

Botanical Society of Scotland



President's Report 2015/16

John Grace

2015/16: a particularly successful lecture programme



BOTANICAL SOCIETY OF SCOTLAND 2015/2016 LECTURE PROGRAMME

EDINBURGH

All lectures are held in the Lecture Theatre of the Royal Botanic Garden, Edinburgh, 20A Inverleith Row, Edinburgh, EH3 5LR at 5.30pm. Tea will be served from 5pm. Abstracts of the lectures and biographical notes of the speakers will be available on the Society's website two weeks before each lecture.

24TH SEPTEMBER 2015

Professor Roy Watling
Royal Botanic Garden, Edinburgh
What Beatrix Potter can tell us about fungi

22ND OCTOBER 2015

Dr Richard Milne
University of Edinburgh
Divorcing the Scrochs: how and why molecular data has changed plant classification
(Tea will be 15 minutes later than usual at 5.15)

19TH NOVEMBER 2015

Professor Alastair Fitter
University of York
Friendly fungi or business partners? A mycorrhizal medley

17TH DECEMBER 2015

Scott Wilson
Independent Forest Ecologist, Aberdeen
Native woodlands in Scotland - some knotty problems: past, present and future

Best lecture
programme
ever, at BSS



21ST JANUARY 2016

Prof Alistair Hetherington
University of Bristol
Tales from the water-gate: leaf surface stomata, what they do and why they are important

25TH FEBRUARY 2016

Dr Sarah Woodin
Aberdeen University
100 years of vegetation change in Scotland

24TH MARCH 2016

Nick Stewart
Independent Botanist
Aquatics in Scotland: the overlooked well beneath

14TH APRIL 2016

Dr Charlie Clutterbuck
City University
The relationships between people, plants and science in determining where our food comes from.
(This lecture will be suitable for children)

19TH MAY 2016

Dr Karen Lee
John Innes Research Centre, Norwich
Getting inside carnivorous plants
The lecture will be preceded by a walk-round the insectivorous plants in the RBGE plant houses at 4.30pm and AGM at 5.30pm

Thanks to Maria Chamberlain

Summer Programme of Field Meetings, sometimes joint with other Societies

Also numerous ad hoc meetings

SATURDAY 19th MARCH 2016, 10.30am
MOSSES AND LIVERWORTS OF SOUTH INCH, PERTH
JOINT with PSNS (PERTSHIRE SOCIETY OF NATURAL SCIENCE)
Leaders: David Chamberlain and Alistair Godfrey

Meet at South Inch Car Park NO119 230 (charge). Further information from alistair.godfrey@btinternet.com. Records will be collected for the Urban Flora project.

TUESDAY 10th MAY, 7pm
LICHENS OF DUNDEE
DUDHOPE PARK
JOINT with DUNDEE NATURALISTS
Leaders: Richard Brinklow and Brian Ballinger

Meet at Dudhope Park car park NO396 306. See www.dundeenats.org.uk. Records will be collected for the Urban Flora project.

SATURDAY 14th MAY, 10am
FORAGE FOR YOUR LUNCH
CRAIGMILLAR PARK, EDINBURGH
Leaders: Richard and Ninya Milne

We will pick our edible finds and cook them in a local church hall. Booking required. There may be a small charge for the hire of the hall. Please contact nenyamilne@gmail.com if you wish to attend.

SUNDAY 15th MAY, 10am
FUNGI UNDER THE MICROSCOPE
JOINT with WATER OF LEITH CONSERVATION TRUST
and FUNGUS GROUP OF SOUTH-EAST SCOTLAND
WATER OF LEITH CENTRE
24 LANARK RD, EDINBURGH EH14 1TQ
Leaders: Neville Kilkenny and Maria Chamberlain

The workshop will go over the life cycle biology of the major fungal groups and concentrate on the microscopic characters which are often needed to confirm ID. We will all collect material for observation in the vicinity of the Centre. Book with Maria.Chamberlain@ed.ac.uk as numbers will be limited.

BLAIRGOWRIE
JOINT with PSNS (BOTANICAL SECTION)
Leaders: Martin Robinson and John Grace
Met at car park by river NO18014538

SUNDAY 19th JUNE 10am -2pm
HIGHER PLANTS OF ARTHUR'S SEAT

Leader: Ewan Cole

Records will be collected for the Urban Flora project.
We will examine the wildflowers of Arthur's Seat! Arthur's Seat Volcano is a site of special scientific interest (SSSI) located within the City of Edinburgh. It is a composite site comprised of Arthur's Seat Volcano in Holyrood Park, Carlton Hill and Castle Rock. The site covers an area of 225 hectares and is primarily composed of lowland grassland habitats, both calcareous and acidic. The close proximity of the site to the coast and its rocky igneous substrate provide a perfect niche for many plant species, with many of them being exceptionally rare.
Please bring decent footwear and a packed lunch. We aim to be finished by 14.00.
Meet at Palace of Holyroodhouse Car Park, just off Queens Drive (NT27027372). The location is accessible via the Lothian Buses numbers 6 and 35.
If you have any questions or would like to know more please e-mail Ewan at E.Cole@rbge.ac.uk

SATURDAY 25th JUNE 2016, 10:00am
CAM CHREAG, near TYNDRUM, PERTSHIRE (V.C. 88)
JOINT ALPINE FIELD MEETING WITH BSBI
Leader: John Holland

Cam Chreag (884 m) is a Corbett located at the head of Gleann a'Chlachain approximately 6.0 kilometres north east of Tyndrum in the north-west corner of the Loch Lomond and the Trossachs National Park. Cam Chreag forms part of the Beinn Heasgarnich Special Area of Conservation. The site has areas of species-rich calcareous grassland, flushes and cliff ledge communities. The route will take us up through Gleann a'Chlachain where more than 200 hectares of mountain woodland and scrub were planted in 1999. Meet at the walkers car park at SRUC Auchtertyre Farm / Strathfillan Wigwams (NN 353 290), which is off the A82 about 3km south of Tyndrum.
Contact John Holland for further details and to confirm a place (booking is essential as numbers will be limited), tel. 01838 400524 (day) or 01567 820509 (evening), e- mail john.holland@sruc.ac.uk.

TUESDAY 24th May 7pm
EVENING CRASH COURSE IN HIGHER PLANT ID
Venue tbd
Leader: Richard Milne

The course is aimed at complete beginners. There may be a charge for the hire of the hall. Please contact Maria.Chamberlain@ed.ac.uk and for further details.

