosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	+	+	.	.	+	1	1	1	.	+	.	1	2	+	+	+	1	+	.	.	.	+	+	+	.	.	+	.	.	.	+	.	+	+	.	.	.
Galium recurvum	.	.	.	.	.	.	.	.	.	.	.	+	.	.	+	+	.	.	+	1	.	1	.	.	.	.	+	.	.	.	.	.	.	+	.	+	.	.	.	.	.	+	.	.	.	.	.	+	.	.	.	.	.	.	.
Scandix australis	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	+	+	+	.	.	.	+	+	1	.	.	.	.	+	.	.	1	+	+	.	.	.	.	.	+	.	+	.	.	.	.	.	.
Rumex tuberosus	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	+	+	1	1	.	1	1	1	1	.	+	.	.	.	+	.	.	.	.	.	.	.	.	+	+	.	.	.
Biscutella didyma	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	+	+	+	+	.	+	.	+	+	.	+	+	.	+	.	.	.	.	.	+	.	.	.	.	.	.	+	.	.	+	.	.	.
Bromus madritensis	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	+	+	+	.	.	+	.	.	1	.	+	1	.	.	+	+	.	+	.	.	.	+	.	+	.	.	.	.	.	+	+	.	.	.	+	+	.
Vulpia ciliata	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	+	.	.	.	+	.	.	.	.	.	+	+	.	.	.	+	.	+	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Plantago bellardii	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	+	1	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Polycarpon diphyllum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	2	2	2	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	3	1	.	.
Silene colorata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	1	+	+	1	.	+	+	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	1	.	.
Rumex bucephalophorus	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	+	+	.	1	1	1	+	+	+	+	+	.	1	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	+	+
Tolpis barbata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	+	+	.	+	+	.	.	.	+	.	.	.	+	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	+	.
Lophochloa cristata	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	1	.	.	.	.	.	.	.	+	.	.	.	+	.	.	+	+	.	.	1	+	.	.	.	+	.	.	.	+	1	+	.	.	+	+	+	.	1	+	+
Calendula arvensis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	1	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Trifolium tomentosum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	.	1	1	.	.	.	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.
Hedypnois cretica	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	+	.	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.
Lotus edulis	1	.	1	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	+	.	+	+	.	.	+	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Plantago afra	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	1	.	+	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	1	1	1
Sedum caespitosum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	+	+	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	+	.
Valantia hispida	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	+	.	.	+	+	.	.	1	+	+	+	+	.	.	.	.	1	.	.	.	.	.	.	+	.	.	+	.	.	.	.	.	.	.	+	.
Ornithopus compressus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	+	+	.	.	.	.	.	.	.	.
Helichrysum italicum	.	.	.	.	.	.	.	+	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	+	.	1	.	.	+	.	.	.	.	1	+	+	+	.	+	.	.	.	.	.	.
Arabidopsis thaliana	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	+	.	+	.	.	.	.	.	1	+	1	.	+	.	.	.	.	.	.	.	.	.	.
Euphorbia peplus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	+	.	.	.	.	.	+	.	.	+	.	.	.	+	+	+	+	.	.	1	1	+	1	1	1	.	.	.	.	.	.

Tab. 1. – continued

	Trigonella monspelliaca - Sarcopoterium spinosum comunity																																*Tuberarietum guttatae*																						
										A							A	A	A	A	A	A	A	A	A	A						A					A	A	A	A	A	A	A	A	A	A	A	A	A		A	A			
	R	R	R	R	R	R	R	R	R	2	R	R	R	R	R	R	2	2	2	2	M	M	2	3	3	3	R	R	R	R	R	3	R	R	R	R	M	2	2	2	2	2	2	1	1	1	1	1	1	R	3	3	R	R	R
Relevé No.	311	307	309	308	392	348	391	351	349	363	350	393	352	394	310	395	407	372	317	331	375	421	405	325	356	410	312	353	396	333	374	329	373	332	418	419	420	376	361	364	362	408	406	379	324	380	425	426	381	354	365	409	397	313	398
Papaver dubium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	1	.	.	.	.	.	.	.	.	.	.	.	.	.			+	+	.	.	.	.	+	+	1	.	+	.	1	+	1	.	.	.	.	.	.
Gagea graeca	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	2	1	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	1	1	1	.	.	.	.	.	.
Orchis papilionacea	.	.	+	.	.	.	.	.	.	.	.	+	.	1	+		.	.	+	+	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	+	.	.	.	.	.	.	.
Lagurus ovatus	.	.	+	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	+	.	.	.	+	+	.	.	.	.	.	.	+	.	.	.	.	.	.	+	.	.	.	.	.	1	.	.	.	.	.	.	.	+	.	.
Scirpus cernuus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	+	.	+	.	.	.	.	.	.	.	.
Vulpia myuros	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		+	.	.	1	.	1	1	.	.	.	.	.	.	.
Scirpus holoschoenus	.	.	.	.	+	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.	+	+	.	.	.	+	.	.	.
Allium sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	+	.	+	1	.	.	.	.	.		.
Verbascum phlomoides	.	.	.	.	.	.	.	+	.	.	.	.	+	.	+	.	.	.	.	.	.		1	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	+	.	.	.	.	.	.	.
Crassula tillaea	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	+	+	+	+	.	.	+	.	.	.	.	.	+	.	+	.	.	.	+	+	+	1	.	.	2	.	.	.	.	.
Trifolium subterranum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.	+	.	.	.	.	.	.	.	.	1	.	.	+	.	.	.	+	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
Ranunculus sardous	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	+	.	.	.
Tuberaria guttata	.		.	.	.	.	+	+	.		.	.	.	.	.	1	.	+	+	.	1	.	+	.	.	.	1	2	2	+	+	.	.	.	.	.	+	+	+	1	+	1	.	2	2	1	+	1	1	2	.	.	1	2	1
Logfia gallica	.	.	.	.	.	.	.	+	.	.	.	.	.	+	+	1	+	.	.	1	1	1	.	+	+	.	1	1	1	+	+	+	+	+	+	1	+	1	+	+	1	.	+	1	1	1	1	1	1	1	+	.	1	+	1
Asterolinon linum-stellatum	+	1	+	+	.	.	+	+	+	+	.	.	.	.	+	1	+	.	+	.	+	1	1	+	+	1	1	+	1	1	+		+	+	+	1	1	1	+	+	1	1	1	1	1	1	1	1	+	1	+	+	1	1	+
Anagallis foemina	1	1	1	1	1	1	1	1	1	+	+	+	1	1	1	1	1	1	+	+	1	1	+	+	+	+	1	1	1	1	+	+	1	1	1	+	1	1	1	2	2	2	2	1	1	1	1	1	2	1	+	1	1	+	1
Trifolium campestre	1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	+	1	1	1	+	1	+	1	1	2	+	2	1	2	1	2	+	3	3	3	2	+	1	1	2	2	1	1	+	+	+	+	1	1	1	1	1	1	1	1
Aira caryophyllea	+	+	.	.	+	+	1	+	1	1	.	.	.	+	.	1	1	1	1	+	1	1	1	+	+	.	+	+	1	1	+	.	1	+	1	1	1	1	+	+	1	1	+	1	1	1	1	1	1	1	.	1	+	.	+
Cistus incanus ssp. incanus	1	1	1	.	1	1	1	1	1	.	+	.	+	.	.	.	+	1	+	+	1	1	1	.	.	.	.	+	+	.	+	.	+	+		.	1	2	1	2	2	2	1	.	+	1	+	1	1	+	.	.	+	.	+
Arisarum vulgare	1	1	1	1	+	+	+	1	1	1	+	1	1	1	1	1	+	+	1	+	1	1	1	1	1	1	+	+	+	1	+	+	+	+	1	1	1	1	1	1	2	1	1	.	.	.	.	.	.	.	+	1	+	+	+
Asphodelus aestivus	1	1	1	1	1	+	1	1	1	1	1	1	2	1	1	2	1	1	1	1	.	+	1	1	1	1	1	1	1	1	2	1	1	2	2	2	1	.	1	2	2	2	1	2	3	2	1	1	2	1	1	2	1	1	.
Senecio gallicus	+	+	+	+	+	+	.	.	+	+	.	.	+	.	.	+	+	+	+	+	.	+	+	.	1	+	.	+	1	.	.	+	+	+	+	+	.	+	+	.	+	+	+	+	+	1	1	+	+	+	.	+	1	+	.
Muscari comosum	+	+	+	+	+	.	+	.	+	+	.	.	+	.	+	+	.	+	.	+	.	+	.	+	.	1	+	+	+	1	1	.	.	+	+	1	.	.	+	.	.	.	+	+	1	.	.		.	.	+	.	+	+	
Linum strictum	+	+	.	+	.	.	.	.	.	.	.	.	.	.	.	+	+	+	.	+	+	+	.	+	+	.	+	+	.	+	+	.	+	.	1	1	.	.	+	1	+	+	.	.	.	.	.	.	.	+	.	+	.	+	+
Petrorhagia prolifera	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	1	+	+	.	1	1	+	1	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.
Gynandriris sisyrinchium	.	+	.	.	.	.	.	+	.	.	.	.	.	+	+	.	.	.	.	.	1	+	.	+	1	1	.	+	1	+	+	+	+	+	.	1	1	+	.	+		+		.	.	.	.	.	.	.	.	+	.	+	+
Myosotis ramosissima	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.	+	+	+	.	.	.	.	.	.	+	.	.	+	+	+	.	+	+	.	+	.	+	.	+	+	+	+	.	.	.	.	.	+	.	.
Euphorbia exigua	.	.	+	.	.	.	.	+	.	+	.	.	.	1	+	.	.	1	+	1	.	1	+	+	+	.	1	+	1	1	1	+	1	+	1	1	1	+	+	1	1	+	1	.	+	.	.	.	.	.	.	.	.	.	.
Catapodium rigidum	+	+	+	+	.	+	+	+	+	.	+	.	.	1	.	1	+	+	.	.	.	+	+	+	+	1	1	+	1	1	+	+	+	+	1	1		+	+	+	+	1	+	.	.	.	.	1	+	+	+	1	1	+	
Trifolium uniflorum	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	+	.	+	+	+	1	1	1	+	+	+	1	1	1	+	+	+	2	.	+	+	.	.	.	+	.	.	.	.	.	.	.	.	.	.	+	1

