

*Allium schoenoprasum*-*Plantago maritima* community**Synonymy**

*Allium schoenoprasum*-*Plantago maritima* community  
Hopkins 1983

**Constant species**

*Allium schoenoprasum*, *Festuca ovina*, *Plantago maritima*, *Scilla verna*.

**Rare species**

*Allium schoenoprasum*, *Isoetes hystrix*, *Juncus capitatus*, *Scilla autumnalis*, *S. verna*.

**Physiognomy**

The *Allium schoenoprasum*-*Plantago maritima* community comprises usually sparsely scattered individuals of perennial and ephemeral plants occurring as diverse mixtures in very small stands, often less than 1 m<sup>2</sup> in extent, and with a marked annual pattern of growth. Most of the species are perennial, though few of these are constant or of consistently high cover. However, after the damper weather of winter and with the flushing that is a characteristic feature of the habitat of this vegetation, the scattered usually diminutive tussocks of *Festuca ovina* and *Armeria maritima* and the rosettes of *Plantago maritima* show a flush of green growth in spring and are joined by the emerging shoots of *Scilla verna* and *Allium schoenoprasum*. Twisting leaves of the latter are especially distinctive in the sward and the species is often the most abundant plant with cover values exceeding 25%. It also flowers prolifically here, with a profusion of pretty pink dwarf inflorescences, unlike many of the other species which remain vegetative.

Among the associates, dwarfed plants of *Calluna vulgaris* are frequent and occasionally there can be some *Scilla autumnalis*, *Thymus praecox*, *Galium verum*, *Centaureum erythraea*, *Polygala vulgaris*, *Carex flacca*, *Minuartia verna*, *Agrostis stolonifera*, *A. canina* ssp. *montana* and *Koeleria macrantha*. Then, there are some distinctive annuals, such as *Sagina subulata*, *Aira caryophyllaea*, *Juncus bufonius* and the nationally rare *J. capitatus*,

which complete their life cycle by late spring and early summer before the drought which typically bakes the sites occupied by this vegetation bone dry. Another very distinctive rarity which has an important locus here, *Isoetes hystrix*, also completes its yearly cycle of growth through late autumn to early spring and then becomes dormant as the drought period sets in.

Other rare vascular plants which can be found here are the Oceanic West European *Herniaria ciliolata* and the Oceanic Southern *Trifolium bocconeii* which, with *Juncus capitatus*, seem to be especially common on the edges of stands occurring among stretches of *Erica vagans*-*Ulex europaeus* heath.

Bryophytes are not common in the community although certain species may have been missed where recording was carried out in dry summer weather. However, *Riccia beyrichiana* and, less commonly, *R. bifurca* can be found as extensive mats in the winter months and as shrivelled thalli during the droughty summer.

**Habitat**

The *Allium*-*Plantago* community occurs only on The Lizard in Cornwall where, in an extreme oceanic climate, it is confined to small shallow pans on serpentine soils, flushed by seepage in winter and baked dry in summer drought.

This vegetation was first noted by Coombe & Frost (1956a) among the striking complex of habitats developed on The Lizard, a peninsula of serpentine, gabbro and schists which experiences the most oceanic climate of mainland Britain (Malloch 1970). Subsequently it was characterised by Hopkins (1983) as occurring where serpentine crops out on the cliff-tops on the west coast of the peninsula, on valley sides and around rock outcrops among the inland heaths of the plateau. Here, it is found locally in places where seepage in the winter months provides a slow but constant flushing and seasonal flooding to depths of a few centimetres. With such seepage, the soils derived from the serpentine consist of but shallow

pockets of gravelly bedrock embedded in a clayey matrix, usually less than 4 cm deep. Moreover, in late spring and early summer, the flushing ceases and the pans become droughted as the hot weather ensues. The mean annual maximum temperature of this part of Britain is above 26°C and summer insolation is high. With a distinct minimum in precipitation in spring and early summer, there is thus a marked potential water deficit at this time of year (Malloch 1970, Hopkins 1983).

Some elements of the flora of the *Allium-Plantago* community reflect the generally maritime character of the climate, like *Scilla verna*, *S. autumnalis* and *Plantago maritima*. Others, however, such as the winter annuals or those perennials able to capitalise on the mild, damp winter and avoid the rigours of the summer drought, are more obviously adapted to the very particular conditions of the pan habitat, and give this vegetation its especially distinctive character, thriving among the turf kept open by the relatively poor performance of potential competitors. *Allium schoenoprasum*, for example, is a circum-boreal plant widely distributed throughout the Arctic and alpine regions of Europe and finding in these situations on The Lizard one of a number of British habitats which, alternating between very wet and droughted, enable it to thrive. It lies dormant until spring, then produces its leaves and flowers, dying back in early summer. In very extreme situations where flowering becomes sparse, it reproduces vegetatively by the development of new bulbs but, where seed matures, this can germinate in autumn or the following spring (Bougourd in Stewart *et al.* 1994).