SUNDAY 12th JUNE 10am-2pm
BAWSINCH AND DUDDINGSTON NATURE RESERVE
Leader: Ewan Cole

Records will be collected for the Urban Flora project.
Bawsinch and Duddingston Nature Reserve is located in the heart of Edinburgh, just south of Arthurs Seat. It is the only example of a natural freshwater loch in the City of Edinburgh. It is an important site for breeding and wintering wildfowl and includes areas of mixed woodland, scrub, grassland and reedbeds. This field meeting will take place on the southern side of the loch, access to which has very gratefully been provided by the Scottish Wildlife Trust.

The main purpose of this field meeting is to gather records for the 'Urban Flora of Scotland' project, which launched last year. This meeting also aims to provide guidance and information for those who would like to get involved in the project, from how best to record wild plants to how to upload those records to us.

This walk will be led by Ewan Cole, a new graduate of the University of Edinburgh and all round plant enthusiast. Please bring decent footwear and a packed lunch. We aim to be finished by 14.00

Meet at the junction of Forckenford Rd and Duddingston Rd at NT2866772061. The location is accessible via the Lothian Buses number 42.

TUESDAY 14th JUNE 7pm
BROUGHTY FERRY SHEIL STREET RESERVE
JOINT with DUNDEE NATURALISTS
Leaders: Brian Ballinger and Lorna Ward

Meet at Esplanade car park NO474 309 See www.dundeenats.org.uk. Records will be collected for the Urban Flora project.

SATURDAY 2nd JULY 10am
DINGWALL
JOINT with BSBI
Leaders: Brian Ballinger and Mary Dean

This will be an all-day event. Book with Brian Ballinger brian@garrickwood.org.uk

SUNDAY 17th JULY 2pm
MILEY SWT RESERVE, DUNDEE
JOINT with SCOTTISH WILDLIFE TRUST - ANGUS AND DUNDEE
Leaders: Brian Ballinger and Mary Harwood

Meet at Loons Road entrance NO383 313.

SATURDAY 7th SEPTEMBER 10am
LICHENS OF KINNOULL HILL, PERTH
JOINT with PSNS (BOTANICAL SECTION)
Leaders: Richard Brinklow and Alistair Godfrey

Meet at Corsiehill lay-by NO135 235 Further information from alistair.godfrey@btinternet.com. Records will be collected for the Urban Flora project.

SATURDAY 24th SEPTEMBER 11am
FUNGUS FORAY at HUMBLE WOODS
Leader: Stephan Helfer

Meet Car Park at Humble Church - NT 462637
Access off crossroads at Humble some three miles from A68 on the B road from Soutra Mains to Haddington.

SUNDAY 9th OCTOBER 11am
BRYOPHYTES OF BLACKFORD HILL, EDINBURGH
Leader: David Chamberlain

Meet at The Blackford Hill car park in front of the Royal Observatory - EH9 3HJ. This outing will be specially geared to novices and students. Records will be collected for the Urban Flora Project.

INSTRUCTIONS FOR MOST MEETINGS: Please bring with you waterproof clothing, suitable footwear, a hand-lens and packed lunch. Botanical Society of Scotland members are covered by the Society's insurance. The leader will warn participants of possible risks. Contact the Programme Secretary, Maria.Chamberlain@ed.ac.uk for further details or queries concerning transport to meetings. Check <http://www.botanical-society->

Thanks to Maria Chamberlain

Perth urban habitats around the River Tay with the Perth Society of Natural Science, Saturday, 19th March 2016.. Bryophytes



The Society's academic journal, *Plant Ecology and Diversity*

Edited by Laszlo Nagy, published by Taylor and Francis, six issues per year



Plant Ecology & Diversity, 2015
Vol. 8, Issue 3, 427–436, <http://dx.doi.org/10.1080/17550874.2015.1004562>



Articles with Scottish flavour

Red deer impacts on the montane *Racomitrium lanuginosum* moss-heath community in north-west Scotland

Oliver Moore^{a,*} and Michael J. Crawley^b

^a*School of Natural and Social Sciences, University of Gloucestershire, Cheltenham, UK;* ^b*Department of Biology, Imperial College London, Ascot, UK*

(Received 24 July 2014; accepted 30 November 2014)

Background: The effect of sheep grazing on the internationally important moss-heath community of the British uplands has been well studied but less is known about the impact of red deer (*Cervus elaphus*).

Aim: To compare the impact of different densities of red deer on bryophytes and lichens associated with moss-heath vegetation at Beinn Eighe National Nature Reserve (low deer density) and a traditional sporting estate at Letterewe (with higher deer density), Scotland.

Methods: Suitable pairs of summit study sites were selected at random, and species cover data were collected from thirty 1-m² quadrats at each location. The dung pellet group count method was used to estimate red deer usage. Generalised linear models were fitted to the data.

Results: Mean graminoid cover was significantly higher in two of the Letterewe study sites compared with their Beinn Eighe counterparts. Bryophyte cover and height in general matched the pattern for *Racomitrium lanuginosum* in that they were not significantly different between any of the study site pairings.

Conclusions: Despite differences in mean deer density between the Beinn Eighe and Letterewe properties as a whole, red deer numbers actually using the exposed summit moss-heath vegetation were estimated to be very low. Therefore, bryophyte cover within the Letterewe summit study sites was not significantly different from that at Beinn Eighe.

Keywords: Beinn Eighe; bryophyte; *Cervus elaphus*; graminoid; lichen; sheep grazing; summit vegetation

New in 2016, The Grubb Reviews



Impact Factor

Plant Ecology and Diversity
has seen an increase from
1.766 to 2.349

Most highly cited
article so far, n=187



Plant Ecology & Diversity
Vol. 1, No. 2, November 2008, 147–160



Alpines, trees, and refugia in Europe

H. John B. Birks^{a,c,*} and Katherine J. Willis^{a,b}

^a*Department of Biology, University of Bergen, Bergen, Norway;* ^b*Oxford University Centre for the Environment, University of Oxford, Oxford, UK;* ^c*Environmental Change Research Centre, University College London, London, UK*