Tab. 1. – continued

	Trigonella monspelliaca - Sarcopoterium spinosum comunity																																*Tuberarietum guttatae*																						
										A							A	A	A	A	A	A	A	A	A	A						A					A	A	A	A	A	A	A	A	A	A	A	A		A	A			
	R	R	R	R	R	R	R	R	R	2	R	R	R	R	R	R	2	2	2	2	M	M	2	3	3	3	R	R	R	R	R	3	R	R	R	R	M	2	2	2	2	2	2	1	1	1	1	1	1	R	3	3	R	R	R
	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	4	3	3	4	4	3	3	4	3	3	3	3	3	3	3	3	4	4	4	3	3	3	3	4	4	3	4	3	4	4	3	3	3	4	3	3	3
Relevé No.	1	0	0	0	9	4	9	5	4	6	5	9	5	9	1	9	0	7	1	3	7	2	0	2	6	1	1	5	9	3	7	2	7	3	1	1	2	7	6	6	6	0	0	7	2	8	2	2	8	5	6	0	9	1	9
	1	7	9	8	2	8	1	1	9	3	0	3	2	4	0	5	7	2	7	1	5	1	5	5	6	0	2	3	6	3	4	9	3	2	8	9	0	6	1	4	2	8	6	9	4	0	5	6	1	4	5	9	7	3	8
Trifolium scabrum	.		+	.	.	.	.	.	+	.	+	+	.	.	.	+	.	+	.	.	.	.	1	+	+	1	1	+	+	.	+	.	+	+	+	+	.	.	+	+	+	+	.	+	+	+			.	+	.	.	+	+	1
Misopates orontium	+	+	.	+	.	.	1	+	+	.	+	.	+	1	+	1	.	.	.	.	.	.	.	+	.	+	+	+	+	+	+	.	+	1	+	+	.		.	.	+	.	+	+	+	+	1	+	+	+	.	.	1	+	+
Crepis multiflora	+		.		.	.	+	+	+	.	.	.	.	1	+	+	.	1	1	1	.	.	+	+	1	+	1	1	2	1	1	.	1	1	2	1	.	.	.	+	+	.	.	2	2	1	2	1	.	1	+	1	1	+	1
Psilurus incurvus	+	.	.	.			.	.			.	.	+	+	.	+	.	.	.	.	+	.	.	+	+	1	+	+	1	+	+	+	+	+	+	1	.	.	.	.	+		.	+	1	+	.	+	+		+	+	+	+	.
Trifolium glomeratum	+	.	+	1	1	+	+	+	.	+	.	.	.	.	+	.	+	.	.	.	.	.	.	+	+	.	.	.	.	.	.	1	+	+		.		.	.	+	.	.	.			.	1	+	+	+	.	.		.	.
Sherardia arvensis	+	+	1		+			.			.	+		+	.	.		.	.	.	.	.	.	.	.	.	1	+	+	1		.	1	1	1	1	+	+	+	.	.	.	.	.	.	.		.	1	.	.	1	+	.	
Cerastium glomeratum	+	+		.	.	.		.	+		+	.	.	.	.	.	.	.	.	.	+	.	+	+	.	.	+	+	+	1	.	+	+		+	+	+	+	.	+	.	.	.	+	.	+	+	.		+			+	.	
Galium murale	+	+	+	.					.			.			+	1	+	+	1	1	1	1	+	.	+	.	+	+	+	+	+	.	+	+	+	+	1	1	.	+	+	.	+	.	+	+	+	.	+	.	+	.	.	+	.
Romulea bulbocodium	+			.				.	.		.		.		.		+	1	1	1	+	1	+	1	1	1	+	.	+	+	+	.	+	+	+	.	1	+	.	.	.	1	.	.	.	.	+	.		.	1		.	+	+
Sagina apetala			.		.			+	.						.	.		.	.	.	+	1	.	+	.	+	.	+	+	.	+	.	+	+	.	.	1	+	.	+	+	+	+	1	1	+	1	1	+	.	.	.	.	.	.
Sarcopoterium spinosum		.	1			1	.	+	1	+	+		+	+	.	.	+	+	+	1	2	1	.	.	.		.		+	2	+	.	3	3	1	.	1	1	+	1	1	1	+	.	+	+	+	.	+		2	2		.	.
Medicago praecox	+			1			.		.	.	.	.	.	.	1					.	.	+	.	+	.	.	+	+	+	+	+	.	+	+	.	.	.	+	.	.			.	.	.	.	.				+	.	.	.	.
Trifolium angustifolium			+				.	+	.	.		.		.	.	+	.	+	.	.	.	+	+	.	+						+		+	+	.	.	.	+	.	.	.	+	.	.	.	.		+	.	.	.	.		.
Poa bulbosa	.	.	.			.	.		.	.	.	.	.	.	.			.	.		.		+	+	.	+	+	+			1	1		+	.		.	.	.	.	.	.	.	+	.	.				.	.		.		
Filago pyramidata			.	.						.		.	.	+	.		.				.			+	+	1		.	.	1	+	+		+	+	+	+	+	.	.	+	.	+	+	.	+	.	+	+				.	.	
Linaria pelisseriana				.	.	.	.	+	+	.	.		.	.	.	+		+	.		.			+	+	.	+		+	1	+	+	+	1	1	+	.	+	.	+	+	.	1	1	1	1	1	1	+	+		+	+	+	.
Lotus conimbricensis			.	.	.	.		+		.	+		+	.	+	.		.	.	.	.		.	+	+	+	.		.			+	.	+	+		.	+	.	.	.		.				.	.			.		+		.
Torilis nodosa		.	.	.	.	.		.	.	.	.	.	.	.	.	.					.	.	.	.	.	.	.	.	.	.	.	.	.	.	+		.	.	.	.	.	.	.	.	.	.		.			.	.	.	.	.
Bupleurum gracile		.	.	.	.	.		.	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.	+	.		.	.		.	+	.	.		.	.		.	.	.	.	+	.	.	.	.	.	.	.	.
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Aizoon hispanicum		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		+	.	.	.	.	.	.	.		.	.	.		.	.	.	.	.	.	.	.	.	.	.
Reichardia picroides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	.	.	.	+	.	+	+		.	.	.	.	.		.	.	.	.	.		.	.	.	.	.	.	.	.	.
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Erodium cicutarium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.		.	.	.
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Oxalis pes-caprae	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	2	2	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.
Trifolium nigrescens	+	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.		.	.	.	.	.	.	.	+	.	.	.	.	.	.	1	+	+	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.	+	.	.	.
Phleum arenarium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	+	.	.	.	.	1	.	.	.	.	.	1	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Dactylis glomerata agg.		.		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	+	.	+	.	+	.	.	.	+	1	+	.	.	.	+	+	.	.	.	.	.		+	.	.	.	.	.	.	+	+	.	.	.
Anthoxanthum gracile	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	+	+	.	.	.	.		1	.		.	+	.	.	.	.	1	.	.	.	.	.	+	.	+		+	.	.	.	.	

Tab. 1. – continued

	Trigonella monspelliaca - Sarcopoterium spinosum comunity																																*Tuberarietum guttatae*																						
	R	R	R	R	R	R	R	R	R	A2	R	R	R	R	R	R	A2	A2	A2	A2	AM	AM	A2	A3	A3	A3	R	R	R	R	R	A3	R	R	R	R	AM	A2	A2	A2	A2	A2	A2	A1	A1	A1	A1	A1	A1	R	A3	A3	R	R	R
Relevé No.	311	307	309	308	392	348	391	351	349	363	350	393	352	394	310	395	407	372	417	331	375	421	405	325	366	410	312	353	396	333	374	329	373	332	418	419	420	376	361	364	362	408	406	379	424	380	425	426	381	354	365	409	397	313	398
Lagoecia cuminoides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	+	.	+	+	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Anchusa officinalis	.	+	+	+	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	1	.	.	.	.	.	1	.	.	+	1	.	+	.	.	.	.	.	.	.	.	1	+	.	.	.	.	.	.	.	.
Fumana officinalis	.	+	.	+	+	+	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Micromeria nervosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Crocus cartwrightianus	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	+	.	.	.	.	.	.	.	.	.	.	+	.	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.

