

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



All photos © Caledonian Conservation Ltd



Chris Cathrine BSc(Hons) MCIEEM FLS FRES
Director, Caledonian Conservation Ltd
chris.cathrine@caledonianconservation.co.uk

Biological Records Centre Meeting of National Recording Schemes.
7 March 2020, Edinburgh.

Overview

- Summary of Projects
- Case Studies
- Key Messages



Published Reports

Cathrine, C., Norris, G., Wiswell, H., Gleed-Owen, C., Wilkinson, G., Willet, J. & Shanks, S. 2015. *Site Condition Monitoring of invertebrate features at 19 designated sites in Scotland. Scottish Natural Heritage Commissioned Report No. 872.* Scottish Natural Heritage, Inverness.

Cathrine, C., Foster, G., Norris, G. & Currie, N. 2020. *Site Condition Monitoring of beetle assemblage features at 11 designated sites in Scotland 2015. Scottish Natural Heritage Research Report No. 1115.* Scottish Natural Heritage, Inverness.

Cathrine, C., Norris, G., Falk, S., Gleed-Owen, C., Currie, N. & Gillen, C. 2020. *Site Condition Monitoring of invertebrate assemblage features at six designated sites in Scotland 2015. Scottish Natural Heritage Research Report No. 1118.* Scottish Natural Heritage, Inverness.

Foster, G., Cathrine, C & Norris, G. 2020. *Site Condition Monitoring of beetle assemblage features at eight designated sites in Scotland. Scottish Natural Heritage Research Report No. 1116.* Scottish Natural Heritage, Inverness.

<https://www.nature.scot/information-hub/information-library>

Unpublished Reports

Kirkland, P., Cathrine, C., Bairner, S., Macadam, C. & Willet, J. 2012. *Site Condition Monitoring of Invertebrate Assemblages at 10 Designated Sites in Scotland*. Scottish Natural Heritage, Inverness.

Cathrine, C. & Falk, S. 2018. *Site Condition Monitoring of Invertebrate Features at Fannich Hills and Torridon Forest Sites of Special Scientific Interest in 2017*. Scottish Natural Heritage, Inverness.

Other Information

Various other scientific publications and conference papers:

www.caledonianconservation.co.uk/publications

Data available on NBN Atlas:

<https://registry.nbnatlas.org/public/show/dp4>

SCM 2011-17

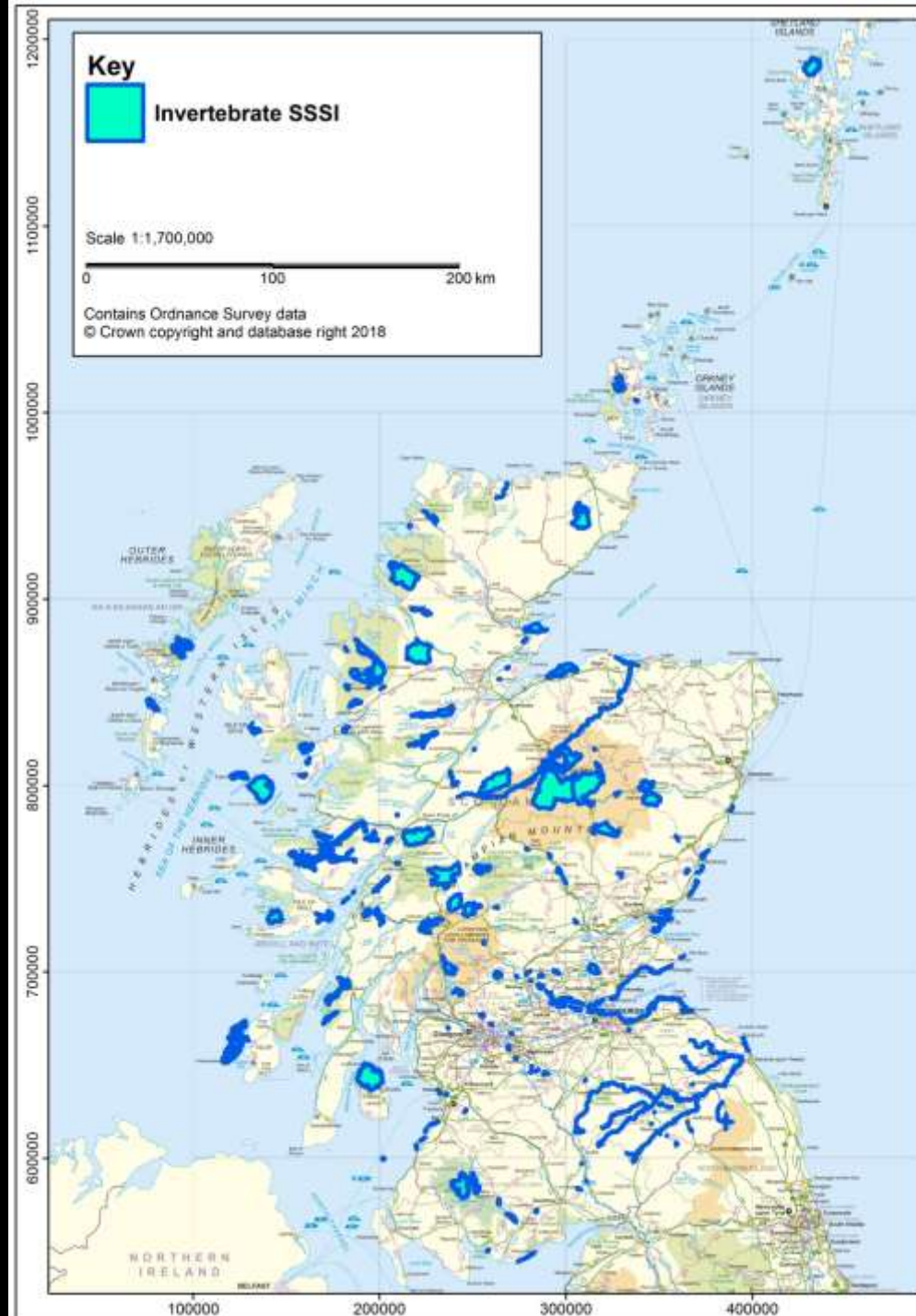
158 Invertebrate SSSIs



SCM 2011-17

158 Invertebrate SSSIs

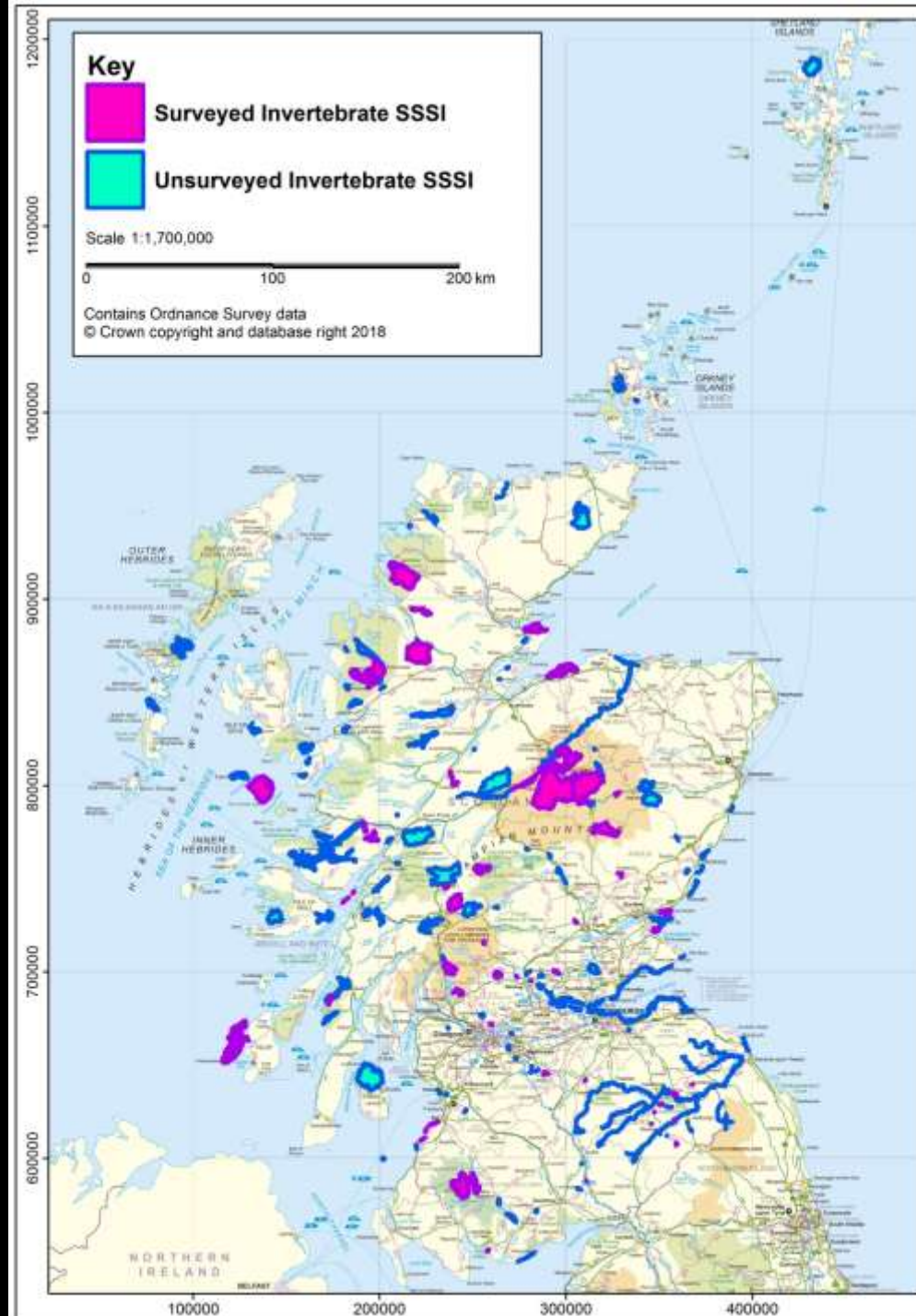
Littlewood, N.A. 2017. *A revision of invertebrate features of designated sites in Scotland. Scottish Natural Heritage Commissioned Report No. 1007.* Scottish Natural Heritage, Inverness.