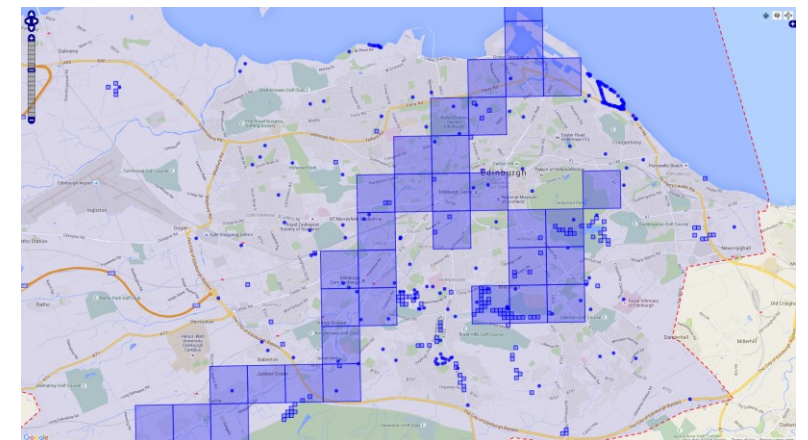
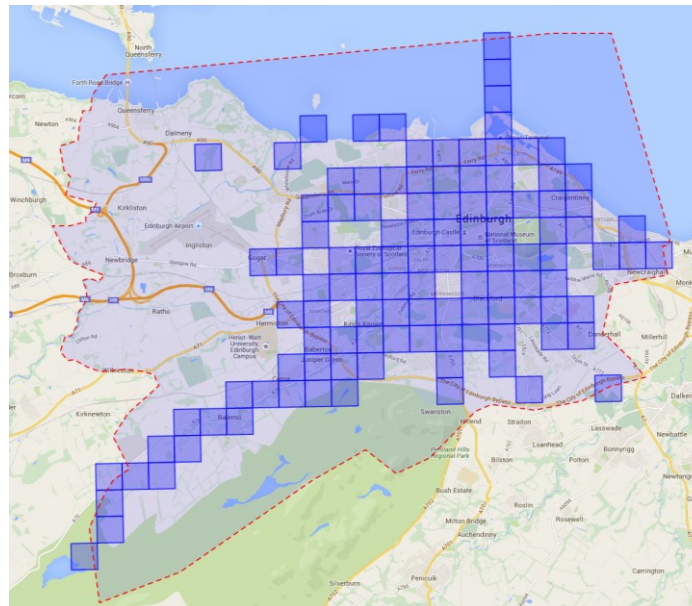
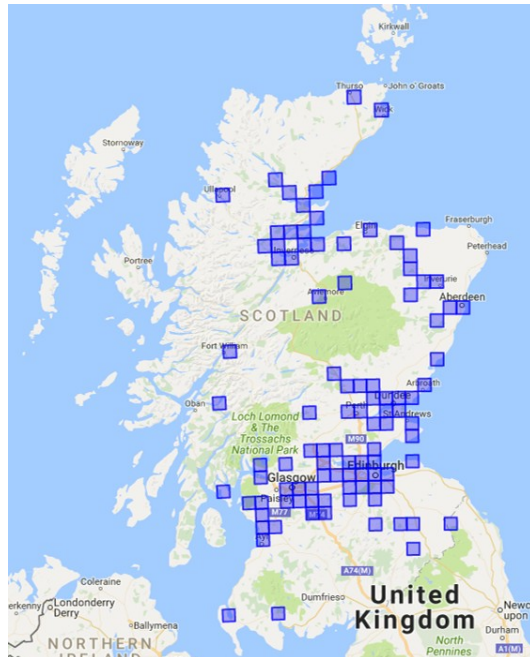
(Received 18 December 2007; final version received 16 May 2008)

Refugia were critically important for species survival in both glacial and interglacial stages of the Quaternary. The classical view of glacial stages is that alpine and arctic plants were widespread in the lowlands of central Europe and around the margins of the continental and alpine ice-sheets, whereas trees were restricted to localised refugial areas in southern Europe and the Mediterranean basin. New palaeobotanical evidence in Europe suggests, however, that this classical view is incomplete and that tree distributional ranges during the glacial stages were more extensive and included many local areas of small populations in central and eastern Europe growing in so-called 'cryptic' refugia. We argue that this concept of 'cryptic' refugia is also applicable to arctic and alpine plants during temperate interglacial stages where small localised populations grow in naturally open habitats that are not beyond or above the forest limit. Determination of the whereabouts of these cold- and warm-stage 'cryptic' refugia is very important in our understanding of the spatial patterns of present day genetic diversity and the possible rates of spread of trees in response to future climate change.

Keywords: alpine plants; arctic plants; cryptic refugia; Holocene; Last Glacial Maximum; macroscopic charcoal; Quaternary; plant macrofossils; pollen; trees

The Urban Flora Project – about 19,000 records so far

But more recorders needed! Are you going on holiday to the western parts of Scotland?



**Urban Flora: let us focus today on
some of the rarer plants**

**(..rare in Scotland, sometimes
common in England and Wales)**

List of southerners we've found

Senecio inaequidens@ Granton, Edinburgh

Atropa belladonna@ Edinburgh

Conyza canadensis @ Leith, Edinburgh

Festuca arundinacea @ Bo'ness

Galinsoga quadriradiata @ Edinburgh

Polypogon viridis @ Granton, Edinburgh

Saxifraga granulata@ Cramond Island, Edinburgh

Allium carinatum @ Dundee

Epipactis helleborine@Bo'ness

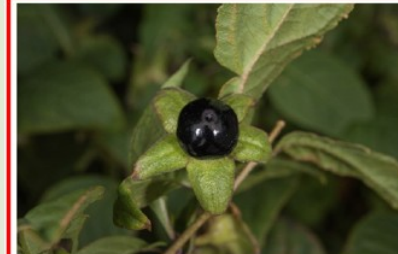
Lilium martagon@Blairgowrie

Olearia avicenniifolia x *moschata*@ Ayr

Carpobrotus edulis@ Portpatrick



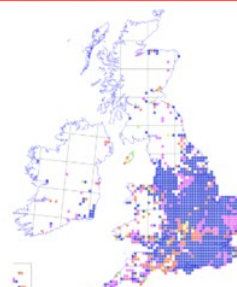
Senecio inaequidens (Narrow-leaved Ragwort)



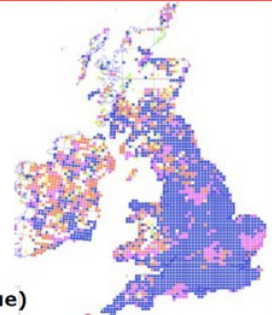
Atropa belladonna (Deadly Nightshade)



Conyza canadensis (Canadian Fleabane)



Festuca arundinacea (Tall Fescue)