	Drainage ways																																																										
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	AM	R	R	R	R	R	R	R	R	R	AM	R	R	A3	R	R	R	R	R	R	AM	A3	A3	A3	A3	A3	A3	A3	A3	A3	A3	A3
Relevé No.	75	91	88	78	17	13	81	76	10	15	14	9	20	12	11	90	87	80	79	134	85	82	144	16	89	131	7	132	18	138	133	136	135	137	143	142	141	148	8	139	48	140	83	46	84	86	103	100	43	160	161	165	166	162	163	164	107	105	111
Shrubs																																																											
Sarcopoterium spinosum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cistus incanus ssp. incanus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Helichrysum italicum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calicotome villosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cichorium spinosum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phagnalon graecum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Herbs																																																											
Trigonella monspelliaca	+	+	+	+	.	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	+	.	.	.	+	1	+	1	1	.	.	.	1	.	.	1	.	.	.	.	.	.	.	.	.	+	+	.	.	+	.	.	.	.	.
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Hymenocarpus circinnatus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	1	1	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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Ornithogalum narbonense	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
Trifolium stellatum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Tordylium apulum	.	.	.	.	.	.	.	.	.	.	+	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vicia lathyroides	.	.	.	+	.	.	.	.	+	.	+	+	+	.	+	.	.	+	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	.	+	.	.	.	.	.	.	.	.	.	+
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Briza maxima	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.

Tab. 1. – continued

	Drainage ways																																																									
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	A M	R	R	R	R	R	R	R	R	R	A M	R	R	A 3	R	R	R	R	R	R	A M	A 3	A 3	A 3	A 3	A 3	A 3	A 3	A 3	A 3	A 3	A 3
Relevé No.	75	91	88	78	17	13	81	76	10	15	14	9	20	12	11	90	87	80	79	134	85	82	144	16	89	131	7	132	18	138	133	136	135	137	143	142	141	148	8	139	48	140	83	46	84	86	103	100	43	160	161	165	166	162	163	164	107	105	111
Urginea maritima	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hypochoeris achyrophorus	+	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.
Cuscuta epithymium	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ononis reclinata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.
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Lotus creticus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vicia villosa ssp. microphylla	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	.	+	.	1	+	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
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Avena barbata	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Centaurea raphanina	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.
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Aetheorhiza bulbosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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Carlina corymbosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Galium recurvum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Scandix australis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.
Rumex tuberosus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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Bromus madritensis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.
Vulpia ciliata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.
Plantago bellardii	2	1	1	+	2	3	1	1	2	2	2	1	.	1	1	+	+	+	+	.	+	+	2	1	1	1	2	+	2	.	.	+	.	+	.	+	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Polycarpon diphyllum	1	1	1	1	+	+	.	1	+	+	+	+	+	1	+	1	.	.	1	1	.	+	1	1	.	+	+	1	+	1	1	+	+	.	.	+	+	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Silene colorata	1	1	1	1	1	1	1	1	+	1	+	1	1	1	1	+	.	+	+	.	+	.	.	.	.	+	.	1	1	1	.	2	.	2	1	1	1	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rumex bucephalophorus	2	2	1	1	1	+	1	.	.	.	.	1	+	.	+	+	1	1	1	.	1	.	1	+	.	1	+	1	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Tolpis barbata	+	+	+	1	1	+	.	.	.	.	.	.	+	1	.	.	+	.	+	.	.	.	1	.	.	.	1	.	+	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lophochloa cristata	+	1	1	1	1	+	1	.	.	.	+	+	.	.	.	.	+	+	.	.	.	+	1	+	+	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calendula arvensis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium tomentosum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hedypnois cretica	+	1	.	+	.	+	.	.	.	.	+	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Tab. 1. – continued

Drainage ways

	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	A M	R
Relevé No.	75	91	88	78	17	13	81	76	10	15	14	9	20	12	11	90	87	80	79	134	85	82	144	16	89	131	7	132	18
Lotus edulis	.	.	.	.	.	.	.	.	.	.	+	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Plantago afra	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	+	.	+	.	.	.	.	.	.	.	.	.	.
Sedum caespitosum	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.
Valantia hispida	.	+	.	.	+	+	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	+	.
Ornithopus compressus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Helichrysum italicum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Arabidopsis thaliana	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Euphorbia peplus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.
Papaver dubium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.
Gagea graeca	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Orchis papilionacea	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lagurus ovatus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Scirpus cernuus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vulpia myuros	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Scirpus holoschoenus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Allium sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Verbascum phlomoides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Crassula tillaea	1	.	1	+	+	+	1	.	.	+	+	+	+	.	.	1	.	.	.	.	.	.	+	+	.	.	+	.	.
Trifolium subterranum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ranunculus sardous	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Tuberaria guttata	.	.	.	+	+	+	.	.	+	+	+	+	.	1	.	.	.	.	.	.	.	+	2	1	.	.	.	.	.
Logfia gallica	1	.	+	+	+	1	+	1	1	+	1	+	+	+	+	1	+	.	+	+	.	+	1	+	+	.	1	+	+
Asterolinon linum-stellatum	.	1	+	+	+	+	+	.	+	+	+	+	+	+		+	+	+	.	.	+	+	+	.	.	+	1	+	+
Anagallis foemina	.	2	+	+	+	+	+	+	1	.	+	1	1	.	.	+	+	+	+	1	+	+	1	+	.	1	+	1	1
Trifolium campestre	.	.	+	.	+	1	1	.	.		+	1	+	.	+	.	+	3	3	1	1	+	.	2	.	.	.	1	
Aira caryophyllea	.	.	1	+	+	1	1	.	.	+	.	+	.	+	.	+	.	.	.	.	.	+	+	+	+	+	+	+	1
Cistus incanus ssp. incanus	+	.	+	+	.	.	.	.	+	+	.	.	.	+	.	+	.	+	+	+	.	+	2	1	.	+	.	2	+
Arisarum vulgare	1	1	+	+	.	+	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	+
Asphodelus aestivus	.	.	+	.	.		.	1	3	.	.	.	.	.	.	.	2	+	+	.	.	.	.	.	.	.	.	.	3
Senecio gallicus	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	+	.	2	+

	R	R	R	R	R	R	R	R	A M	R	R	A 3	R	R	R	R	R	R	A M	A 3	A 3	A 3	A 3	A 3	A 3	A 3	A 3	A 3	A 3	A 3
Relevé No.	138	133	136	135	137	143	142	141	148	8	139	48	140	83	46	84	86	103	100	43	160	161	165	166	162	163	164	107	105	111
Lotus edulis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Plantago afra	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Sedum caespitosum	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.
Valantia hispida	.	.	.	.	.	.	.	.	.	+	.	.	+	.	+	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ornithopus compressus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Helichrysum italicum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Arabidopsis thaliana	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Euphorbia peplus	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.
Papaver dubium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Gagea graeca	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Orchis papilionacea	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lagurus ovatus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Scirpus cernuus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vulpia myuros	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Scirpus holoschoenus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Allium sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.
Verbascum phlomoides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Crassula tillaea	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium subterranum	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ranunculus sardous	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Tuberaria guttata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	2	1	1	.	1	+	+	1	1	+	+
Logfia gallica	+	+	+	+	+	+	.	.	.	.	1	+	.	.	.	.	.	+	.	+	.	.	.	.	.	.	.	+	.	.
Asterolinon linum-stellatum	+	.	.	+	1	1	.	1	+	+	1	+	+	.	+	+	.	+	+	1	+	+	+	+	.	.	.		.	.
Anagallis foemina	+	.	.	.	+	1	.	+	+	.	.	+	1	+	.	.	.	.	.	+	+	.	.	.	.	+	.	.	.	.
Trifolium campestre	.	.	.	.	1	3	4	1	1	1	.	.	.	.	.	.	.	+	1	+	1	2	1	1	.	+	+	+	+	+
Aira caryophyllea	.	.	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cistus incanus ssp. incanus	+	+	+	+	2	.	1	+	.	.	1	+	+	.	.	.	.	+	.	+		1	1	1	+	+	1	+	+	+
Arisarum vulgare	.	.	.	+	+	.	.	.	.	+	.	+	.	.	.	.	.	.	.	2	+	.	+	+	.	.	.	.	.	.
Asphodelus aestivus	.	.	.	1	.	.	.	.	.	.	2	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.
Senecio gallicus	+	1	2	1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Tab. 1. – continued