SCM 2011-17

158 Invertebrate SSSIs

57 Site Survey Projects

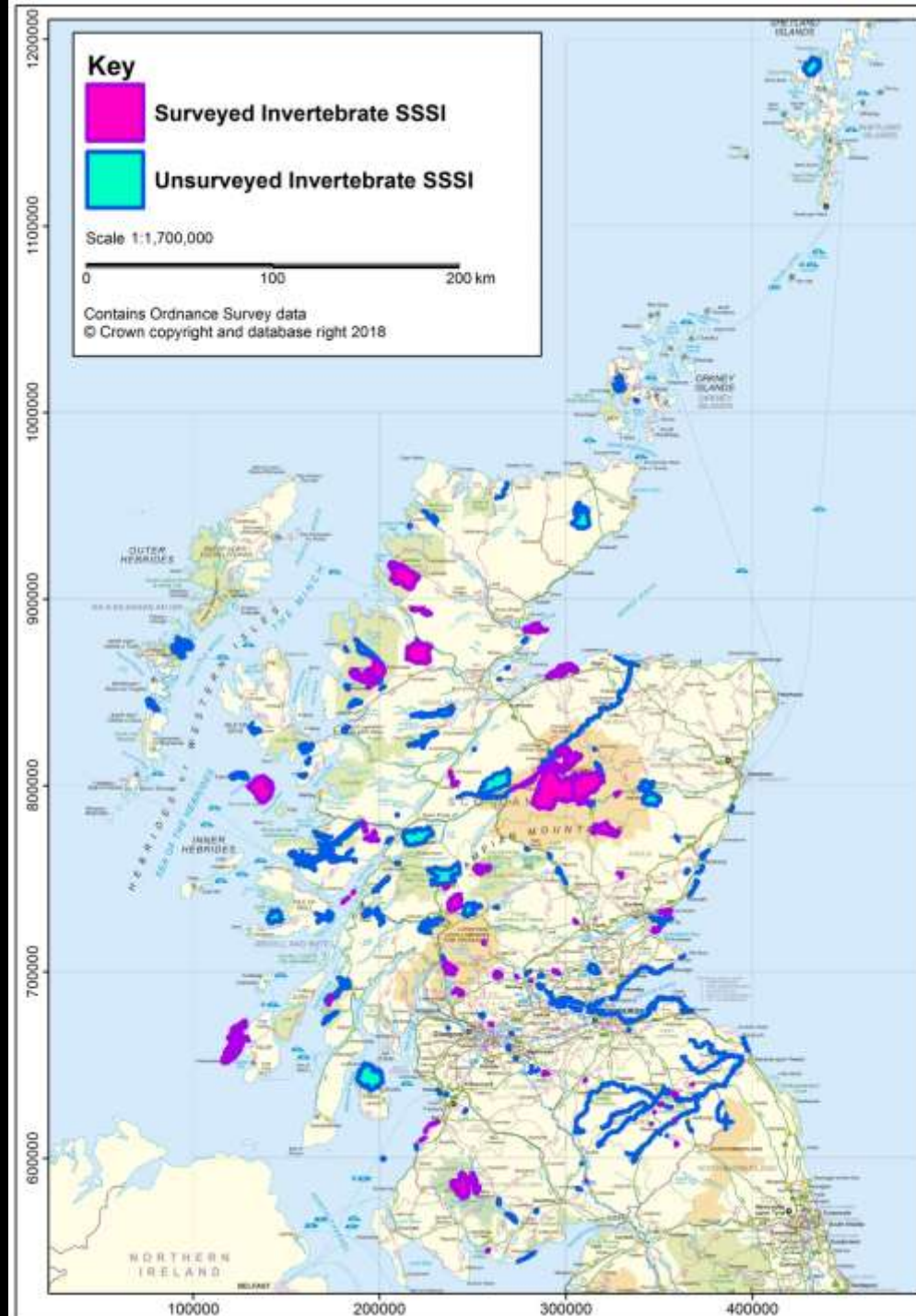


SCM 2011-17

158 Invertebrate SSSIs

57 Site Survey Projects

51 SSSIs



Data...

What?

Who?

- Data types:
 - Casual / anecdotal
 - Verified
 - Detailed
 - Population
 - Movements / behaviour
 - Protected sites
 - Broad habitats
 - Detailed habitats
- Source:
 - NBN, LRC, NGO
 - Recording Scheme
 - Research
 - Research
 - Research
 - SNH, Recording Scheme
 - SNH (IHN)
 - SNH (NVC)

Considerations & Limitations

- Permissions

Considerations & Limitations

- Permissions
 - OGL
 - CC0
 - CC BY
 - CC BY-SA
 - CC BY-NC

Considerations & Limitations

- Permissions
 - OGL
 - CC0
 - CC BY
 - **CC BY-SA**
 - CC BY-NC

Considerations & Limitations

- Permissions
 - OGL
 - CC0
 - CC BY
 - **CC BY-SA**
 - ~~CC BY-NC~~

Considerations & Limitations

- Permissions
- Accuracy

Considerations & Limitations

- Permissions
- Accuracy
- Resolution:
 - High enough for purpose?

Considerations & Limitations

- Permissions
- Accuracy
- Resolution:
 - High enough for purpose?
 - Confidentiality / sensitivity

Considerations & Limitations

- Permissions
- Accuracy
- Resolution:
 - High enough for purpose?
 - Confidentiality / sensitivity
- Under-recorded groups

Considerations & Limitations

- Permissions
- Accuracy
- Resolution:
 - High enough for purpose?
 - Confidentiality / sensitivity
- Under-recorded groups