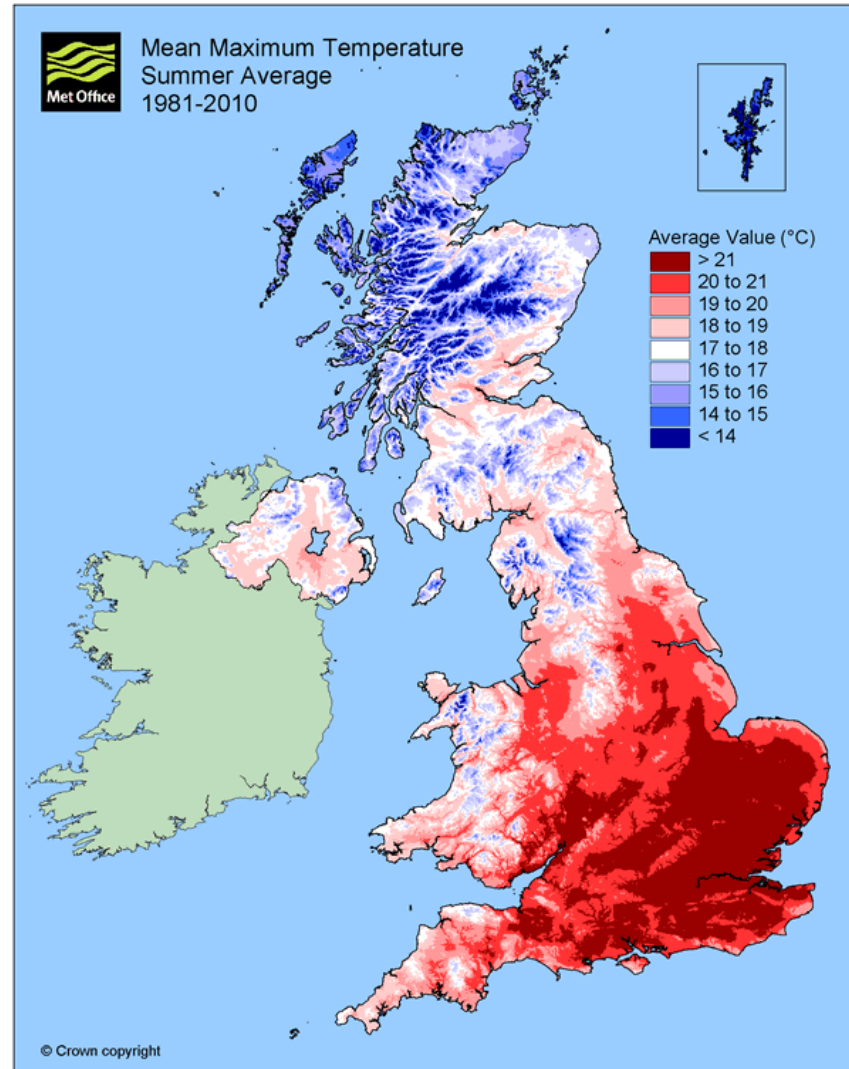
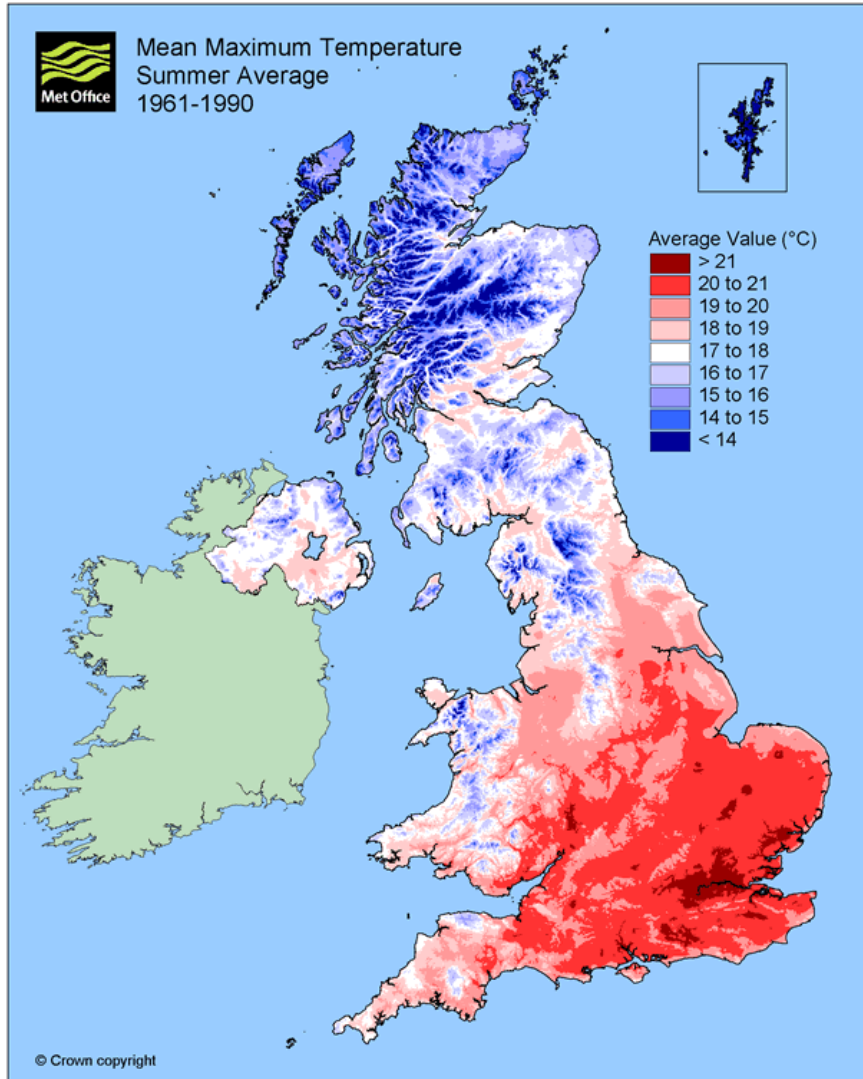
Galinsoga quadriradiata (Shaggy-soldier)



Polypogon viridis (Water Bent)

