Fold

local recorders the details to the bjease bass ou

probably know it is there. If they don't, contact the local landowner first, as they If you find Twinflower in the wild, look to

Can You Help?

setting shallow roots into the moss. via stolons (creeping surface level stems), It spreads readily across the woodland floor

of the moss or a Heather tuft, or climbing spotted with the growing tip seen sticking out another. When not in flower, they are often and are impossible to distinguish from one judividual plants can grow over tens of metres

Plants

Fold

toothed, usually hairy, and up to 10mm in length. green. The leaves are small, round, slightly darker red, while young, fresh growth is more leaves and tough red stems. Older stems are but can be distinguished by its always paired This plant is easy to overlook when not in flower,

Please note

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.əzis ni mmð by passing animals. The seed is approximately seed, which has sticky hairs and is transported If pollinated, each flower produces a single

paas



A few things to look out for:

How to Identify Twinflower

Plantlife





Scotland

Plantlife is the global charity working to secure a world rich in wild plants and fungi.

For advice on pine woodland management more broadly, please see Plantlife's Pinewood Management Guide



Help protect the future of Twinflower - find out how on our website:

plantlife.org.uk/learning-resource/ managing-twinflower

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References:

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Ennos, R. A., Cottrell, J. E., Wiberg, R. A. W., Scobie, A. R. & A'Hara, S. W. The genetic consequences of long term habitat fragmentation on a self-incompatible clonal plant, Linnaea borealis L. Biol. Conserv. 201,

Scobie, A. R. & Wilcock, C. C. Limited mate availability decreases reproductive success of fragmented populations of Linnaea borealis, a rare, clonal self-incompatible plant. Ann. Bot. 103, 835–846 (2009).

6. Back







Fold





Scotland's Caledonian **Pinewoods**

In Scotland's northeast, wilder boreal pinewoods are dominated by native Scots Pine *Pinus sylvestris*, our only pine tree. These trees grow in nutrient-poor, acidic, mineral soils. While in the west they mix with various broadleaves in temperate rainforests. Sadly, through deforestation, overgrazing, and the introduction of non-native trees, only tiny remnants of wild Caledonian pinewoods remain. Twinflower relies on this increasingly scarce habitat, but is heavily threatened by competition with other shrubs, clear fell, in plantations where all the trees are the same age.

3. First fold right (outside)



Scotland Twinflower: **Woodland Management** and Conservation

1. Front

Fold

Fold

The species which pollinate Twinflower do not travel far. Patches more than 100m apart will not be cross-pollinated, particularly when suitable woodland is not connected. Nearly all wild Twinflower patches have no neighbours within 100m, and so are not expected to produce significant amounts of viable seed. This means across most of Scotland there is no new generation and what remains are declining remnants.

Despite efforts to restore Caledonian pinewoods through reduced grazing and diversification and re-structuring of woodland and plantations, Twinflower will not recover without direct intervention. Almost all remaining patches are too sparsely spread and threatened, and not enough seed is being produced to recolonise the woods. To address this, translocations are being carried out. Cuttings are taken from different healthy genetic individuals and planted out in close promximity at optimal sites, allowing crosspollination to occur, and healthy genetically mixed seed to spread. These have been successful, but translocation is needed at a much larger scale to ensure the long-term survival of Twinflower in Scotland.

Mature Twinflower is resilient and may survive in most pine woods without clear fell. However, for Twinflower to thrive, it needs native woodland with a varied age structure, moderate levels of shade, and varied ground vegetation without Heather dominance. Ideally, some grazing or natural disturbance is required to help seeds establish. Connectivity between patches and woodlands is also key to encouraging natural restoration of Twinflower.

Inside panel 3

Can You Help?

Work is underway to scale up Twinflower translocation, alongside habitat restoration. If you'd like to volunteer, you can get in touch via our website to help collect or keep Twinflowers in nurseries, monitor wild populations, or assist with translocation.



Please note: Translocation is a complex process and any practitioners keen on helping need to communicate with Plantlife and other experts to ensure cuttings survive and thrive.

What to Do to

Work on wider habitat connectivity

for seed

establishment

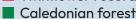
Pictured: Junior rangers volunteer their time to plant out Twinflower they helped grow from across Strathspey at our translocation site in Drumin Wood, Glenlivet.

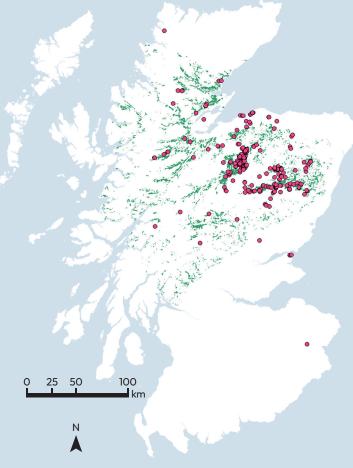
Twinflower in Scotland

In Britain, Twinflower is rare, with remaining populations fragmented. It is restricted to patches of ancient pinewoods, old plantations, or occasionally open heathland, particularly in Strathspey and Deeside.

Map key:

Twinflower record





Contains data from Botanical Society of Britain & Ireland © BSBI 2025. Contains data from Native Woodland Survey of Scotland © Scottish Forestry 2014. Contains OS data © Crown copyright and database right 2025.

Save Twinflower Does a site you manage have Twinflower? Ask about Lookup Plantlife Pine Woodland botanical data and - Unknown Management Guide consider surveys Yes Assess what you Do not clearfell on have and make or near Twinflower to control shrubs and plan to protect/ create disturbance where possible enhance Is the patch Seed under threat, is produced and it flowering, and patch secure is it producing seed?

Patch insecure

Focus on patch protection

and habitat

restoration first

throughout boreal forests, but in Scotland it is very rare and continues to decline. Twinflower is symbol of our native pinewoods, a flagship species for restoration, and it holds cultural significance in Scotland's natural heritage.

Globally, Twinflower is widespread

Manage grazing/canopy

No seed produced and patch secure

Translocation where suitable sites and connectivity present

The above decision tree is a basic intro to steps to consider on site, and more info is available on our website:



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plantlife.org.uk/ learning-resource/ managing-twinflower

Inside panel 4

Inside panel 5

Where Twinflower data is gathered,

through NatureScot. For assistance

with any of this, contact Plantlife.

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please share with Plantlife. All

translocations must be licensed

Inside panel 6