	Drainage ways																												
																												A	
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	M	R
Relevé No.	75	91	88	78	17	13	81	76	10	15	14	9	20	12	11	90	87	80	79	134	85	82	144	16	89	131	7	132	18
Muscari comosum	+	.	.	+	.	.	+	.	.	.	.	.	1	.	.	+	.	.	+	.	.	+	.	.	1	.	.	.	.
Linum strictum	+	.	.	.		.	.	.	.	.	.	.	.	.	.	+	.					+		.	+	.	.	.	.
Petrorhagia prolifera	.	.	+	+	+		.	.	.	.	+	.	+	.	+	+	.	.	.	.	.	.	.	+	.	.	+	.	.
Gynandriris sisyrinchium	.		+	.	.	.	+	.	.	+	+	.	+	.	+	.	.	.	.	+	.	.		.	.	.	.	.	.
Myosotis ramosissima	.	+	+	.	.	.	+	.	+	.	.	.	+	+	+	.	.	.	.	.	.	.	.	+	+	.	.	.	
Euphorbia exigua	+	+	+	.	+	+	+	+	+	+	+	+	+	+	+	.	.	.	+	.	.	.	.	.	.	.	.	+	1
Catapodium rigidum	1	+	1	+	+	.		.	1	.	+	+	1	1	1	1	+	1	1	1		.		1	.	+	+	1	+
Trifolium uniflorum	+	1	.	.	.	.	.	+	.		+	1	1	2	+	+	+	1	+	2	2	+	1	1	.	.	.		+
Trifolium scabrum	.	+			.	.	.	.	.	.	+	3	2	3	.	.	+	.	.	1	2	.	2	2	.	1	+	1	+
Misopates orontium	+	+	+	.	.	+	.	.	+	+	+	+	+	.	.	.	+	.	+	.	+	+	+	.	.	.	+	.	
Crepis multiflora	1	1	+	1	1	2	+	1	2	+	+	1	2	2	+	.	1	1	+	.	.	+	1	2	+	.	+		.
Psilurus incurvus			+	+		.	+	.	+		+	+		.	.	.	.	+	+	.	.	.	.	.	.	2	1	1	+
Trifolium glomeratum		+				.	.	.	.		.	+	.	.		.	.	+	2	2	+	+	2	.	.	1	.	.	.
Sherardia arvensis	.	+		.		.	.	.			.	.	.				.	.	.	.	.	.	.	.	.	+	+		.
Cerastium glomeratum		.	.			.	.		+				+	+		.			.	.	.		.			+	+	+	.
Galium murale	+	.	.		+	.	.	.	.	.				.							.	.		1			+	+	
Romulea bulbocodium			+	+	+	.	1		.	.	.	+		.	+	+	+	+	.	.	.	.	+	+	+	.	+	.	.
Sagina apetala	+	.		+	+		+		.		.	.							+		.		+	.		.	+	.	.
Sarcopoterium spinosum					.	.			.					.					+		.			.		.	+	.	.
Medicago praecox	.		.	.		.	.	.	.	.	.			.							.	.	.	.	.	1	.	.	.
Trifolium angustifolium				.		.	.	.	.					.								.	.	.	+	3	2	.	.
Poa bulbosa	.	.		.		.			.	.	.	1		.	.				.	.	.	.	.	.	.	1	1	.	.
Filago pyramidata	.	.	.	.		.	.		.					.								.	.	.	.	.	.	.	.
Linaria pelisseriana					.		.	.	.	.	.	.	.	.						.	.	.	.	.	.	.	.	.	+
Lotus conimbricensis		+	.	.	.	.	.	.			.					.		.	.		.	.	+	.	.	.	.	.	.
Torilis nodosa	+		+				+	.	.								+		+		+	+	.	.	.	.	.	.	.
Bupleurum gracile	+	1	+	+			+		+		.				.	1	.	.	.	.	.	+	.	+	.	.	.	.	.
Stipa capensis	1	+	.	.				1		.		.		.			.		.	.	.	.	.	.	.	.	.	.	.
Aizoon hispanicum	1			.			.		+		.		.	.		.		.		.	.	.	.	.	.	.	+	+	.
Reichardia picroides	.	.	.	.	.						.		.	.		.				.	.	.	.	.	.	.	.		.

	Drainage ways																													
									A			A							A	A	A	A	A	A	A	A	A	A	A	A
	R	R	R	R	R	R	R	R	M	R	R	3	R	R	R	R	R	R	M	3	3	3	3	3	3	3	3	3	3	3
Relevé No.	138	133	136	135	137	143	142	141	148	8	139	48	140	83	46	84	86	103	100	43	160	161	165	166	162	163	164	107	105	111
Muscari comosum	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.		.	.	.	.	.		.	.	.	.	.	.
Linum strictum	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.		+	.	.	.	.	.	.	+	.	.	.		.
Petrorhagia prolifera	.	.	.	.	.	.	.	.			1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Gynandriris sisyrinchium	.	.	.	1	.	.	+	.		.	.	.	.		.	.	.	.		.	.	.	.	.			.		.	.
Myosotis ramosissima	.	.	.	.	.	.	.	.	.	+	.	.	.		.	.	.	+		.	.	.	.	.	.	.	.	.	.	
Euphorbia exigua	+		.	.		+	.		.	+	1	.	.		+	.	+	+	.	.	.	.	.	.	+	+	.	.	.	.
Catapodium rigidum	+	1	1	+	+	1	1	+	.	+	+	.	.			+		+	.	+	.	.	.	.	.	.	.	.	.	+
Trifolium uniflorum	.		.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.		.	.		.	.	.	.	.	.	.	
Trifolium scabrum	.	.	1	.	.	2	.	1	1	1	1	+	1		+	.	.	1	+	1	1	1	1	.	.	.	.	.	.	
Misopates orontium	.	.	.	.	.	+	.	.	.	.	1	+	.				+	.	.		.	.	.	.	.	.	.	.	.	
Crepis multiflora	.	.	.	.	.	1				.	2	+	1	+		1	+	.	.	.	.	.	.	.	.	.	.	.	.	.
Psilurus incurvus	.	.	.	.	.		.	.	+	+	.	2	.	.				.	.	.	+	.	.	.	+	+	+	.	.	.
Trifolium glomeratum	1	+	.	.	3	2	1	.	.	.	.		.	.		.		.	+		.	.	.	.	.	.	.	.	.	.
Sherardia arvensis		.	.	.	.	.	.	.	.	1	.	.	.	.				+	+	+	+	.	.	.	.	.	.	.		.
Cerastium glomeratum		.	.	.	.	.	.	.	.	.	.		.					+	.	1	.	.			.	.	.		.	
Galium murale			.	.	+	+	+	+	+	1	.		.			+						.	.	.	.	.	.			
Romulea bulbocodium	.	.	.	.	.	.	.	.	.		.	.	.		.	.					.					.	.	.		.
Sagina apetala	+	.	.	.	.	.	.	.	+	.			.		.	.		+		.						.		.		
Sarcopoterium spinosum	.	.		.	.	.	.	.	+	.	.		.			.			+	+			+	.	+		+	+		
Medicago praecox	.	.	.	.	.			.		.		.	.	+		.										.	.	.	.	
Trifolium angustifolium	.	.	.	.	1		.	.			.	.	.					+			1	.	1	1		.	.		.	
Poa bulbosa	.	.	.	.	.			.		+	.									+			.	.			.		.	
Filago pyramidata	.	.	.		.	.		.																.		.	.		.	
Linaria pelisseriana	.	.	.		.	.										.				+	.								.	
Lotus conimbricensis	.	.	.	.	.				.	.			.	.							.	.		.		.	.			
Torilis nodosa	.	.	.	.		.	.			.	.			.		1		.			.	.				.	.		.	
Bupleurum gracile	.		.	.	.	.			.									.			.								.	
Stipa capensis	.	.	.		.	.	.		.	.	.	.	.													.	.		.	
Aizoon hispanicum	.	+	.			.		.	.			.	.		.	.					.	.				.	.	.	.	.
Reichardia picroides	.	.	.	.		.			.	.			.						.		.	.				.		.	.	

Tab. 1. – continued

Drainage ways

	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	AM	R
Relevé No.	75	91	88	78	17	13	81	76	10	15	14	9	20	12	11	90	87	80	79	134	85	82	144	16	89	131	7	132	18
Silene gallica	.	.	.	.	.	+	.	.	.	+	.	.	+	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.
Erodium cicutarium	.	.	.	.	.	.	.	+	+	+	+	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	+
Urospermum picroides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Oxalis pes-caprae	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium nigrescens	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phleum arenarium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Dactylis glomerata agg.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Anthoxanthum gracile	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	+	.	.
Lagoecia cuminoides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Anchusa officinalis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Fumana officinalis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Micromeria nervosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Crocus cartwrightianus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

	R	R	R	R	R	R	R	R	AM	R	R	A3	R	R	R	R	R	R	AM	A3	A3	A3	A3	A3	A3	A3	A3	A3	A3	A3
Relevé No.	138	133	136	135	137	143	142	141	148	8	139	48	140	83	46	84	86	103	100	43	160	161	165	166	162	163	164	107	105	111
Silene gallica	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Erodium cicutarium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Urospermum picroides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Oxalis pes-caprae	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium nigrescens	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phleum arenarium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Dactylis glomerata agg.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Anthoxanthum gracile	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lagoecia cuminoides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	1	.	.	.	+	.	.	.	.	.	.
Anchusa officinalis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Fumana officinalis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Micromeria nervosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Crocus cartwrightianus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Drainage ways

	A3	A3	A3	A3	A1	A3	A1	A3	AM	AM	A3	A3	A3	AM	AM	AM	AM	AM	AM	A3	A3	A1	R	A3	A2	A2	A2	A2
Relevé No.	109	106	114	51	41	108	36	112	104	101	44	45	113	95	31	94	93	32	102	159	50	38	124	47	127	125	129	128
Shrubs																												
Sarcopoterium spinosum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cistus incanus ssp. incanus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Helichrysum italicum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calicotome villosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cichorium spinosum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phagnalon graecum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Herbs																												
Trigonella monspelliaca	+	.	.	.	.	.	.	.	.	+	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Medicago orbicularis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

	A1	A1	A1	A2	A1	AM	AM	AM	AM	AM	R
Relevé No.	39	37	42	126	40	33	34	35	99	30	130
Shrubs											
Sarcopoterium spinosum	.	.	.	.	.	.	.	.	.	.	.
Cistus incanus ssp. incanus	.	.	.	.	.	.	.	.	.	.	.
Helichrysum italicum	.	.	.	.	.	.	.	.	.	.	.
Calicotome villosa	.	.	.	.	.	.	.	.	.	.	.
Cichorium spinosum	.	.	.	.	.	.	.	.	.	.	.
Phagnalon graecum	.	.	.	.	.	.	.	.	.	.	.
Herbs											
Trigonella monspelliaca	+	.	.	.	.	.	.	.	.	.	.
Medicago orbicularis	.	.	.	.	+	.	.	.	.	.	.