**ABSENCE OF RECORDS DOES NOT
DEMONSTRATE ABSENCE OF PRESENCE**

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



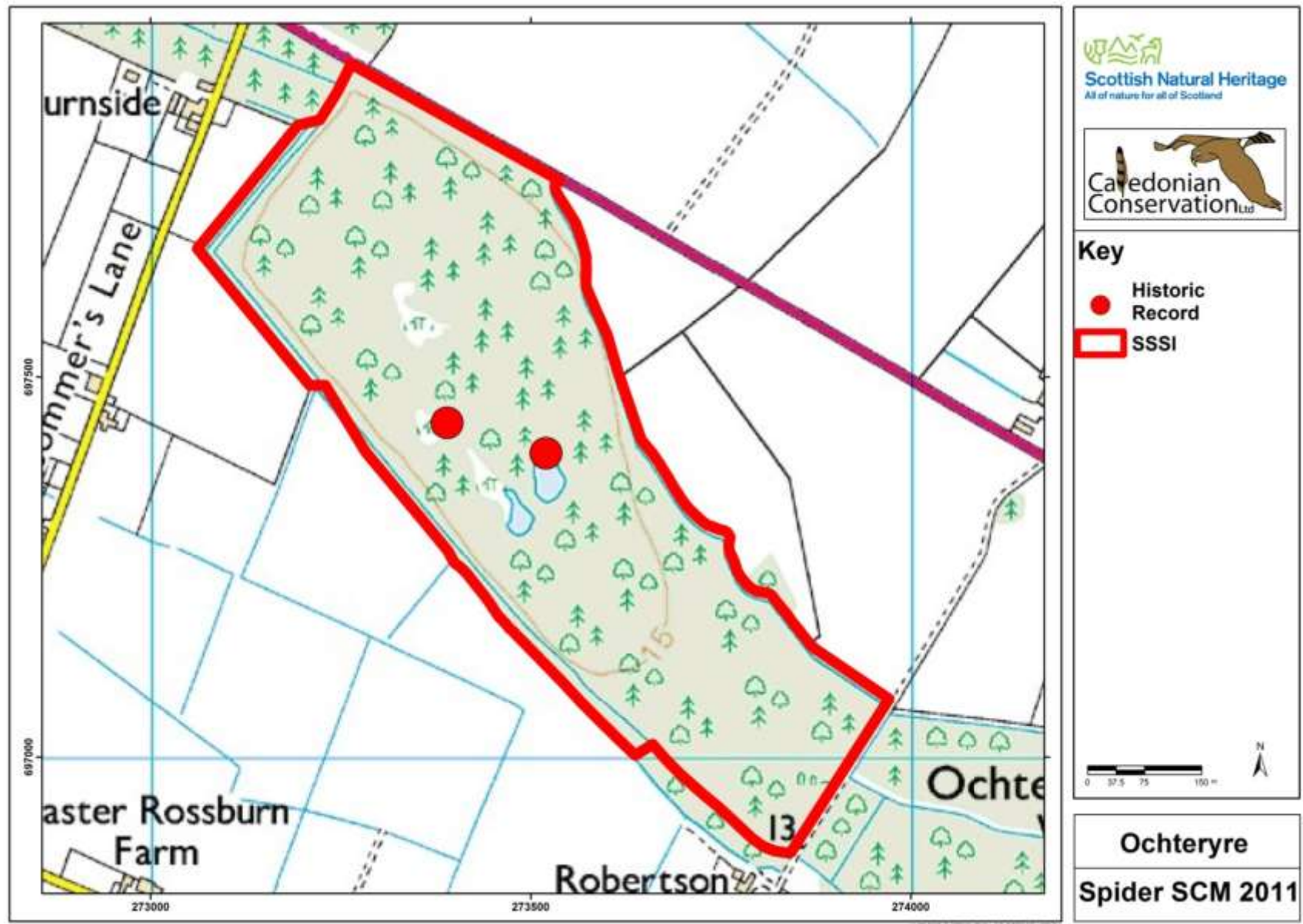
Ochertyre Moss 2011

