

The image shows a dense field of twinflower plants. The plants have thin, dark reddish-brown stems that droop downwards. They are covered with small, light green, rounded leaves. Numerous small, pink, bell-shaped flowers hang from the stems, some fully open and others as buds. The background is a mix of green foliage and some dry, yellowish-brown grass or twigs.

An Inventory of Twinflower in the Eastern Highlands

Richard Marriott





Site name (patch no)		Tentsmuir 1		Date	11/02/2019
Gps of site		NO 49799 27722		Accuracy	3m
Altitude	10m	Where gps taken	Mid patch		
Aspect		nil	Slope		0
Size of patch	N-S 159m ² E-W	19.6m 22.0m	Linnaea flowers present?		-
% Cover trees ca 100 yr old pine		50	% Cover herbs (inc Linnaea)		20
% Cover shrubs		<1	% Cover grass & sedge		5?
% Cover pleurocarpus mosses		100	% Cover Sphagnum		0
Height of heather		30cm?	% Cover Polytrichum		<1
Plant species associated with the <i>Linnaea</i> and/or NVC if known:					
<i>Calluna vulgaris</i> , <i>Dryopteris dilatata</i> , <i>Potentilla erecta</i> , <i>Goodyera repens</i> , <i>Galium saxatile</i> , <i>Juncus conglomeratus</i> , <i>Juncus effusus</i> , <i>Anthoxanthum odoratum</i> , <i>Dryopteris affinis</i>					
Small saplings of <i>Pinus sylvestris</i> , <i>Betula pendula</i> and <i>Ilex aquifolium</i>					
<i>Hylocomium splendens</i> , <i>Pleurozium schreberi</i> (latter dominant)					
Photo?	yes	Gps photo taken from	NO 49810 27726		
altitude	10m	Accuracy	5m		
Recorder(s)	R.W.Marriott, J.C.Turner, L.Downie				



Photo taken from NO 49810 27726 acc 5m looking WSW

Eastern Highlands *Linnaea borealis* patches Summary by Vice County

Vice County	VC no	Number of patches	Number recorded
(Banff)	94	1+	1
North Aberdeenshire	93	6	0
South Aberdeenshire	92	115	98 (87 +11)
Kincardineshire	91	2	2
Angus	90	4	4
East Perthshire	89	2	2
Fife & Kinross	85	3	3
Total		133	110



**Collecting samples for
genetic analysis to
determine if more than one
clone present**



Feith Laoigh 2009 to 2018

Feith Laoigh *Linnaea borealis* lower patch photos 2009 to 2018



Fig. 1 Scanned photo from Green and MacDonald (2009) This shows the lower of the two *Linnaea* patches recorded by them. The patch is described as 5m x 5m, the open oval is presumably a centroid position.



Fig. 2 Photo taken by Richard Marriott 15/7/18. The dashed red line shows approximately the same change in slope in both photos. The red **B** shows the same Birch sapling. The red oval in the lower photo represents the approximate centroid location of the former patch as shown by the open oval in 2009. The red **X** shows the location of the remaining remnant. Note that all the boulders in the 2009 photo have gone.

Photo taken from NJ 18409 04269 (6m acc) 566m alt

Feith Laoigh *Linnaea borealis* upper patch photos 2009 to 2018



Indicating the location of the smaller colony from the opposite bank.

