

# SUPPLEMENTAL MATERIAL 1: FLORISTIC RELEVÉS AND VASCULAR CHECKLIST OF THE LIGURIAN 4090 HABITAT

## BRYOPHYTES IN LIGURIAN 4090 HABITAT: ENDEMIC ORO-MEDITERRANEAN HEATHS WITH GORSE (*GENISTA DESOLEANA*)

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Floristic relevés performed in three sites of Ligurian *Genista desoleana* hedgehog-heaths are here presented. Coverage values of vascular taxa were assigned as multiples of 5, with the exception of the 1% value; in case of coverages less than 1%, we used the "+" symbol. Coverage values of bryophytic taxa (*Supplemental Material 3*) were calculated using the following formula:  $C = (N_i/N_{tot}) \times 100$  where  $N_i$  is the number of the occurrences of the species, and  $N_{tot}$  is the total number of occurrences of all the Bryophytes; then, we calculated the coverage value corresponding to each species contribution compared to the total coverage of the bryophytic layer.

Moreover, we provide the list of the vascular plants found in the three sites and their main ecological features. The nomenclature of taxa follows Bartolucci et al. (2018a, b, c, 2019a, b, 2020a, b) and Aleffi et al. (2020). Life form classification follows Raunkiær (1934): T scap = scapose therophytes, T par = parasitic therophytes, G bulb = bulbous geophytes, H bienn = biennial hemicryptophytes, H scap = scapose hemicryptophytes, H caesp = caespitose hemicryptophytes, Ch suffr = suffruticose chamaephytes, Ch frut = fruticose chamaephytes, NP = nanophanerophytes, P caesp = caespitose phanerophytes. The categories of humidity, temperature and light (i.e., Ucat, Tcat and Lcat, respectively) are estimated according to the Ellenberg indexes, obtained from Pignatti et al. (2017-2019), using the following thresholds: Ucat: 1-6 = dry, 7-12 = humid; Tcat: 1-6 = cryophytic, 7-12 = thermophytic; Lcat: 1-6 = shaded, 7-12 = illuminated. Life strategies are identified according to Grime (1977): S = Stress-tolerant, R = Ruderal, C = Competitive.

Site 1: Masso (Castiglione Chiavarese), 44.270109; 9.492761. Site 2: Monte Croce dei Tozzi, W side (Casarza Ligure), 44.263086; 9.467245. Site 3: Monte Croce dei Tozzi, W side (Casarza Ligure), 44.263400; 9.474050. Coordinates are expressed in WGS84 EPSG:4326.

SITE 1				
<b>Performed by:</b>	Turcato C., Dagnino D.			
<b>Date:</b>	24/04/2020			
<b>Exposure</b>	SE			
<b>Altitude (meters a.s.l.)</b>	295			
<b>Acclivity (°):</b>	15			
<b>Vegetation type</b>	<i>Genista desoleana</i> hedgehog-heath			
<b>Height of tree vegetation (m):</b>	-	<b>Overall coverage (%):</b>	40	
<b>Height of shrub vegetation (m):</b>	0,3	<b>Tree coverage (%):</b>	-	
<b>Height of herbaceous vegetation (cm):</b>	20	<b>Shrub coverage (%):</b>	30	
<b>Height of muscinal vegetation (cm):</b>	1	<b>Grass coverage (%):</b>	10	
<b>Sampled area (mq):</b>	5x5	<b>Moss coverage (%):</b>	1	
<b>Rocks (%):</b>	-	<b>Stones (%):</b>	80	
Species	Coverage (%)			
	bryophytic	herbaceous	shrubby	arboreal
<i>Genista desoleana</i> Vals.			30	
<i>Cerastium ligusticum</i> Viv.		5		
<i>Jasione montana</i> L.		1		
<i>Agrostis castellana</i> Boiss. & Reut.		5		
<i>Rumex acetosella</i> L.		1		
<i>Saponaria ocymoides</i> L. subsp. <i>ocymoides</i>		+		
<i>Bryum</i> sp.	0,4			
<i>Hypnum cupressiforme</i> Hedw. var. <i>cupressiforme</i>	0,27			
<i>Cephaloziella divaricata</i> (Sm.) Schiffn. var. <i>divaricata</i>	0,27			
<i>Dicranum scoparium</i> Hedw.	0,06			

SITE 2				
<b>Performed by:</b>	Turcato C., Dagnino D.			
<b>Date:</b>	24/04/2020			
<b>Exposure</b>	SO			
<b>Altitude (meters a.s.l.)</b>	224			
<b>Acclivity (°):</b>	40			
<b>Vegetation type</b>	<i>Genista desoleana</i> hedgehog-heath			
<b>Height of tree vegetation (m):</b>	-	<b>Overall coverage (%):</b>	30	
<b>Height of shrub vegetation (m):</b>	0,4	<b>Tree coverage (%):</b>	-	
<b>Height of herbaceous vegetation (cm):</b>	30	<b>Shrub coverage (%):</b>	30	
<b>Height of muscinal vegetation (cm):</b>	0,5	<b>Grass coverage (%):</b>	1	
<b>Sampled area (mq):</b>	5x5	<b>Moss coverage (%):</b>	1	
<b>Rocks (%):</b>	30	<b>Stones (%):</b>	60	
Species	Coverage (%)			
	bryophytic	herbaceous	shrubby	arboreal
<i>Genista desoleana</i> Vals.			25	
<i>Thymus vulgaris</i> L. subsp. <i>vulgaris</i>			5	
<i>Peucedanum officinale</i> L.		+		
<i>Dianthus sylvestris</i> Wulfen		+		
<i>Festuca</i> sp.		1		
<i>Teucrium montanum</i> L.			1	
<i>Trinia glauca</i> (L.) Dumort.		+		
<i>Buxus sempervirens</i> L.			+	
<i>Dittrichia viscosa</i> (L.) Greuter subsp. <i>viscosa</i>		+		
<i>Juniperus oxycedrus</i> L.			+	
<i>Euphorbia spinosa</i> L.			1	
<i>Asperula</i> sp.		+		
<i>Weissia controversa</i> Hedw. var. <i>controversa</i>	0,917			
<i>Grimmia trichophylla</i> Grev.	0,083			