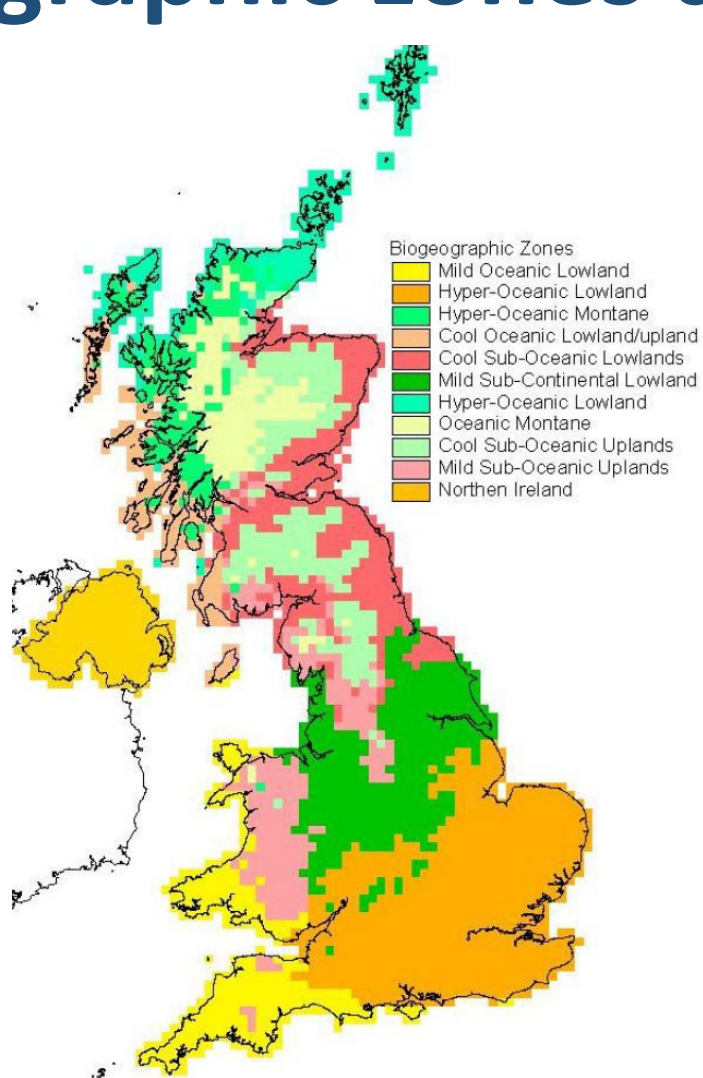


Warming brings southerners to the north

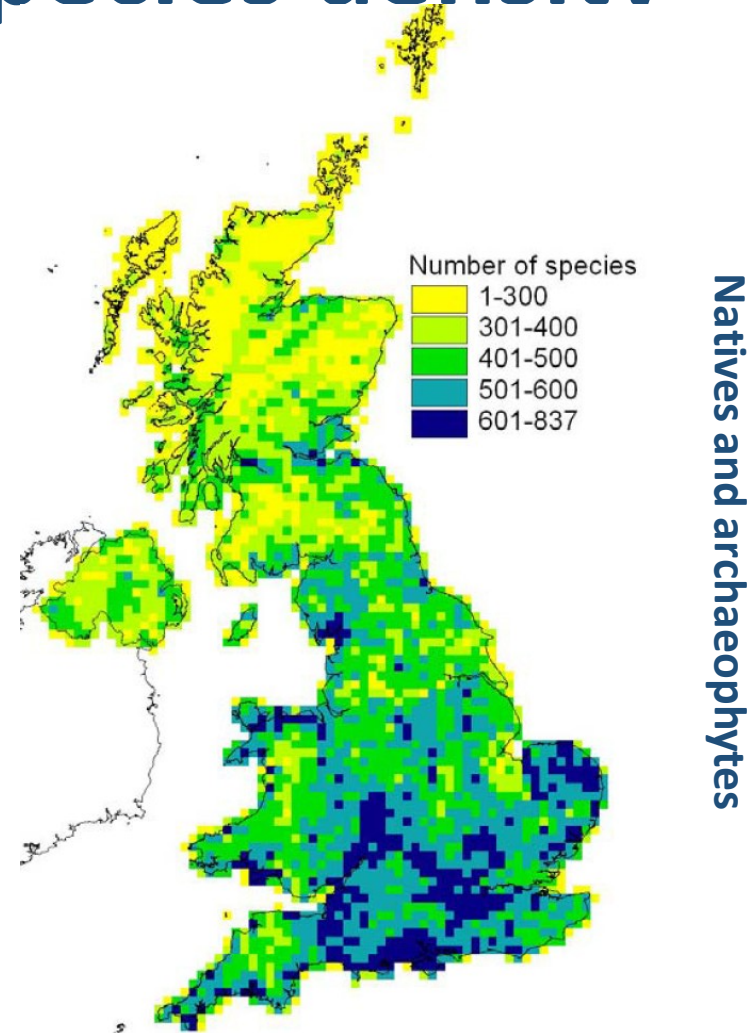


Isotherms
moving 15 km
north per year
(Beniston 2013)