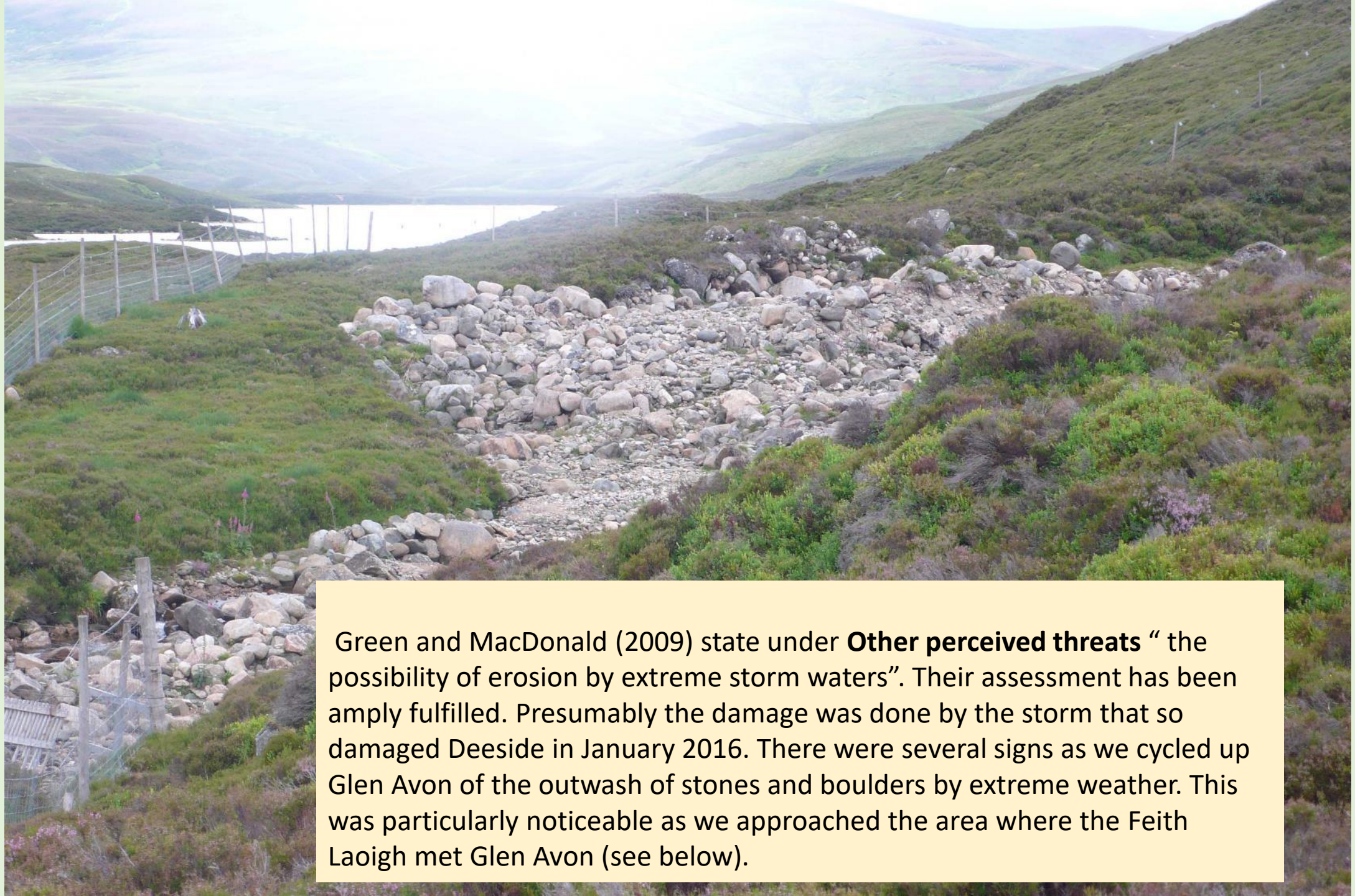
Fig.3 Scanned photo from Green and MacDonald (2009). This shows the upper of the two *Linnaea* patches recorded by them.