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland

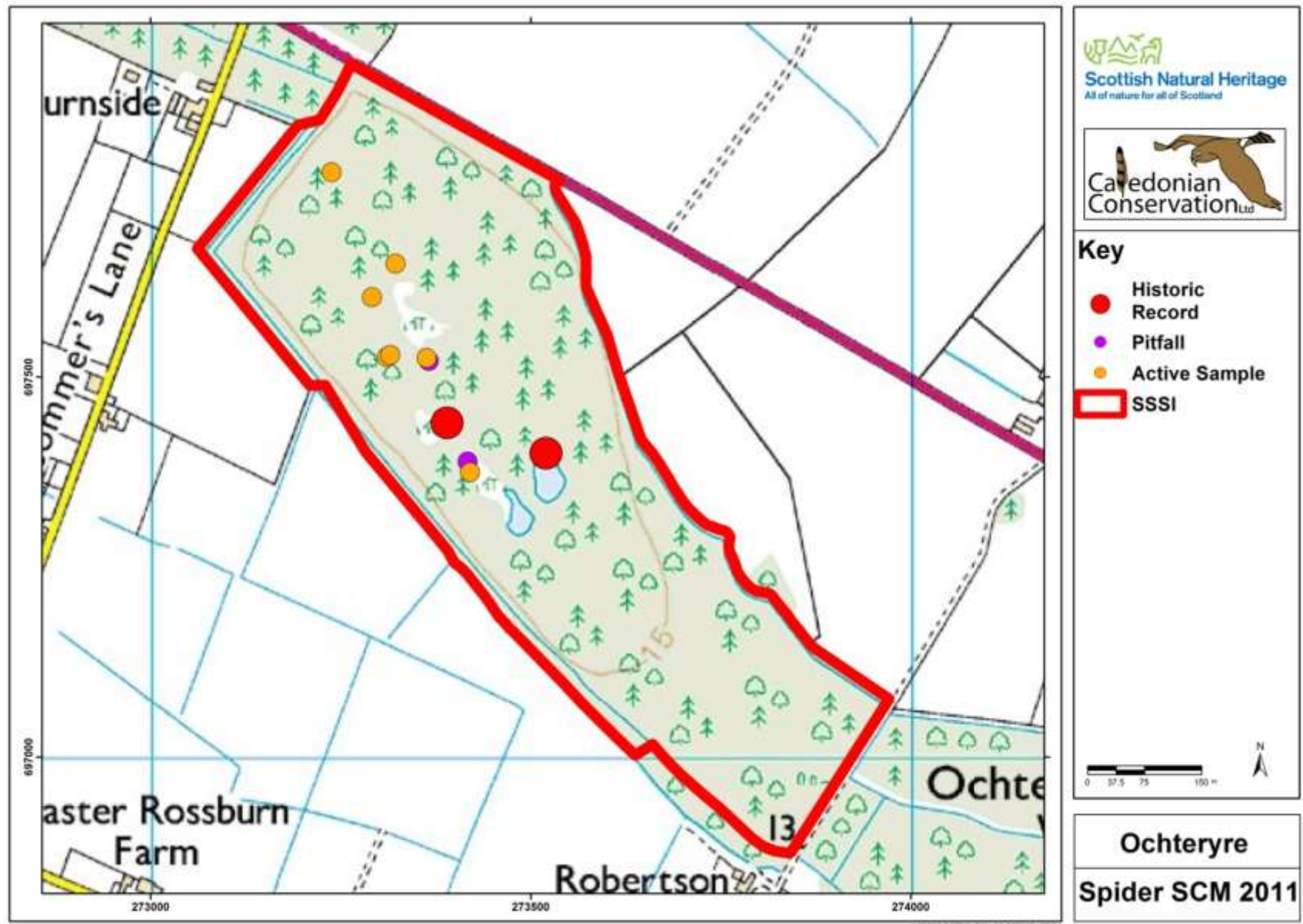
Heliophanus dampfi



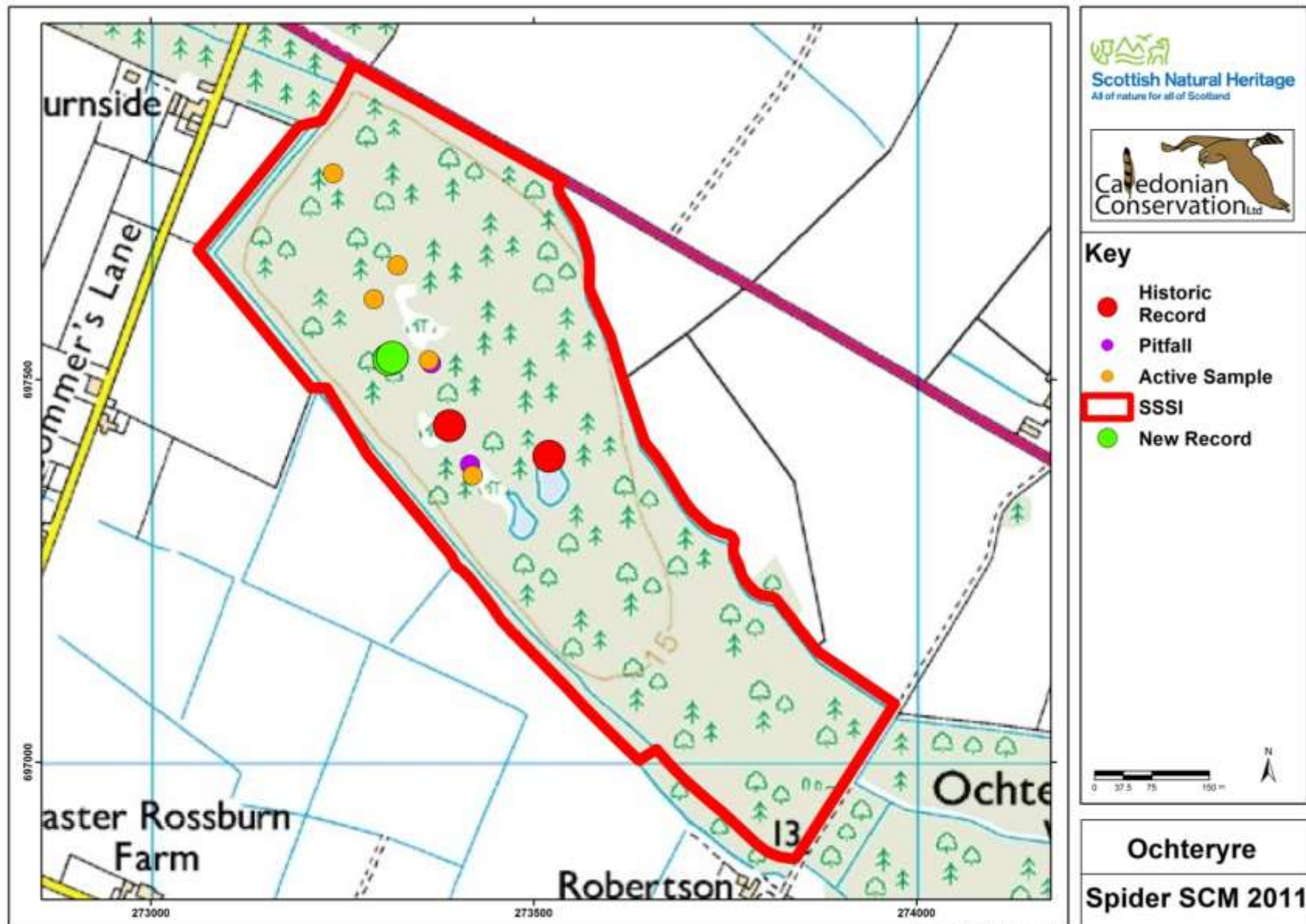
Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland

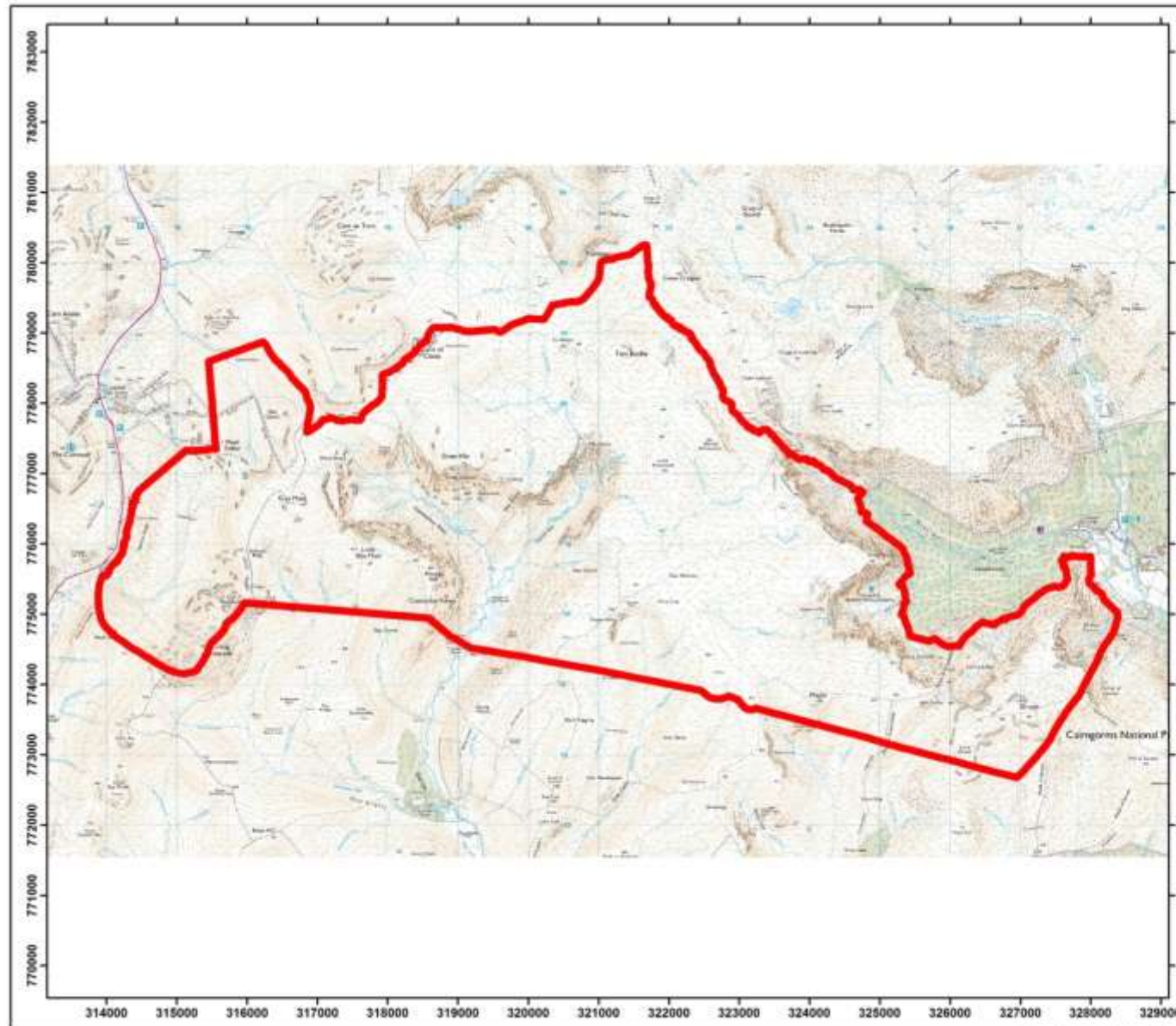


Caenlochan 2011

Mecynargus paetulus – Scottish mountain-spider

- RDB2
- Elevations above 850m
- Associated with *Nardus strictus* matt grass snow-bed habitats
- ♂ ♀ May & September