Biogeographic zones and species density



Preston et al (2003) CEH Report



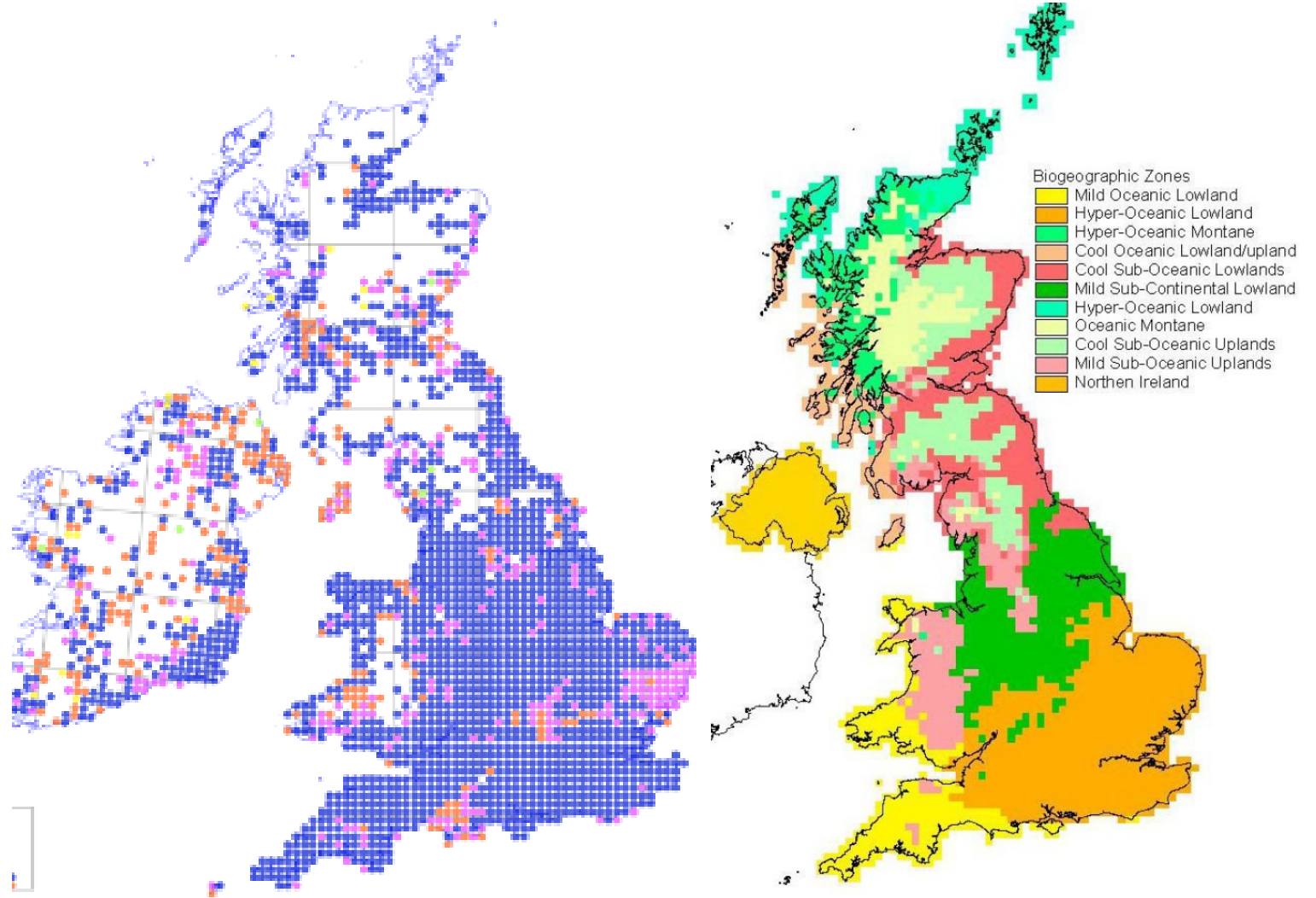
Far more of them in the south

Species often map by summer temperature

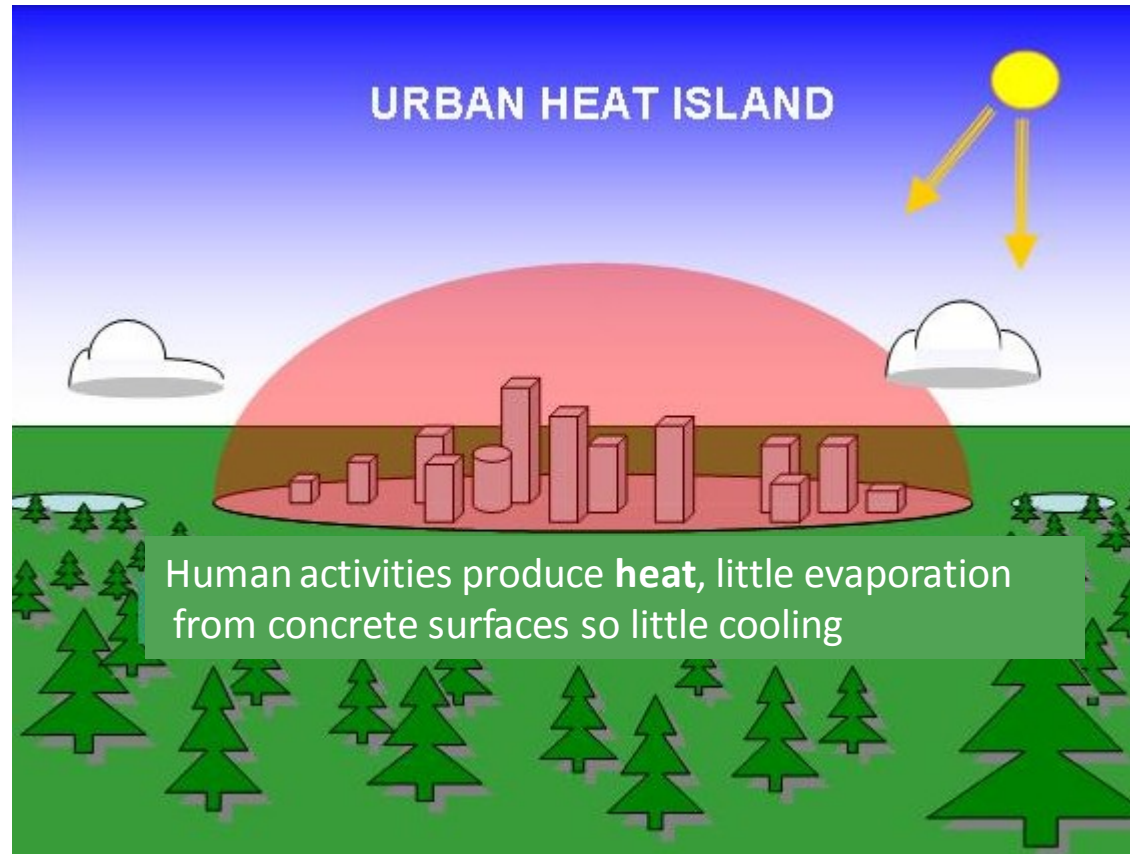


Photo: john grace

***Buddleja davidii* (Butterfly-bush)**
An Edinburgh street



Different patterns expected in urban environments



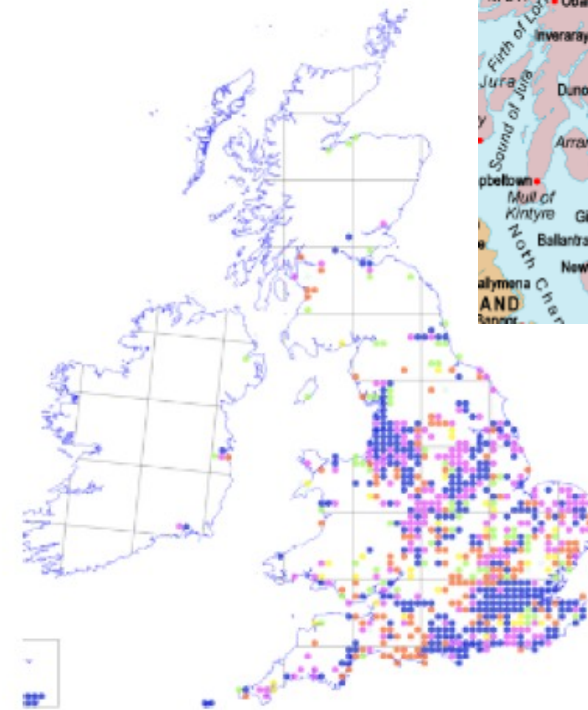
Hypothesis: we will find southern species in our northern towns and cities