	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
Relevé No.	23	26	21	97	25	22	158	24	146	29	152	155	149	28	151	27	154	153	145	156	98	157	150	147	96	92
Shrubs																										
Sarcopoterium spinosum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cistus incanus ssp. incanus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Helichrysum italicum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calicotome villosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cichorium spinosum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phagnalon graecum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Herbs																										
Trigonella monspelliaca	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Medicago orbicularis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Tab. 1. – continued

Drainage ways

	A3	A3	A3	A3	A1	A3	A1	A3	AM	AM	A3	A3	A3	AM	AM	AM	AM	AM	AM	A3	A3	A1	R	A3	A2	A2	A2	A2
Relevé No.	109	106	114	51	41	108	36	112	104	101	44	45	113	95	31	94	93	32	102	159	150	38	124	47	127	125	129	128
Hymenocarpus circinnatus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.
Scorpiurus muricatus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ornithogalum narbonense	.	+	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium stellatum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.
Tordylium apulum	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vicia lathyroides	.	.	.	.	.	.	.	.	.	+	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Medicago disciformis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Briza maxima	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Urginea maritima	.	.	.	.	.	.	.	+	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hypochoeris achyrophorus	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cuscuta epithymium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ononis reclinata	+	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Medicago coronata	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lotus creticus	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.
Vicia villosa ssp. microphylla	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium arvense	.	.	.	.	.	+	.	.	.	.	+	.	.	.	.	+	.	.	+	.	.	.	.	.	.	.	.	.
Avena barbata	.	.	.	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Centaurea raphanina	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Leontodon tuberosum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Aetheorhiza bulbosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.
Papaver rhoeas	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.
Hypericum sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Carlina corymbosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Galium recurvum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Scandix australis	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rumex tuberosus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Biscutella didyma	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Bromus madritensis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.
Vulpia ciliata	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Plantago bellardii	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Polycarpon diphyllum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.

	A1	A1	A1	A2	A1	AM	AM	AM	AM	AM	R
Relevé No.	39	37	42	126	40	33	34	35	99	30	130
Hymenocarpus circinnatus	.	.	.	.	1	.	.	.	.	.	.
Scorpiurus muricatus	.	.	.	.	.	.	.	.	.	.	.
Ornithogalum narbonense	.	.	.	.	.	.	.	.	.	.	.
Trifolium stellatum	.	.	.	.	.	.	.	.	.	.	.
Tordylium apulum	.	.	.	.	.	.	+	+	.	+	.
Vicia lathyroides	.	.	.	+	+	.	.	.	.	.	.
Medicago disciformis	.	.	.	.	.	.	.	.	.	.	.
Briza maxima	.	.	.	.	.	.	.	.	.	.	.
Urginea maritima	.	.	.	.	.	.	.	.	.	.	.
Hypochoeris achyrophorus	.	.	.	.	.	.	.	.	.	.	.
Cuscuta epithymium	+	.	.	.	.	.	.	.	.	.	.
Ononis reclinata	.	.	.	.	.	.	.	.	.	.	.
Medicago coronata	.	.	.	.	.	.	.	.	.	.	.
Lotus creticus	.	.	+	+	.	.	+	+	.	.	2
Vicia villosa ssp. microphylla	.	.	.	.	.	.	.	.	.	.	.
Trifolium arvense	.	.	.	.	.	.	.	.	.	.	.
Avena barbata	+	.	.	.	.	.	.	.	.	.	.
Centaurea raphanina	.	.	.	.	.	.	.	.	.	.	.
Leontodon tuberosum	.	.	.	.	.	.	.	.	+	.	.
Aetheorhiza bulbosa	.	.	.	.	.	.	.	.	.	.	.
Papaver rhoeas	.	.	.	.	.	+	.	.	.	.	.
Hypericum sp.	.	.	.	.	.	.	.	.	.	.	.
Carlina corymbosa	.	.	.	.	.	.	.	.	.	.	.
Galium recurvum	.	.	.	.	.	.	.	.	.	.	.
Scandix australis	+	.	.	.	+	.	.	.	.	.	.
Rumex tuberosus	.	.	.	.	.	.	.	.	.	.	.
Biscutella didyma	.	.	.	.	.	+	.	.	.	.	1
Bromus madritensis	.	+	.	.	+	.	.	.	.	.	.
Vulpia ciliata	.	.	.	.	.	.	.	.	.	.	.
Plantago bellardii	+	1	+	.	.	.	.	.	.	.	.
Polycarpon diphyllum	.	.	.	.	.	.	.	.	.	.	.

	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
Relevé No.	23	26	21	97	25	22	158	24	146	29	152	155	149	28	151	27	154	153	145	156	98	157	150	147	96	92
Hymenocarpus circinnatus	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.
Scorpiurus muricatus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ornithogalum narbonense	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium stellatum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Tordylium apulum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vicia lathyroides	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Medicago disciformis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Briza maxima	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Urginea maritima	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hypochoeris achyrophorus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Cuscuta epithymium	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.
Ononis reclinata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Medicago coronata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lotus creticus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vicia villosa ssp. microphylla	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium arvense	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.
Avena barbata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Centaurea raphanina	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Leontodon tuberosum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Aetheorhiza bulbosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Papaver rhoeas	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hypericum sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Carlina corymbosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Galium recurvum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Scandix australis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rumex tuberosus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Biscutella didyma	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Bromus madritensis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vulpia ciliata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Plantago bellardii	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Polycarpon diphyllum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Tab. 1. – continued

	Drainage ways																																																															
	A3	A3	A3	A3	A1	A3	A1	A3	AM	AM	A3	A3	A3	AM	AM	AM	AM	AM	AM	A3	A3	A1	R	A3	A2	A2	A2	A2	A1	A1	A1	A2	A1	AM	AM	AM	AM	AM	R	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
Relevé No.	109	106	114	51	41	108	36	112	104	101	44	45	113	95	31	94	93	32	102	159	50	38	124	47	127	125	129	128	39	37	42	126	40	33	34	35	99	30	130	23	26	21	97	25	22	158	24	146	29	152	155	149	28	151	27	154	153	145	156	98	157	150	147	96	92
Silene colorata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	2	.	.	.	1	1	1	.	.	.	1	1	2	.	.	.	1	.	.	.
Rumex bucephalophorus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	+	.	+	.	.	.	.	.	+	.	1	.	.	.	.	.	.	.	1	+	1	1	2	.	.	.	.	.	.	.
Tolpis barbata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lophochloa cristata	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calendula arvensis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium tomentosum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hedypnois cretica	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lotus edulis	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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Sedum caespitosum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Valantia hispida	+	.	.	+	+	+	.	+	+	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	+	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ornithopus compressus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
Helichrysum italicum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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Euphorbia peplus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	1	+	+	.	1	.	.	1	+	.	+	.	.	.	.	.	+	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.
Papaver dubium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Gagea graeca	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Orchis papilionacea	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	1	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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Scirpus cernuus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	+	.	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Vulpia myuros	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Scirpus holoschoenus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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Verbascum phlomoides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Crassula tillaea	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	.	.	.	.	.	.	.	.	.	.	.	1	+	+	+	+	2	+	2	1	+	1	1	+	1	1	+	1	2	+	1	1	+	1	+	+	.
Trifolium subterranum	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	1	.	2	1	+	+	2	2	1	2	.	1	1	2	1	1	+	1	3	1	.	1	1	1	.	+	+	.
Ranunculus sardous	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	+	.	+	+	+	+	.	.	+	1	+	.	.	.	+	2	.	+	1	1	1	2	2	1	2	.	.	.	.	.	+	.	+	.	.	.	.	+	.	.	.	.	.
Tuberaria guttata	1	1	+	+	3	1	1	1	+	1	2	2	1	2	1	1	1	+	1	1	+	.	.	.	2	2	1	1	+	.	3	1	2	1	2	.	+	.	.	3	3	2	1	3	3	2		1	2	2	3	1	3	2	2	1	1	1	.	+	1	.	1	+	+
Logfia gallica	.		.	+	1	+	1	1	+	+	+	.	+	+	1	+	+	+	+	.	+	1	+	.	1	1	+	+	1	1	1	1	.	1	+	.	+	2	+	1	1	+	1	1	.	.	1	+	+	1	+	1	.	1	+	+	1	1	+	+	+	+	.	+	.
Asterolinon linum-stellatum	+	.	+	+	+	1	.	+	+	+	1	+	+	.		.	.	.	+	.	.	.	.	.	+	+	.	.	+	.	+	.	+	+	1	1	.	+		+	+	.	.	+	.	.	.	1	+	+	.	+	.	+	+	.		+	.	.	.	.	+	+	.
Anagallis foemina	+	+	+	.	1	1	.	+	+	+	+	.	+	.	.	1	.	.	.	+	+	.		.	+	+	1	.	1	.	+	1	1	1	+	.	+	1	+	.	.	.	.	.	+	.	+	1	+	1	1	1	2	.	.	+	.	.	.	+	1	1	+	+	.

