MC4
Brassica oleracea maritime cliff-ledge community

Synonymy
Includes *Brassicetum oleraceae* Géhu 1962.

Constant species
Festuca rubra, *Brassica oleracea*, *Dactylis glomerata*, *Daucus carota* ssp. *gummifer.*

Rare species
Brassica oleracea, *Ophrys sphegodes*, *Silene nutans.*

Physiognomy
The *Brassica oleracea* community generally has an irregular grassy cover of *Festuca rubra* and some *Dactylis glomerata* with prominent erect or decumbent plants of *B. oleracea* and a little *Daucus carota* spp. *gummifer. Plantago lanceolata* is the most frequent associate throughout, but it is never abundant. *Cheiranthus cheiri* and *Sonchus oleraceus*, though infrequent, may be conspicuous when flowering.

Sub-communities

***Beta vulgaris* ssp. *maritima* sub-community:** *Brassicetum oleraceae* Géhu 1962. *B. oleracea* is more abundant in this species-poor sub-community and *Beta vulgaris* ssp. *maritima* is an additional constant which may be co-dominant with *B. oleracea* and *Festuca rubra*. Maritime species, such as *Armeria maritima*, *Silene vulgaris* ssp. *maritima* and *Bromus hordeaceus* ssp. *ferronii* are confined to this sub-community though none is ever abundant.

***Ononis repens* sub-community.** Additional constants here are *O. repens*, *Silene nutans*, *Centaurea scabiosa* and *Rumex acetosa. B. oleracea* is less abundant here than in the *Beta* sub-community. Also frequent are *Brachypodium pinnatum* (which often co-dominates with *F. rubra*), *Hieracium pilosella* and *Teucrium scorodonia* and among the occasional species are some characteristic of calcicolous grasslands including *Ophyrs sphegodes* (Summerhayes 1968).

Habitat
The community is most characteristic of the crumbling edges and sloping ledges of south-facing cliffs in calcareous rocks. Soils are rendziniform, usually very shallow and dry, often fragmentary and maintained in a state of immaturity by substrate instability. Mitchell & Richards (1979) have suggested that *B. oleracea* is associated with phosphate-rich soil systems and that its distribution may be partly related to manurial enrichment by sea-birds.

The community occurs from the splash-zone to cliff-tops but, though it is more generally characteristic of sheltered coasts, the *Beta* sub-community seems to favour more maritime conditions.

Zonation and succession
The *Brassica* community can constitute the most maritime vegetation on relatively sheltered, dry calcareous cliffs though it occurs occasionally above a zone of *Crithmo-Spergularietum*. Inland it passes to the *Festuca-Armeria* or *Festuca-Daucus* maritime grasslands or to non-maritime calcareous grasslands or *Ligusticum* scrub.

Distribution
Samples were available only from the south coast of England and further investigation is needed to identify the floristic context of *B. oleracea* in its more northern stations (Mitchell 1976, Mitchell & Richards 1979).

Affinities
The *Beta* sub-community is virtually identical with the *Brassicetum oleraceae* described by Géhu (1962) from the French Channel coast and placed with other splash-zone communities in the Crithmo-Limonietea. The *Ononis* sub-community can be seen as a transition to Mesobromion calcareous grasslands and it may be peculiar to Britain.

Floristic table MC4

	a	b	4
Festuca rubra	V (3–9)	IV (2–8)	V (2–9)
Brassica oleracea	V (3–6)	V (2–4)	V (2–6)
Dactylis glomerata	IV (2–4)	V (3–4)	IV (2–4)
Daucus carota gummifer	V (2–3)	V (2–4)	V (2–4)
Beta vulgaris maritima	IV (3–7)		II (3–7)
Armeria maritima	III (2–4)		II (2–4)
Galium aparine	III (3–4)		II (3–4)
Potentilla reptans	II (4)		I (4)
Brassica nigra	II (4)		I (4)
Bromus hordeaceus ferronii	II (1–3)		I (1–3)
Sedum acre	II (1–2)		I (1–2)
Senecio vulgaris	II (2–3)		I (2–3)
Cirsium arvense	II (2–4)		I (2–4)
Silene vulgaris maritima	II (1)		I (1)
Ononis repens	I (2)	V (2–4)	III (2–4)
Silene nutans		IV (2–5)	III (2–5)
Centaurea scabiosa		IV (2–3)	II (2–3)
Rumex acetosa		IV (2–3)	II (2–3)
Brachypodium pinnatum		III (3–9)	II (3–9)
Hieracium pilosella		III (3–5)	II (3–5)
Teucrium scorodonia		III (3–4)	II (3–4)
Centaurea nigra		II (2–4)	II (2–4)
Festuca arundinacea		II (1–5)	II (1–5)
Senecio jacobaea		II (1–2)	II (1–2)
Echium vulgare	I (1)	II (1–2)	II (1–2)
Agrostis stolonifera		II (3–6)	I (3–6)
Anthyllis vulneraria		II (2–3)	I (2–3)
Taraxacum sp.		II (2–3)	I (2–3)
Tragopogon pratensis		II (2)	I (2)
Plantago lanceolata	II (2–3)	III (1–3)	III (1–3)
Sonchus oleraceus	II (2–4)	II (1–2)	II (1–4)
Cheiranthus cheiri	I (1)	II (1–4)	II (1–4)
Leucanthemum vulgare	I (2)	II (3)	II (2–3)
Plantago coronopus	II (1–3)	I (2)	II (1–3)
Number of samples	8	10	18
Number of species/sample	10 (6–12)	16 (10–28)	13 (6–28)
Vegetation height (cm)	52 (15–80)	19 (10–50)	34 (10–80)
Total vegetation cover (%)	86 (20–100)	88 (50–100)	87 (20–100)
Altitude (m)	23 (3–40)	23 (4–65)	23 (3–65)
Slope (°)	26 (0–80)	33 (10–60)	29 (0–80)

a *Beta vulgaris* ssp. *maritima* sub-community
b *Ononis repens* sub-community
4 *Brassica oleracea* maritime cliff-ledge community (total)

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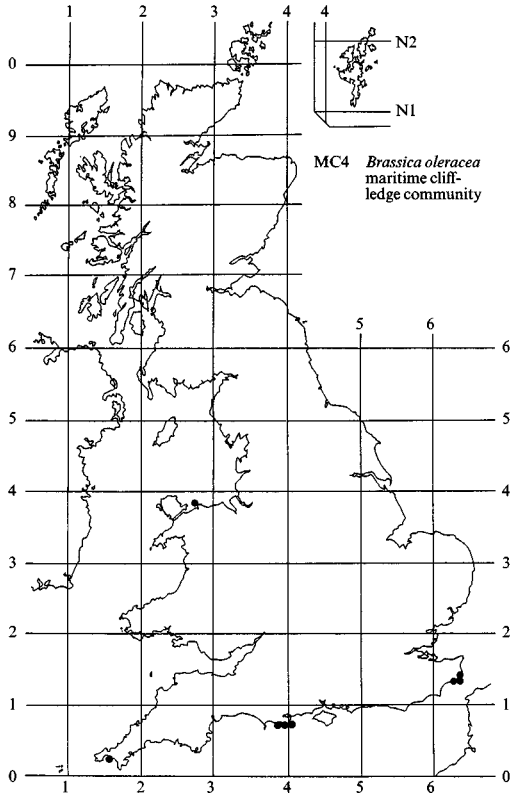

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