SITE 3				
Performed by:	Turcato C., Dagnino D.			
Date:	24/04/2020			
Exposure	SO			
Altitude (meters a.s.l.)	301			
Acclivity (°):	40			
Vegetation type	<i>Genista desoleana</i> hedgehog-heath			
Height of tree vegetation (m):	-	Overall coverage (%):	30	
Height of shrub vegetation (m):	0,4	Tree coverage (%):	-	
Height of herbaceous vegetation (cm):	50	Shrub coverage (%):	25	
Height of muscinal vegetation (cm):	0,5	Grass coverage (%):	5	
Sampled area (mq):	5x5	Moss coverage (%):	1	
Rocks (%):	30	Stones (%):	60	
Species	Coverage (%)			
	bryophytic	herbaceous	shrubby	arboreal
<i>Genista desoleana</i> Vals.			20	
<i>Euphorbia spinosa</i> L.			5	
<i>Thymus vulgaris</i> L. subsp. <i>vulgaris</i>			1	
<i>Satureja montana</i> L. subsp. <i>montana</i>			5	
<i>Centaurea aplolepa</i> Moretti subsp. <i>lunensis</i> (Fiori) Dostál		1		
<i>Linum trigynum</i> L.		+		
<i>Cuscuta</i> sp.		+		
<i>Festuca</i> sp.		5		
<i>Iberis umbellata</i> L.		+		
<i>Dianthus sylvestris</i> Wulfen		1		
<i>Teucrium montanum</i> L.			1	
<i>Dittrichia viscosa</i> (L.) Greuter subsp. <i>viscosa</i>		+		
<i>Reichardia picroides</i> (L.) Roth		+		
<i>Asperula</i> sp.		+		
Liliacea		+		
Brassicacea		+		
<i>Weissia controversa</i> Hedw. var. <i>controversa</i>	0,75			
<i>Grimmia trichophylla</i> Grev.	0,125			
<i>Fissidens dubius</i> P.Beauv. var. <i>dubius</i>	0,125			

Taxon	Site 1	Site 2	Site 3	Life-form	Ucat	Tcat	Lcat	Life strategy
<i>Genista desoleana</i> Vals.	x	x	x	NP	dry	thermophytic	illuminated	S
<i>Festuca</i> sp.		x	x	H caesp	/	/	/	/
<i>Cuscuta</i> sp.			x	T par	/	/	/	R
Liliacea			x	G bulb	/	/	/	/
Brassicacea			x	/	/	/	/	/
<i>Cerastium ligusticum</i> Viv.	x			T scap	dry	thermophytic	illuminated	R
<i>Dittrichia viscosa</i> (L.) Greuter subsp. <i>viscosa</i>		x	x	H scap	dry	thermophytic	illuminated	R
<i>Iberis umbellata</i> L.			x	T scap	dry	thermophytic	illuminated	R
<i>Euphorbia spinosa</i> L.		x	x	Ch suffr	dry	cryophytic	illuminated	S
<i>Linum trigynum</i> L.			x	T scap	dry	thermophytic	illuminated	R
<i>Trinia glauca</i> (L.) Dumort.		x		H scap	dry	thermophytic	illuminated	S
<i>Juniperus oxycedrus</i> L.		x		P caesp	dry	thermophytic	illuminated	S-C
<i>Thymus vulgaris</i> L. subsp. <i>vulgaris</i>		x	x	Ch frut	dry	thermophytic	illuminated	S-C
<i>Dianthus sylvestris</i> Wulfen		x	x	H scap	dry	thermophytic	illuminated	S
<i>Teucrium montanum</i> L.		x	x	Ch suffr	dry	thermophytic	illuminated	S
<i>Agrostis castellana</i> Boiss. & Reut.	x			H caesp	dry	cryophytic	illuminated	C
<i>Satureja montana</i> L. subsp. <i>montana</i>			x	Ch suffr	dry	cryophytic	illuminated	S
<i>Rumex acetosella</i> L.	x			H scap	dry	cryophytic	illuminated	C
<i>Jasione montana</i> L.	x			H bienn	dry	thermophytic	illuminated	R
<i>Centaurea aplolepa</i> Moretti subsp. <i>lunensis</i> (Fiori) Dostál			x	H scap	dry	thermophytic	illuminated	S
<i>Reichardia picroides</i> (L.) Roth			x	H scap	dry	thermophytic	illuminated	S
<i>Asperula</i> cfr. <i>cynanchica</i> L. subsp. <i>cynanchica</i>		x	x	H scap	dry	thermophytic	illuminated	S
<i>Peucedanum officinale</i> L.		x		H scap	dry	cryophytic	illuminated	C-S
<i>Saponaria ocymoides</i> L. subsp. <i>ocymoides</i>	x			H scap	dry	cryophytic	illuminated	C-S
<i>Buxus sempervirens</i> L.		x		NP	dry	thermophytic	shaded	S-C

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