### Zonation and succession

The *Allium-Plantago* community is found most commonly among stands of the *Erica-Ulex* heath on The Lizard in situations where the serpentine soils become shallow in rocky ground on the plateaus, on valley sides and in transitions to cliff-tops.

In such places the ericoid sub-shrubs and gorse become confined to deeper pockets of soil within crevices among the serpentine, are held in check by the shortage of ground water and occasionally killed by severe drought (Hopkins 1983). The consequent lack of

shade and access of stock and rabbits to the sward also help maintain the short and species-rich characteristic of the *Festuca* sub-community of the *Erica-Ulex* heath. Here, *F. ovina*, *Thymus praecox*, *Koeleria macrantha*, *Scilla verna* and *Plantago maritima* become more common among the heath flora and it is such plants which, together with sparse *Calluna*, extend a little way into the pans among the rock exposures where the *Allium-Plantago* community develops.

Closer to cliff-tops, as maritime influence increases, the *Erica-Ulex* heath gives way to the *Calluna-Scilla* heath, the *Viola* sub-community of which shares many associates with the grassy form of the inland heath. The *Allium-Plantago* community can sometimes be found in such transitions but it does not extend far on to the sea-cliffs.

### Distribution

The community is confined to The Lizard in Cornwall.

### Affinities

This vegetation is the most striking representative in Britain of the associations grouped together in phytosociological schemes as the Nanocyperion alliance – assemblages with a pioneer ephemeral element of therophytes and dwarf cyperaceous plants repeatedly establishing on periodically flooded, then droughted, patches of bare ground with mud, sand or peat. They have been widely described from other parts of Europe like The Netherlands (Westhoff & den Held 1969), Germany (Pott 1992), Austria (Grabherr & Mucina 1993) and Poland (Matuszkiewicz 1984).

Indeed, these communities have sometimes attracted a degree of excitement elsewhere (e.g. Weeda 1994, Lemaire & Weeda 1994) that throws the British neglect of description into sharp relief.

However, it is clear that, with the tendency to wetter summers in Britain, we are on the edge of the distribution of recognisable vegetation of this alliance and that, with us, it grades imperceptibly to the Bidention, the alliance which includes ephemeral vegetation of wetter and more nutrient-rich habitats like silty ponds.

**Floristic table OV34**

<i>Allium schoenoprasum</i>	V (4–8)
<i>Festuca ovina</i>	V (3–6)
<i>Plantago maritima</i>	V (1–5)
<i>Scilla verna</i>	IV (1–5)
<i>Calluna vulgaris</i>	III (2–5)
<i>Riccia beyhrichiana</i>	III (1–4)
<i>Sagina subulata</i>	III (1–3)
<i>Scilla autumnalis</i>	II (2–5)
<i>Thymus praecox</i>	II (1–2)
<i>Agrostis stolonifera</i>	II (4–5)
<i>Koeleria macrantha</i>	II (2–3)
<i>Agrostis canina montana</i>	II (3–5)
<i>Galium verum</i>	II (1–3)
<i>Centaurium erythraea</i>	II (1–2)
<i>Polygala vulgaris</i>	II (1–2)
<i>Juncus bufonius</i>	II (1–3)
<i>Juncus capitatus</i>	II (1–2)
<i>Carex flacca</i>	II (1–4)
<i>Weissia</i> sp.	II (2–3)
<i>Leontodon taraxacoides</i>	II (2–3)
<i>Minuartia verna</i>	II (1–3)
<i>Ulex</i> sp. seedling	II (1)
<i>Aira caryophyllea</i>	I (1–3)
<i>Herniaria ciliolata</i>	I (1–2)
<i>Juncus bulbosus</i>	I (1–3)
<i>Hypericum pulchrum</i>	I (1–2)
<i>Plantago lanceolata</i>	I (1–4)
<i>Trichostomum brachydontium</i>	I (2–3)
<i>Erica cinerea</i>	I (2)
<i>Danthonia decumbens</i>	I (2)
<i>Filipendula vulgaris</i>	I (1–4)
<i>Juncus articulatus</i>	I (2)
<i>Pedicularis sylvatica</i>	I (1–2)
<i>Isoetes hystrix</i>	I (3)
<i>Sedum anglicum</i>	I (3)
Number of samples	19
Number of species/sample	12 (8–18)
Herb height (cm)	4 (2–8)
Vegetation cover (%)	40 (32–62)