Tab. 1. – continued

	Drainage ways																																																															
	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	3	3	3	3	1	3	1	3	M	M	3	3	3	M	M	M	M	M	M	3	3	1	R	3	2	2	2	2	1	1	1	2	1	M	M	M	M	M	R	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Relevé No.	109	106	114	51	41	108	36	112	104	101	44	45	113	95	31	94	93	32	102	159	50	38	124	47	127	125	129	128	39	37	42	126	40	33	34	35	99	30	130	23	26	21	97	25	22	158	24	146	29	152	155	149	28	151	27	154	153	145	156	98	157	150	147	96	92
Trifolium campestre	.	.	.	.	+	+	.	+	+	+	+	+	+	.	.	.	+	.	.	1	+	1	1	+	+	1	.	.	+	1	1	3	1	+	+	+	+	+	1	.	+	+	+	+	1	1	.	1	+	1	1	.	.	+	+	1	.	.	.	.	.	.	.	.	.
Aira caryophyllea	.	.	.	.	+	.	+	+	+	+	.	.	.	.	+	.	.	+	+	.	.	.	.	.	1	+	+	+	+	+	+	+	+	.	+	.	1	+	+	.	.	+	.	.	+	+	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.
Cistus incanus ssp. incanus	1	1	+	+	1	1	1	+	+	1	1	2	+	+	.	.	+	.	+	.	.	.	.	+	.	.	.	.	.	.	+	.	.	+	+	.	.	.	+	.	.	.	.	.	.	+	.	+	+	1	.	.	+	1	1	.	1	.	.	.	.	.	.	+	+
Arisarum vulgare	+	+	.	.	.	.	.	.	.	+	.	.	+	.	.	.	.	.	.	.	.	.	1	+	+	1	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	2	1	1	+	.	.	.	.	+	.	+	2	.	+	.	+	+	1	.	1	+	1
Asphodelus aestivus	.	.	.	.	.	+	.	+	+	.	1	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
Senecio gallicus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	+	.	.	.	+	.	1	+	+	+	.	.	+	.	+	+	+	.	.	.	.	+	+	1	.	1	.	.	+	.	.	.	.	.	.	.
Muscari comosum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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Petrorhagia prolifera	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	+	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Gynandriris sisyrinchium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.
Myosotis ramosissima	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	1	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Euphorbia exigua	.	.	.	.	.	.	+	.	+	.	.	.	.	.	+	+	.	.	+	.	.	.	.	.	+	+	.	.	+	+	+	.	+	2	.	.	.	+	+	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	+	.
Catapodium rigidum	.	.	.	.	.	.	.	+	+	.	.	.	.	.	+	.	.	.	+	+	.	.	.	.	.	.	.	.	+	.	.	.	.	+	.	.	+	+	1	.	.	.	.	.	.	.	+	.	+	.	.	+	+	.	.	.	+	.	.	.	.	.	.	.	.
Trifolium uniflorum	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	+	1	.	+	2	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium scabrum	.	+	.	+	.	.	.	.	+	.	.	+	.	.	+	.	+	.	.	.	.	.	+	.	.	.	.	+	+	.	1	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	1	.	.	.	.	.	+	.
Misopates orontium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Crepis multiflora	.	.	.	.	.	.	.	.	+	.	+	.	.	.	.	.	.	.	.	.	.	+	+	+	.	+	.	.	.	.	+	+	1	1	+	.	.	.	.	.	+	+	.	.	+	.	+	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Psilurus incurvus	+	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	.	+	.	.	+	+	.	.	+	.	.	.	+	.	1	.	.	.	.	.	+	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	+	.	.	+	+
Trifolium glomeratum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	+	.	.	1	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.
Sherardia arvensis	.	.	.	.	+	+	+	.	.	.	.	.	.	.	.	1	+	+	+	.	.	.	.	.	.	+	.	.	1	1	+	+	2	1	1	+	+	2	+	+	.	+	.	+	.	.	.	.	.	+	.	.	+	.	.	1	1	.	.	+	.	.	.	.	+
Cerastium glomeratum	.	.	.	.	.	.	.	.	.	.	1	.	.	+	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	1	1	+	+	.	+	.	+	1	+	.	.	+	+	+	.	+	+	.	+	.	1	+	.	1	1	+	+	.	+	.	.	.
Galium murale	.	.	.	.	+	.	.	.	.	.	.	.	+	+	1	.	.	.	.	.	+	.	1	.	1	1	.	.	+	+	+	+	+	1	+	.	.	+	.	.	+	+	.	+	+	+	+	+	+	+	.	.	+	+	.	+	.	+	.	.	.	.	.	.	.
Romulea bulbocodium	.	.	.	.	+	.	+	.	.	.	+	+	.	.	.	.	.	.	.	.	.	+	1	.	1	+	1	1	+	+	1	1	+	.	1	+	.	.	.	.	.	+	.	.	.	1	.	.	+	+	+	+	.	.	.	.	.	.	+	.	1	+	.	.	+
Sagina apetala	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	+	.	+	.	.	+	.	+	+	+	+	+	+	.	.	.	.	+	1	.	+	.	+	.	.	+	.	1	+	.	+	+	+	+	+	.	.	+	.	+	+	+	+	+	+	+
Sarcopoterium spinosum	+	.	.	+	+	.	+	.	.	.	.	.	.	1	+	.	.	.	+	.	.	+	+	.	.	.	.	.	.	+	+	+	+	.	.	.	+	.	+	+	+	.	.	.	.	+	+	.	.	1	.	1	.	.	+	+	+	+	.	.	.	.	1	+	+
Medicago praecox	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	+	.	1	+	+	.	.	.	+	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium angustifolium	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	+	1	2	+	.	.	+	.	.	.	.	.	+	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Poa bulbosa	.	.	.	.	+	1	1	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	+	1	.	+	+	+	.	.	.	.	.	.	+	.	.	.	.	.	.	.	+	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	1	.	.	.
Filago pyramidata	.	.	.	.	+	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Linaria pelisseriana	+	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	+	.	+	.	+	.	.	.	+	.	.	.	+	+	.	.	.	.	.	.	.	+	.	+	.	.	.	.	.	.	+	.	.	.	.	.	.	.	+	+	.	.	+	.	.	.	.
Lotus conimbricensis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	+	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Tab. 1. – continued

Drainage ways

	A3	A3	A3	A3	A1	A3	A1	A3	AM	AM	A3	A3	A3	AM	AM	AM	AM	AM	AM	A3	A3	A1	R	A3	A2	A2	A2	A2
Relevé No.	109	106	114	51	41	108	36	112	104	101	44	45	113	95	31	94	93	32	102	159	50	38	124	47	127	125	129	128
Torilis nodosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Bupleurum gracile	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Stipa capensis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Aizoon hispanicum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Reichardia picroides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Silene gallica	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Erodium cicutarium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Urospermum picroides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Oxalis pes-caprae	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium nigrescens	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phleum arenarium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Dactylis glomerata agg.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	+	.	.	+	.	.
Anthoxanthum gracile	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lagoecia cuminoides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Anchusa officinalis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Fumana officinalis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Micromeria nervosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Crocus cartwrightianus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.

	A1	A1	A1	A2	A1	AM	AM	AM	AM	AM	R
Relevé No.	39	37	42	126	40	33	34	35	99	30	130
Torilis nodosa	.	.	.	.	.	.	.	.	.	.	.
Bupleurum gracile	.	.	.	.	.	.	.	.	.	.	.
Stipa capensis	.	.	.	.	.	.	.	.	.	.	.
Aizoon hispanicum	.	.	.	.	.	.	.	.	.	.	.
Reichardia picroides	.	.	.	.	.	.	.	.	.	.	.
Silene gallica	.	.	.	.	.	.	.	.	.	.	.
Erodium cicutarium	.	.	.	.	.	.	.	+	.	.	.
Urospermum picroides	.	.	.	.	.	.	.	.	.	.	.
Oxalis pes-caprae	.	.	.	.	.	.	.	.	.	.	.
Trifolium nigrescens	.	.	.	.	.	.	.	.	.	.	.
Phleum arenarium	.	.	.	.	.	.	.	.	.	.	.
Dactylis glomerata agg.	.	.	.	.	.	.	.	.	.	.	.
Anthoxanthum gracile	.	.	.	.	.	.	.	.	.	.	.
Lagoecia cuminoides	.	.	.	.	.	+	.	.	.	.	.
Anchusa officinalis	.	.	.	.	.	.	.	.	.	.	.
Fumana officinalis	.	.	.	.	.	.	.	.	.	.	.
Micromeria nervosa	.	.	.	.	.	.	.	.	.	.	.
Crocus cartwrightianus	.	.	.	.	.	.	+	.	+	+	.

