

## Identification of subspecies of *Puccinellia distans* (Reflexed Saltmarsh-grass)

### Introduction

*Puccinellia distans* is now widespread on roadsides, but with a markedly eastern bias to its distribution (Fig. 1). The vast majority of these records are considered to refer to subsp. *distans*. Subsp. *borealis*, the aptly named Northern Saltmarsh-grass, is rarer, and is recorded from the north and east coasts of Scotland, Orkney and Shetland, with additional records from the Western Isles, and vcs 74 and 102. There are two records from N. Ireland. (Fig. 2). It is not recorded from England.

The native habitat of subsp. *borealis* is principally wave splashed rock platforms, near the lowest level that vascular plants grow. Here the grass grows in fissures with *Armeria maritima*, *Plantago maritima*, and *Sagina maritima*. Plants are also found on quaysides, and slipways, where they grow between stones and in cracks in concrete (Trist & Butler 1995). More recently, subsp. *borealis* has also been found on roadsides, with records from vcs 95, 98, 108 and 110. Its occurrence as a roadside halophyte has not been previously publicised and it may be overlooked in this habitat.

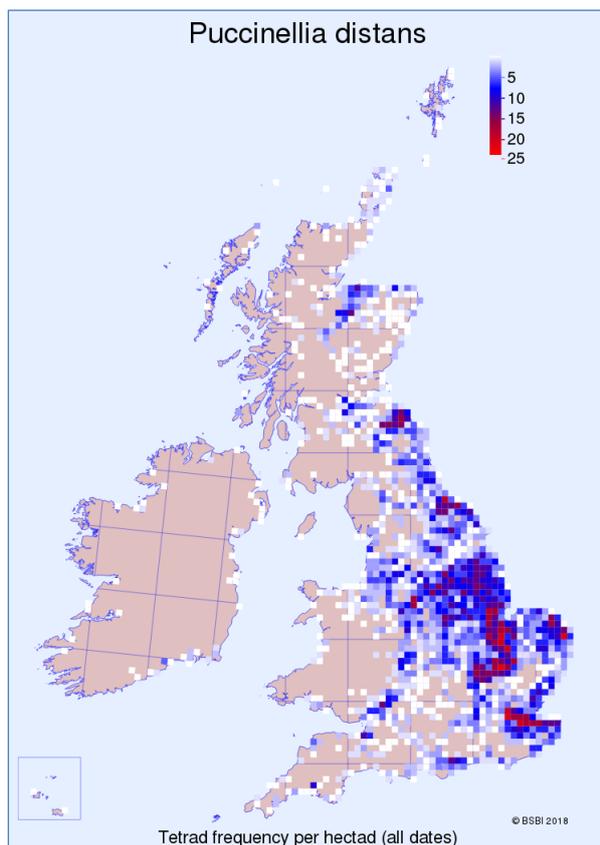


Fig. 1. *Puccinellia distans* tetrad frequency (all dates), from BSBI DDb 21/8/ 2018.

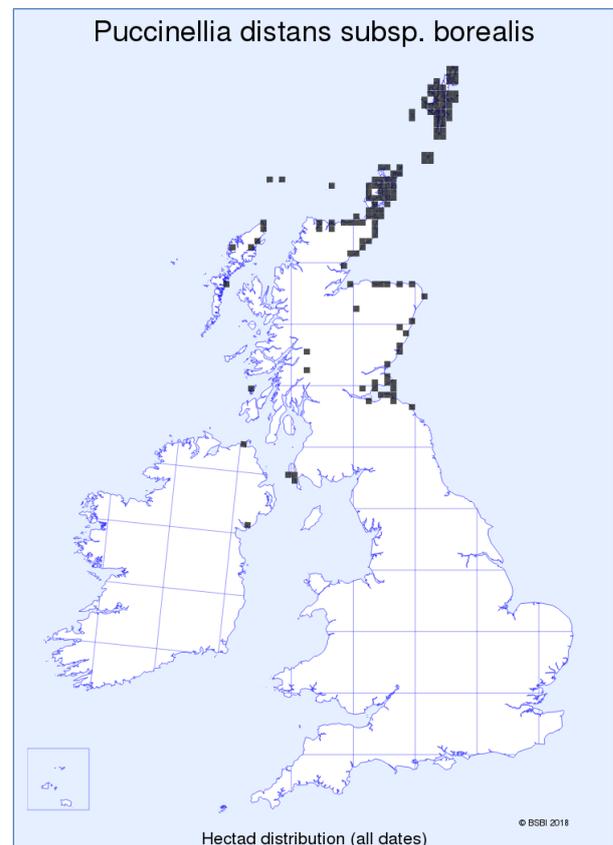


Fig. 2. *Puccinellia distans* subsp. *borealis* hectad distribution (all dates), from BSBI DDb 21/8/2018.