A southerner comes north



Photo: john grace

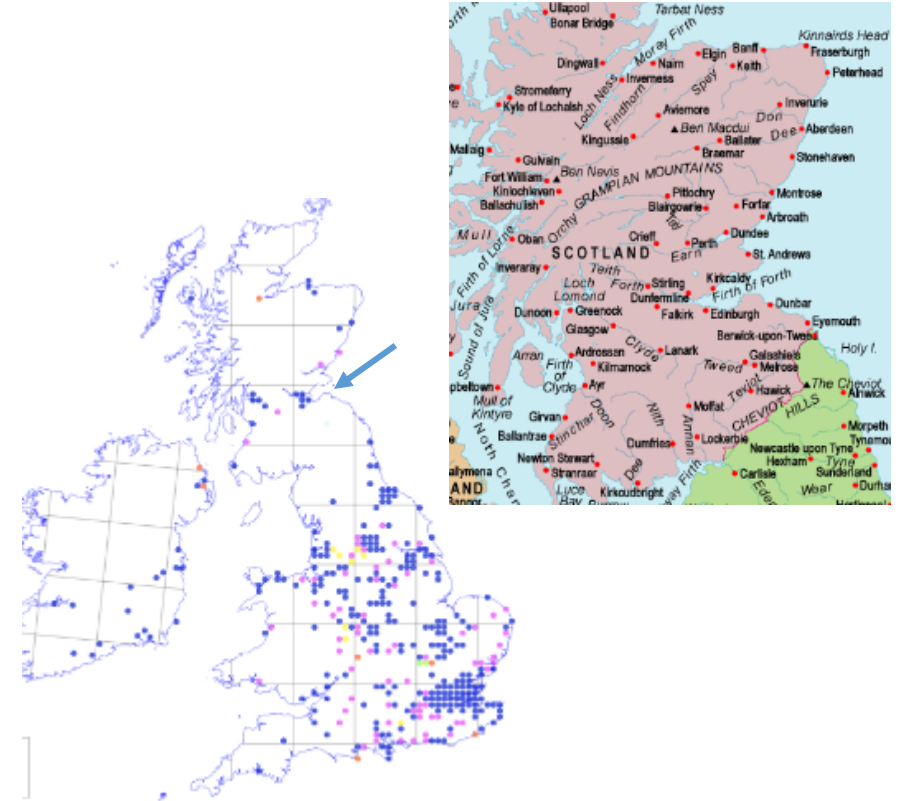
***Galinsoga quadriradiata* (Shaggy-soldier)**



Found in Edinburgh streets and allotments, many sighting this year

Another southerner comes north

Photo: chris jeffre



Senecio inaequidens (Narrow-leaved Ragwort) found at Granton

A sea-side southerner



***Carpobrotus edulis* (Huttentot Fig), Cliff at Portpatrick**

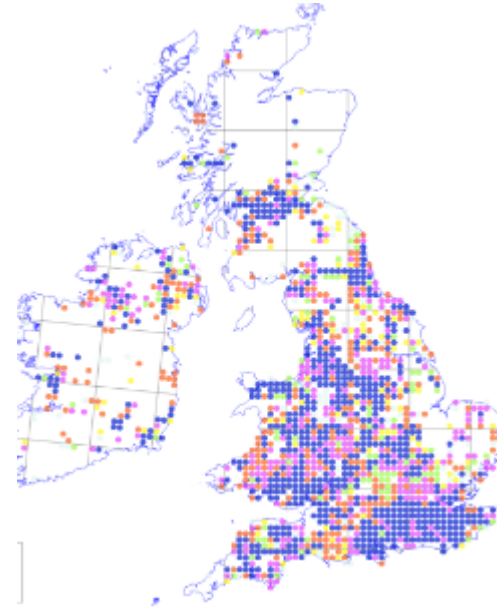
A woodland example



Photo: chris jeffre



***Epipactis helleborine* (Broad-leaved Helleborine) in a wood at Bo'ness**



“said to be more common in Glasgow than anywhere else in Britain (Allan & Woods, 1993)”.