	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
Relevé No.	23	26	21	97	25	22	158	24	146	29	152	155	149	28	151	27	154	153	145	156	98	157	150	147	96	92
Torilis nodosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Bupleurum gracile	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Stipa capensis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Aizoon hispanicum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Reichardia picroides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Silene gallica	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Erodium cicutarium	.	.	.	+	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Urospermum picroides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Oxalis pes-caprae	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium nigrescens	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phleum arenarium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Dactylis glomerata agg.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Anthoxanthum gracile	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lagoecia cuminoides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Anchusa officinalis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Fumana officinalis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Micromeria nervosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Crocus cartwrightianus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Additional species list, table 1:

Andropogon distachyon: 417(+), *Anthemis chia*: 325(+), 329(+), *Anthemis rigida*: 325(+), 366(+), 329(+), 397(+), 313(+). *Biserrula pelecinus*: 18(+), 325(+), 366(+), 396(+), 397(+), *Brachypodium distachyon*: 127(+), *Brassica nigra*: 329(+), *Bromus molliformis*: 325(+), 410(+), 312(+), *Calicotome villosa*: 391(+), 331(+), 109(+), *Capsella bursa-pastoris*: 419(+), *Carex arenaria*: 421(+), *Cichorium spinosum*: 333(+, 374(+), 419(+), *Convolvulus althaeoides*: 329(+), *Crucianella latifolia*: 425(+), *Cyperus esculentus*: 381(2), *Daucus involucrata*: 424(+), *Echium plantagineum*: 350(+), *Eryngium campestre*: 333(+), 329(+), *Erysimum graecum*: 374(+), *Evax pygmea*: 332(+), 409(+), *Fumana arabica*: 372(+), *Galium spurium*: 425 (1), *Geranium molle agg.*: 419(+), 125(+), *Holcus setiglumis*: 332(+), *Hordeum bulbosum*. 329(+), *Hymenonema graecum*: 329(+), *Hyparrhenia hirta*: 391(+), *Hypochoeris radicata*: 425(+), *Juncus bufonius*: 363(+), 331(+), *Lamarckia aurea*: 329(+), *Lamium amplexicaule*: 405(+), 420(+), 361(+), 406(+), 140(+), 92(+), *Lathyrus clymenum*: 391(+), 351(+), 349(+), 393(+), 352(+), 34(+). *Lathyrus inconspicuus*: 310(+), *Lathyrus sphaericus*: 392(+), 395(+), 362(+), *Legousia hybrida*: 113(+), *Lolium perenne*: 7(+), 131(1), *Melica minuta*: 309(+), 308(+), 392(+), 310(+), 372(+), *Mercurialis annua*: 308(+), *Neatostema apulum*: 396(+), *Nigella damascaena*: 397(+), *Ornithogalum fimbriatum*: 392(+), 349(+), 350(+), 394(+), 354(+), *Orobanche* sp.: 333(+), 332(+), 418(1), 419(+), *Phagnalon graecum*, seedl.: 373(+), *Picris pauciflora*: 308(+), *Plantago coronopus*: 353(1), 329(+), 376(+), 10(+), 131(+), 130(+), *Plantago lagopus*: 329(+), *Prasium majus*: 349(+), *Ranunculus bulbosus*: 407(+), 406(+), *Rumex pulcher*: 329(+), *Seliginella denticulata*: 43(+), 160(+), 113(+), 159(+), 125(+), 127(+), *Silene vulgaris*: 325(+), 418(+), *Spergula arvensis*: 417(+), 145(+), 153(+), *Spergularia rubra*: 24(+), *Stellaria media*: 79(1), 349(+), 352(+), 396(1), 397(+), 419(+), *Taraxacum megalorrhizon*: 41(+), *Tragopogon porifolius*: 333(+), *Trifolium cherleri*: 406(+), *Trifolium fragiferum*: 349(+), 350(+), *Trifolium spumosum*: 352(+), *Trifolium suffocatum*: 308(+), *Trigonella corniculata*: 325(+), 361(+), 313(+), *Valerianella discoidea*: 43(+), 397(+), 409(+), *Vicia hybrida*: 311(+), 309(+), 392(+), 310(+), 395(+), 407(1), 406(+), 144(+), 18(1), 43 (+), 106(+), *Vicia peregrina*: 407(+), 419(+), 362(+), 20(+), 42(+), *Vicia sativa*: 307(+), 312(+).

from drainage courses. 22.8% of the species recorded are more common in the surrounding vegetation. Over one third (36.6%) of the species occur with comparable constancy in both the drainage courses and the surrounding vegetation. A few species (5.4%) grow only in the drainage ways. In the erosion rills dwarf shrubs, such as *Sarcopoterium spinosum* and *Cistus incanus subsp. incanus,* were found only as seedlings. The geophytes *Asphodelus aestivus, Urginea maritima* and *Gynandriris sisyrinchium* grow in the drainage courses but clearly prefer the surrounding vegetation.

Vegetation of the drainage courses is dominated by therophytes such as *Logfia gallica, Asterolinum stellatum, Anagallis foemina* and *Trifolium campestre*. Study areas differ clearly in their species compositions (Tab. 1): At the Radar Station *Tuberaria guttata* is scarce; whereas the drainage course in Ano Mera is characterized by the occurrence of *Crassula tillaea* and *Trifolium subterraneum*.

CCA analysis showed that only 2.2% of the species variance could be explained by the environmental factors of denudation, deposition, grain size, inclination and micro-relief. The ratio between explained species variation of DCA and CCA is 25, environmental factors thus being able to explain only a small amount of the species variation. DCA analysis showed distinctions between the study areas. The correlation between the ordination axes and the environmental factors is rather low (Fig. 2).

Where denudation processes prevail, study sites have significantly less plant cover, species ($p < 0.001$) and smaller soil grain size (only $p < 0.065$) than sites, where deposition processes prevail (Tab. 2).

Tab. 2. Average grain size, species number and plant cover of sites with prevailing erosion or deposition within the erosion rills, together with the significant differences between the sites.

		number of relevés	mean	95% confidence	skewness	p
Vegetation cover	erosion	54	15.5	11.5 – 19.5	2.0	
	deposition	65	46.7	39.9 – 53.6	–0.1	<0.001
Grain size	erosion	54	15.1	11.4 – 18.7	1.4	
	deposition	65	22.2	15.3 – 29.1	4.6	0.065
Species number	erosion	54	17.9	16.0 – 19.8	1.0	
	deposition	65	12.6	10.9 – 14.3	0.9	<0.001

The drainage course at Ano Mera is typical of those found on Mykonos (Fig. 3). It starts on an upper slope underneath a drain pipe of a partly ruined stonewall. The A soil horizon has more or less vanished and only the C-horizon or the parent rock remains. Dwarf shrubs of the surrounding vegetation cover 75% of the soil surface. In the rill, the erosion process is correlated to slope inclination and distance between shrubs. Deposition occurs on shallow slopes or above shrubs and rock fragments, whereas denudation prevails on steep slopes and below the dwarf shrubs. *Tuberaria guttata, Logfia gallica* and *Cerastium glomeratum* occur over the entire drainage course. Where the stone layer is shallow and consists of debris with a maximum average grain size of 3 mm, sites are