In Scotland, *P. distans* only became widespread on roadsides post 1986, with the southern subsp. *distans* spreading north along the road network. The occurrence of subsp. *borealis* on roadsides in the same geographic area means that the two taxa now have the potential to occur in close proximity, whereas prior to *P. distans* colonising roadsides, their ranges were almost completely allopatric.

## Identification

### *Puccinellia distans* subsp. *distans* (Reflexed Saltmarsh-grass)

- Culms are erect, typically tall (40 - 60cm).
- Panicles are very loose, with branches in obvious whorls with lower branches spreading at 90 degrees or deflexed. The majority of plants have whorls of (up to) 4 or 5 branches.
- Leaves are more or less flat (up to 4mm wide), obvious near leaf bases. NB Leaves fold along the midrib when dry.
- The uppermost stem leaf is remote from the panicle.

Fig. 3 shows the characteristic appearance of panicles of this subspecies.



Fig. 3. *Puccinellia distans* subsp. *distans*. Tilbury ashfields vc18. © Tim Rich.

*Puccinellia distans* subsp. *borealis* (Northern Saltmarsh-grass)

- Culms are short (<25cm, and often as little as 5 - 10cm); typically prostrate, with the individual culms spreading in all directions away from the centre. Some plants may be ascending, or (more unusually) erect. The proportion of ascending / erect plants varies between populations.
- Panicles are typically contracted (though lower branches may be spreading, rarely deflexed). The proportion of plants with spreading / deflexed panicle branches varies between populations.
- Leaves are narrow, inrolled / folded to the base, <1mm wide in side view (typically c.0.4mm).
- The uppermost cauline leaf typically overlaps with the panicle, but the panicle may be exerted.

Fig. 4 shows the characteristic appearance of this subspecies.



Fig. 4. *Puccinellia distans* subsp. *borealis*. Keiss Harbour, vc109.

An extensive set of photographs of subsp. *borealis* plants (mainly from sites in Caithness) can be viewed in a Google Drive folder at:

<https://drive.google.com/drive/folders/1NI5Bt2VkgKyPXAxpGvXvIGRkKbdCW7k7?usp=sharing>

More extreme forms of subsp. *borealis* are very different in appearance from subsp. *distans*. Hubbard (1984) considered them separate species, and Cope (2009) considered it a moot point whether or not this might still be appropriate. However, some plants are less distinctive (see Google Drive folder), but growing alongside more typical plants, and within the core range of subsp. *borealis*, they are referred to this subspecies. Trist & Butler (1995) discuss the taxonomy, ecology and distribution of subsp. *borealis*. Rich (2012) gives a more up to date assessment of identification features.

### Recording

Plants should be identified using all the characters listed above. Over-reliance on single characters, eg, panicle branches deflexed or not, has resulted in misidentifications. In NE Scotland, eg vc95, both subspecies occur on roadsides, and it is possible that intermediate (hybrid?) plants may be found. If subspecies identity is uncertain, plants should be recorded as the species. Certainly in N. Scotland, do not just assume that all roadside plants are subsp. *distans*.

### References

- Cope, T. and Gray, A. (2009). Grasses of the British Isles. BSBI. London.  
Hubbard, C.E. (1984). Grasses (3rd edition). Penguin Books. London.  
Rich, T.C.G. (2012). *Puccinellia distans* account. Online at [http://bsbi.org/wp-content/uploads/dlm\\_uploads/Puccinella\\_distans\\_Crib.pdf](http://bsbi.org/wp-content/uploads/dlm_uploads/Puccinella_distans_Crib.pdf).  
Trist, P. J. O. & Butler, J. K. (1995). *Puccinellia distans* (Jacq.) Parl. subsp. *borealis* (O. Holmb.) W. E. Hughes (Poaceae) in mainland Scotland and the Outer Isles. *Watsonia* 20: 391-396

Andy Amphlett  
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