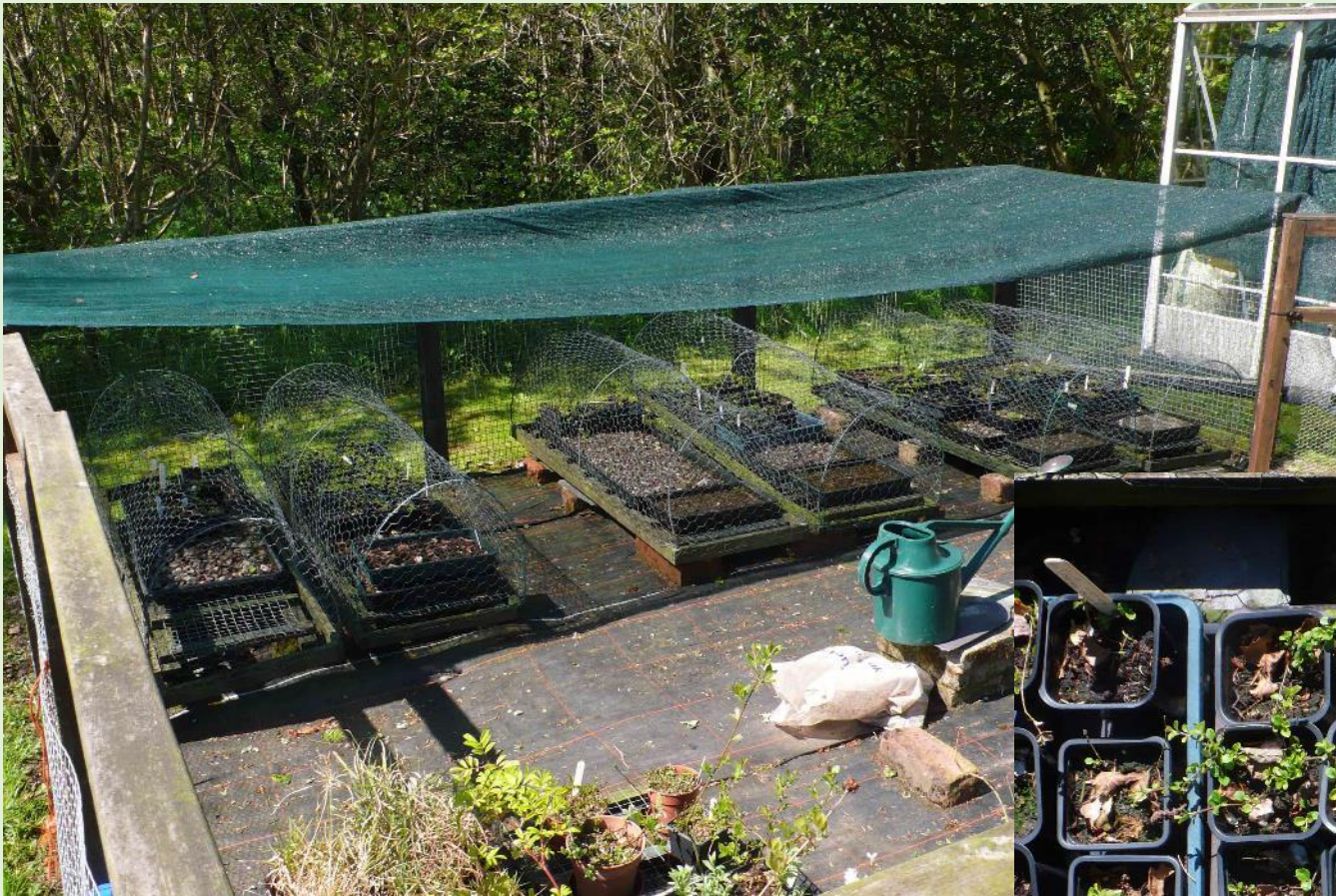
Fig.4 Photo taken by Richard Marriott 15/7/18. The red oval in the lower photo represents the approximate location of the former patch as shown by the open oval in 2009. The red and blue arrows point to the reference points in both photos. The long tree root exposed at the LHS starting with the red arrow continues to where the remnant is marked by an **X** in the 2018 photo of the lower patch (see previous page). Photo taken from NJ 18409 04269 (6m acc) 566m alt







Green and MacDonald (2009) state under **Other perceived threats** “ the possibility of erosion by extreme storm waters”. Their assessment has been amply fulfilled. Presumably the damage was done by the storm that so damaged Deeside in January 2016. There were several signs as we cycled up Glen Avon of the outwash of stones and boulders by extreme weather. This was particularly noticeable as we approached the area where the Feith Laoigh met Glen Avon (see below).



**Propagation of cuttings
from several clones to
set up new mixed clone
sites**



Crannach RSPB reserve 7th June 2013



Acknowledgements

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