The Spread of Aliens in Skye, Raasay & The Small Isles (vc104)

Stephen J Bungard
November 2019

The Notes
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Since the last Atlas, records of alien species in VC104 (North Ebudes i.e. Skye, Raasay and the Small Isles) have increased massively. This is partly the result of increased enthusiasm for such species by local recorders and partly genuine increase. Most additions to the county list this century have been aliens, including unexpected plants like *Mitella ovalis* (Oval-leaved Mitrewort) well naturalised in a wood at Uig, *Peltaria alliacea* (Garlic Cress) on the shore at Armadale and the blue, garden variety of *Phyteuma spicatum* (Spiked Rampion) partway up a moorland track into the Black Cuillins. This presentation looks at the apparent spread of some established alien species.

*Epilobium brunnescens*

*Epilobium brunnescens* (New Zealand Willowherb) was first recorded in the wild in 1904 in Edinburgh and on Skye in c. 1952. It is now recorded in 436 out of 709 tetrads in VC104, from seashore to mountain tops. Mostly it appears to integrate into the native vegetation without much harm, but in some places it forms a blanket tens of metres in diameter, smothering all in its path. A concern is that it colonises small wet cracks in montane rocks that are home to threatened species like *Micranthes* (*Saxifraga*) *nivalis* (Alpine Saxifrage). It is difficult to assess its spread in recent decades. The tetrad distribution maps for 1999, 2009 and 2019 appear to show rapid expansion but this is in large part an artefact of increased tetrad recording – see the similar profile for the native *Succisa pratensis* (Devil’s-bit Scabious).

The effects of the move to tetrad and then monad recording can be overcome by moving the map scale out to 10km squares.

*Epilobium brunnescens* Hectad distribution maps:

![Hectad distribution maps](image)

1999
33 hectads

2009
40 hectads

2019
42 hectads

This does show some increase at the hectad level, but again the *Succisa pratensis* hectad distribution maps act as a control.
The recording of this species in four additional hectads between 1999 and 2019 is entirely the result of a new VCR’s determination to reach the far ends of the vice-county and a similar approach by the survey team for the *Flora of the Isle of Rum*. The remaining hectad without a record has been visited. It is a small islet which is equivalent in land area to 0.4% of a hectad, but in truth much of that is unvegetated rock barely above MHWS. There is no *Succisa* there.

It is necessary to go back more decades to see when the spread of *E. brunnescens* really occurred:

As before, *Succisa* records make a useful comparison, but first a comment on the hectads shown in the 1959 map: The three hectads in a north-south line on the Trotternish peninsula are where this species is now most invasive. It is to be hoped that the smothering effect it has there is not going to be repeated all over the area as other populations reach the current age of the Trotternish one.
Succisa pratensis hectad distribution maps:

1959  27 hectads
1969  41 hectads
1979  42 hectads
1989  43 hectads

It is the 1969 map before Succisa appears fairly well recorded even at the hectad level, and one must assume the same is true for Epilobium brunnescens.

Cortaderia richardii

There were no records in VC104 of Cortaderia richardii (Early Pampas-grass) before 2000 when I recorded it on Raasay, some way from habitation. It is now known in 33 tetrads on Skye and two on Raasay, mostly on roadsides. The plants at that first site were already several years old. Most of the other sites are of young plants only, supporting the idea that the spread shown by the distribution maps is a reasonable representation of reality.

Crocosmia pottsii

Recent work on the Montbretia stands that are frequent along roads, burns and shorelines has shown that as well as Crocosmia x crocosmiiflora (C. aurea x pottsii) there is quite a lot of one of the parents, Crocosmia pottsii (Potts’ Montbretia). The apparent rapid recent increase is an artefact of recording as this taxon had been overlooked until recently. I am grateful to Duncan Donald and Ian Green for drawing my attention to this species and to Seth Gibson for insisting I should pay attention and for making most of the recent records.

Concluding Remarks

In order to assess the spread of alien plants, periodic distribution maps may not be sufficient. Changes in recorder, recording methodology and strategy need to be taken into account. Population size and, for perennials, age distribution can be helpful.

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The Poster
WOW! Look at that increase!

*Epilobium brunnescens* (New Zealand Willowherb) First Record: c. 1952

<table>
<thead>
<tr>
<th>Date</th>
<th>Tetrad Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>31/12/1999</td>
<td>68 tetrads</td>
</tr>
<tr>
<td>31/12/2009</td>
<td>193 tetrads</td>
</tr>
<tr>
<td>31/10/2019</td>
<td>436 tetrads</td>
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</table>
Hang on a minute....

*Succisa pratensis* (Devil's-bit Scabious)

First Record 1884

<table>
<thead>
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<th>Date</th>
<th>Tetrads</th>
</tr>
</thead>
<tbody>
<tr>
<td>31/12/1999</td>
<td>171</td>
</tr>
<tr>
<td>31/12/2009</td>
<td>363</td>
</tr>
<tr>
<td>31/10/2019</td>
<td>684</td>
</tr>
</tbody>
</table>
A casual inspection of distribution maps over time can lead to incorrect assessment of the spread of alien species.

Comparison of the distribution maps for the alien *Epilobium brunnescens* and the common and widespread native *Succisa pratensis* shows that an apparent increase in the alien can be explained by a change in recording methods, as the two species show a similar increase.

There is little reason to doubt that the recent increase in *Cortaderia richardii* (Early Pampas-grass) is real and many sites have only young plants. However, the apparent recent increase in *Crocosmia pottsii* (Potts’ Montbretia) is the result of it having been overlooked in the past.

There are more details in the accompanying notes, a few printed copies of which are available. An electronic version, which includes the items on this poster, is available as a pdf by e-mail from the author: suisnish@outlook.com or may be downloaded from a link here: http://www.users.waitrose.com/~suisnish/recording.html

Fresh specimens of *Crocosmia x crocosmiiflora* (Montbretia (*C. aurea x pottsii*)) and *Crocosmia pottsii* (Potts’ Montbretia) are provided for comparison. Even at this time of year the zigzag rhachis of the hybrid distinguishes it from the species.

Fresh specimens of *Cortaderia richardii* (Early Pampas-grass) and *Cortaderia selloana* (Pampas-grass) are also provided showing the differences in both inflorescence and leaves.

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These two show similar patterns....

_Crocus _potta _ii_ (Potts’ Montbretia)

First Record: 2009

<table>
<thead>
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<th>Date</th>
<th>Tetrads</th>
</tr>
</thead>
<tbody>
<tr>
<td>31/12/1999</td>
<td>0</td>
</tr>
<tr>
<td>31/12/2009</td>
<td>1</td>
</tr>
<tr>
<td>31/10/2019</td>
<td>27</td>
</tr>
</tbody>
</table>
...but they tell different stories

*Cortaderia richardii* (Early Pampas-grass)

No records

31/12/1999
0 tetrads

31/12/2009
7 tetrads

31/10/2019
35 tetrads
Cortaderia richardii near Temptation Hill, Raasay

Epilobium brunnescens sward, Healabhal Bheag, Skye