Spreading in the North-East

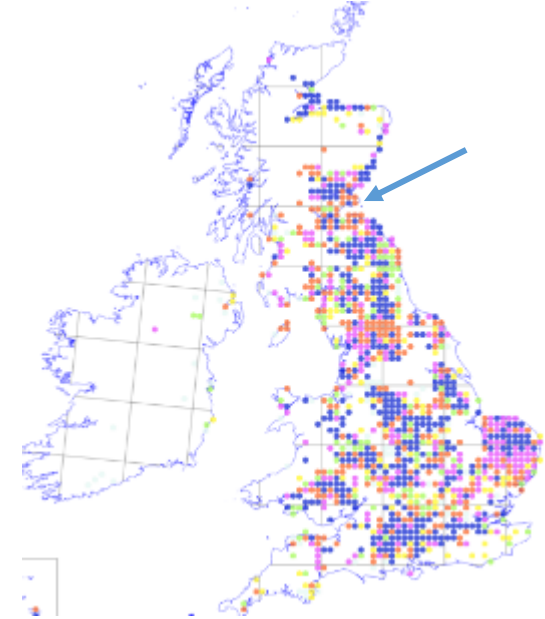


Photo: chris jeffree

Saxifraga granulata (Meadow Saxifrage)
Crammond Island, Edinburgh



WWII fortifications at
Crammond Island



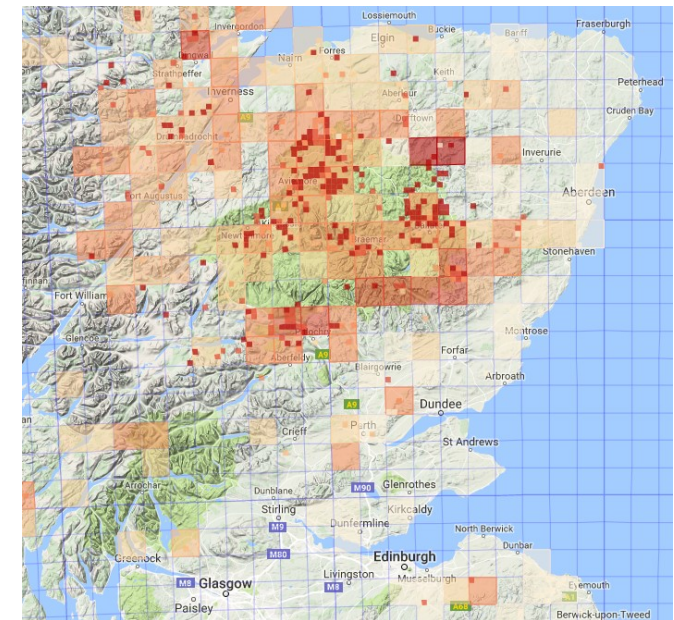
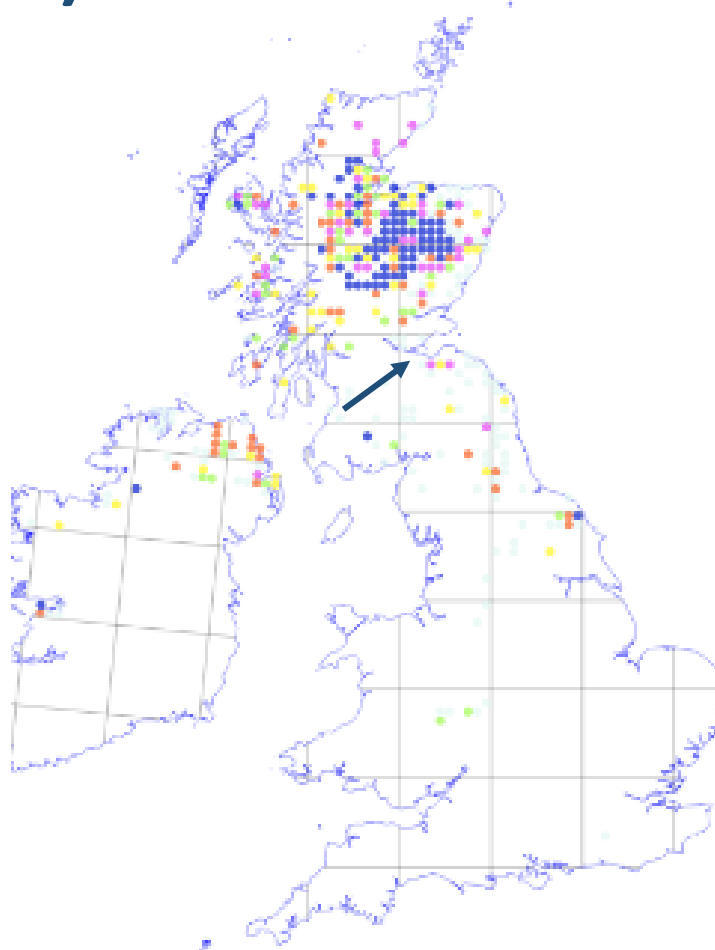
Are northern species absent from (warm) cities?

(the converse hypothesis)

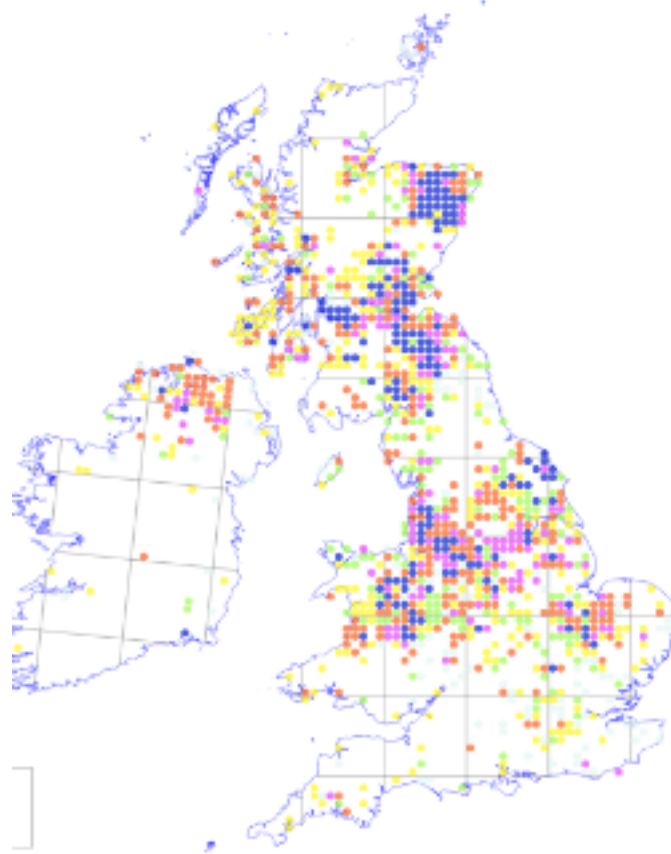


Photo: chris jeffree

***Pyrola media* (Intermediate Wintergreen)**
In a wood at Bo'ness



But some species are evidently temperature-insensitive



***Galeopsis speciosa* (Large-flowered Hemp-nettle), Edinburgh allotments**

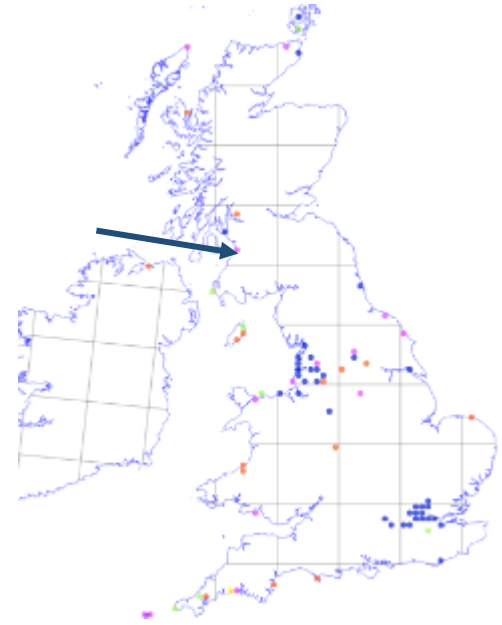
Not a southerner but a kiwi, relation to temperature unclear



Photo: john grace



Oliver Cromwell's Citadel, Ayr



***Olearia avicenniifolia x moschata* (*O. x haastii*) (Daisy-bush) Ayr**



The End
Many thanks for listening