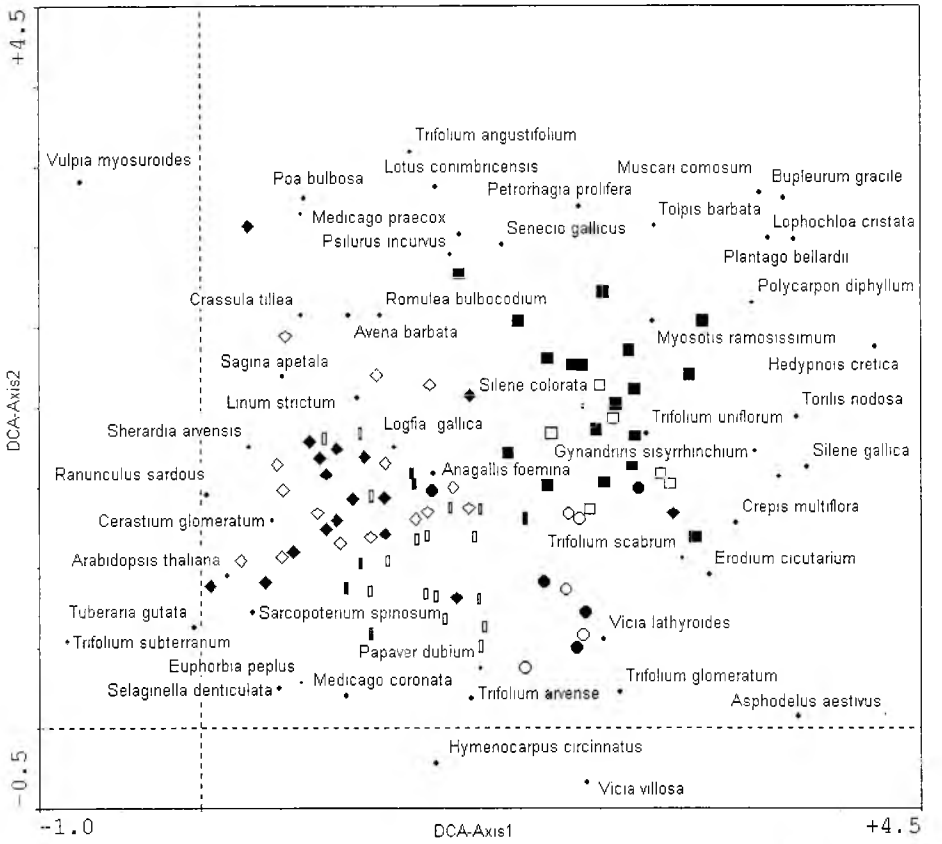


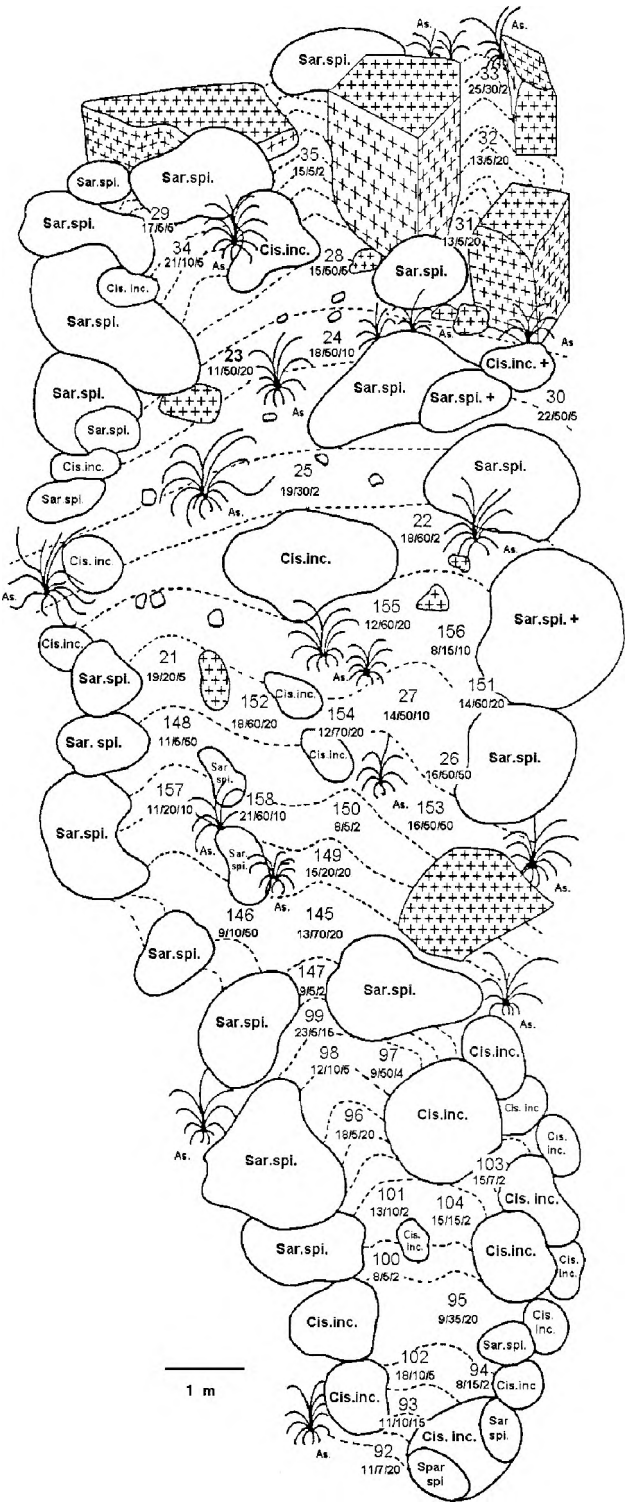
Fig. 2. Ordination of erosion rill samples and their species by DCA analysis. λ_1= 0.456, λ_2=0.286. The cumulative percentage variance for axis 1 and 2: 13.7%. The rank correlation coefficient of environmental factors (not represented in the diagram) with axis 1: grain size 0.1068, denudation –.0856, deposition 0.856, plant cover 0.539, micro-relief < 0.156. The rank correlation coefficient of the environmental factors with axis 2: grain size 0.222, denudation 0.0165, deposition –0.0165, plant cover –0.0758, micro-relief < 0.159.

Anomera: ◆ samples with prevailing accumulation, ◇ denudation, Agia Anna III: ▮ accumulation, ▯ denudation, Agia Anna I + II: ● accumulation, ○ denudation, Radar Station: ■ accumulation, □ denutation.

characterized by the occurrence of *Aira caryophyllea*. Where the stony layer is up to 5 cm deep and consists of debris with a maximum average grain size of 1.5–2 cm, sites are colonized by *Crasulla tillaea*, *Trifolium subterraneum,* and *Ranunculus sardous*.

Discussion

The typical phrygana vegetation of the study areas is the *Trigonella monspelliaca –Sarcopoterium spinosum* community. On Mykonos this vegetation


Sar.spi.
Cis.inc.
Cis.inc. +
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1 m

type differs from other *Sarcopoterium spinosum* communities (KNAPP 1965, HEISELMAYER and PILSL 1983, BÖHLING and GEROLD 1995) by the absence of *Coridothymus capitatus* and the frequent occurrence of *Trigonella monspelliaca*. The *Tuberarietum guttatae* corresponds well to the descriptions of BRAUN-BLANQUET (1931).

Cluster analysis showed that drainage course vegetation could be distinguished clearly from the surrounding vegetation by the absence of established dwarf shrubs. In the erosion rills, *Sarcopoterium spinosum* and *Cistus incanus subsp. incanus*, which are known for their effective sexual reproduction (TRABAUD and DE CHANTERAC 1975, ARIANOUTSOU-FARAGGITAKI 1984) were found only as seedlings. Additionally, a number of species occurring in the surrounding phrygana vegetation are less frequent or absent in the erosion rills. This may be explained by the very different sample size used in both locations.

Species composition of the drainage courses shows little variation. Differences can be seen between the investigated erosion rills but not between sites of different erosion processes (denudation or accumulation) within one rill. Differences between erosion rills can be explained by the slightly different nature of each rill and its surrounding vegetation. Vegetation surrounding erosion rills near Agia Anna is dominated by *Tuberarietum guttatae*. Here, the stone layer is course with an average grain size of about 2 cm. Rills near Ano Mera and the Radar Station are dominated by the *Trigonella monspelliaca–Sarcopoterium spinosum* community. In these rills, the stone layer is rich in grains with an average size of less than 2 mm.

Most species occurring in the erosion rills are therophytes. Their seeds germinate after the first major autumn rains. Plants show vegetative growth in winter and flower in spring, as studies of FIGUEROA and DAVY (1991) have shown. The low perennial/annual ratio of standing vegetation predicts a high similarity between the autumn seed bank and the standing vegetation (PECO et. al 1998.).

Runoff very strongly influences species distribution and vegetation within an erosion rill. Diaspores are washed down the slopes and accumulate in depressions or in the shelter of shrubs, rocks or the geophyte *Asphodelus aestivus*. This causes greater plant cover and higher species number in these areas (DIECKMANN et al. 1985, TROUMIS and TRABAUD 1987). *Asphodelus aestivus* and *Romulea bulbocodium* are the only geophytes that grow frequently in the erosion rills. *Urginea maritima* was observed growing only in the shelter of rocks while *Gynandriris sisyrinchium* and *Muscari comosum* occurred very rarely. *Aspho-*

Fig. 3. Relevés in the drainage course near Ano Mero (Mykonos). The drainage course is 10m long and 1.5 m broad. 156: relevé number, 8/15/10: 8= number of species, 15= plant cover in %, 10: max. average grain size. +++ Rock fragments, As.: *Asphodelus aestivus*, Sar.spi.: *Sarcopoterium spinosum*, Sar.spi.+: *Sarcopoterium spinosum*, dead. Cis. inc.= *Cistus incanus* subsp. *incanus*, Cis. inc. +: *Cistus incanus* subsp. *incanus*, dead. Sites with dominating denudation: 21, 27, 28, 29, 31, 34, 35, 92, 93, 94, 96, 98, 99, 100, 103, 147, 148, 149, 150, 156, 157. Sites with dominating accumulation: 22, 23, 24, 25, 26, 30, 33, 97, 101, 102, 145, 146, 151, 152, 153, 154, 155, 158.

delus aestivus retains soil material with its branched rhizome the same way as they do rock fragments (BERAEL et al. 1995) and *Sarcopoterium spinosum* shrubs accumulate debris and fine material and thus retard soil erosion (STOCKER 1995). These locations can be seen as initial sites for recolonization. Although DIECKMAN et al. (1985) discovered that a vegetation cover of 30% can reduce soil erosion as much as 90% the main function of the therophytes may be the preparation of organic material and creation of safe sites for the establishment of dwarf shrubs.

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