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



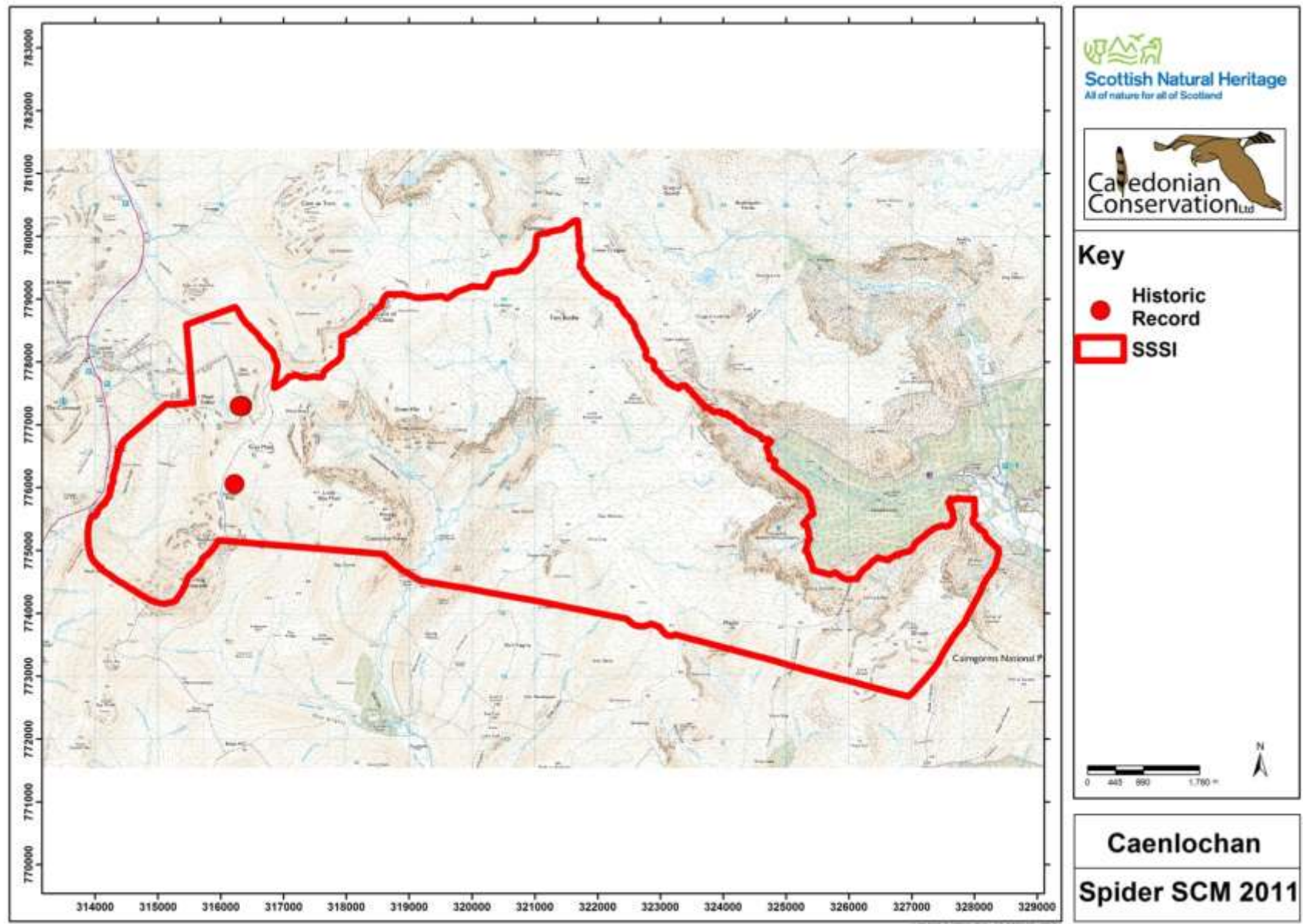
Key

 SSSI

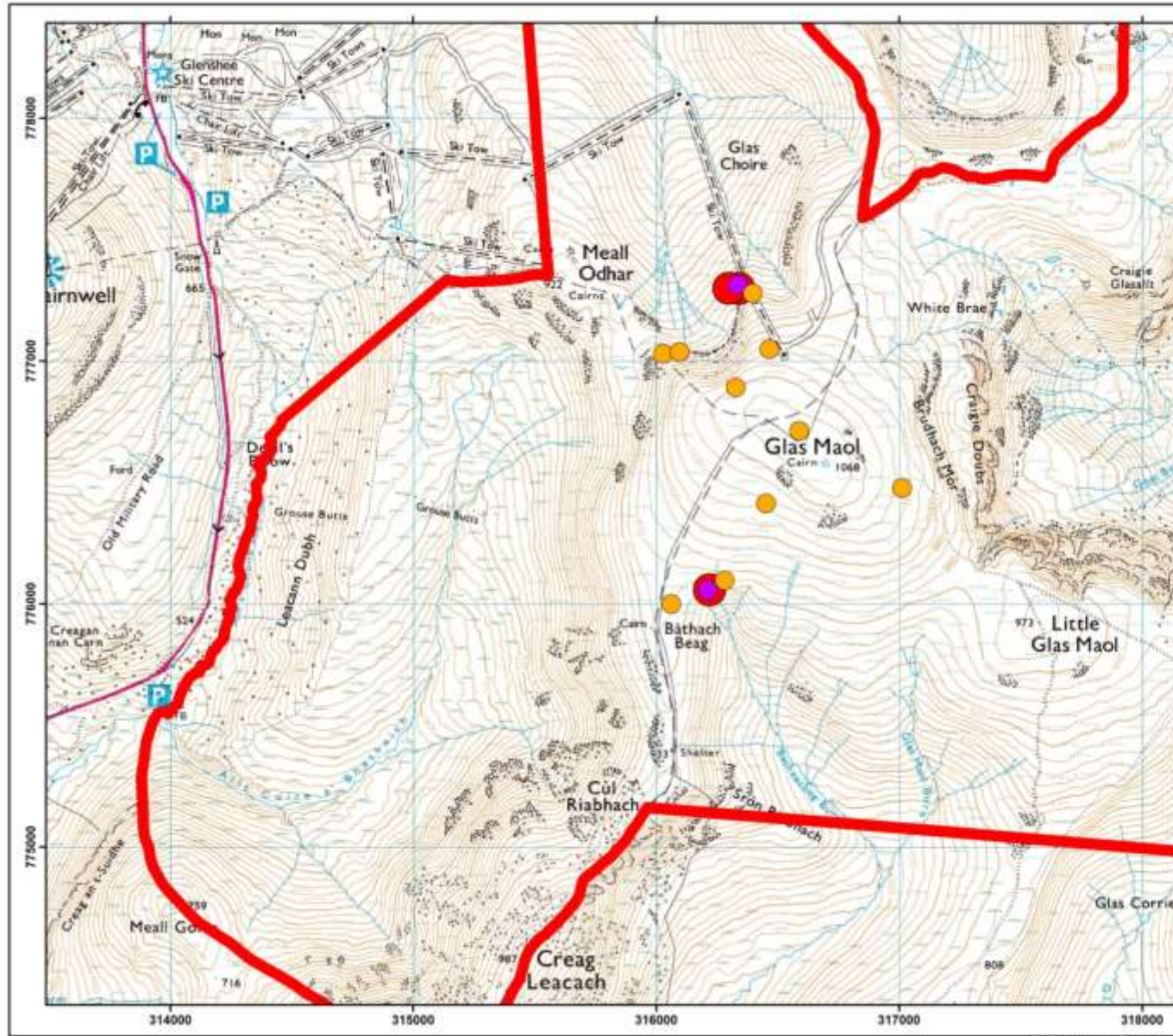


Caenlochan
Spider SCM 2011

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



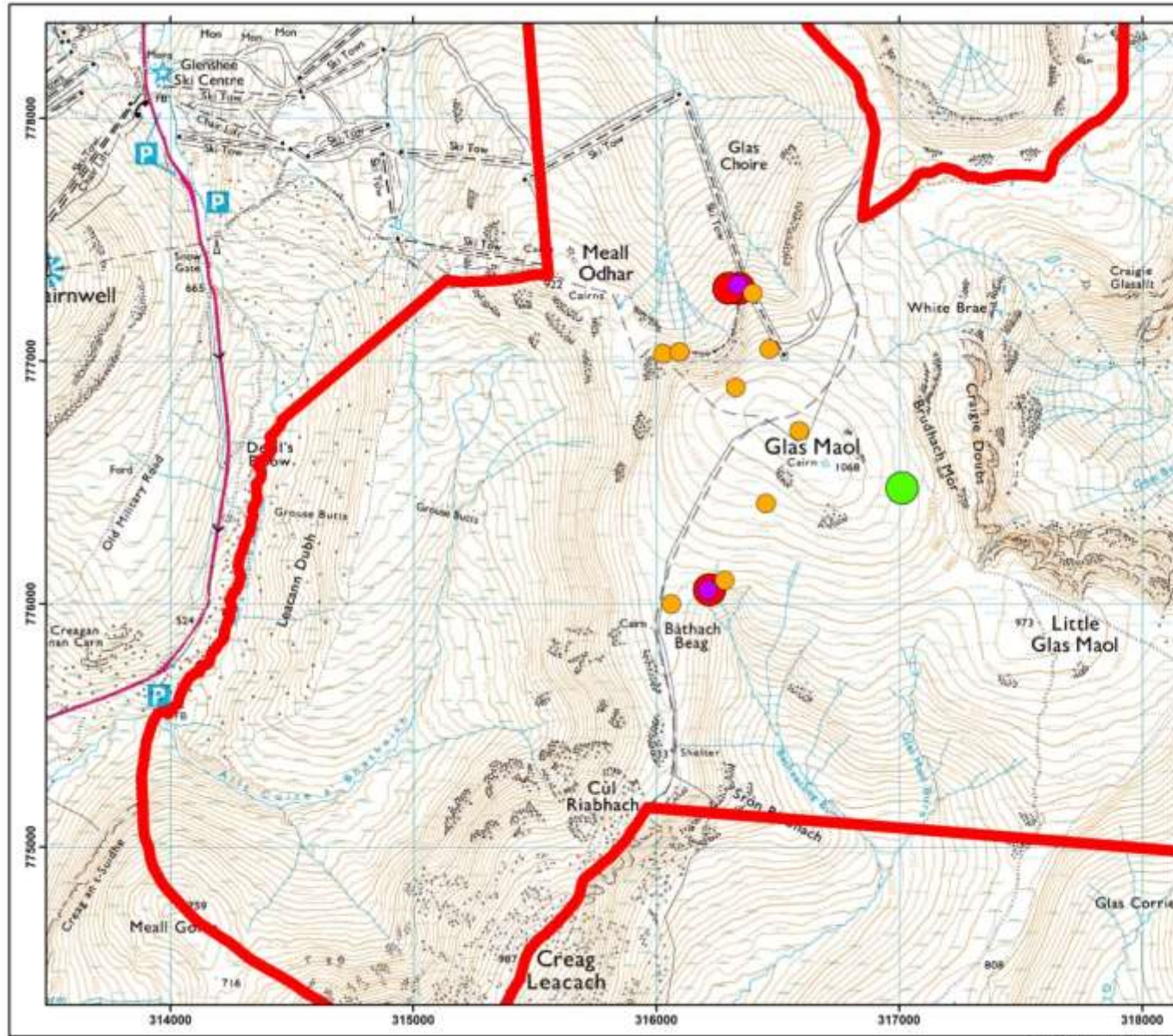
Key

- Pitfall
- Active Sample
- Historic Record
- SSSI



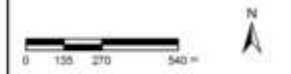
Caenlochan
Spider SCM 2011

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Key

- Pitfall
- Active Sample
- Historic Record
- SSSI
- New Record



Caenlochan
Spider SCM 2011

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland

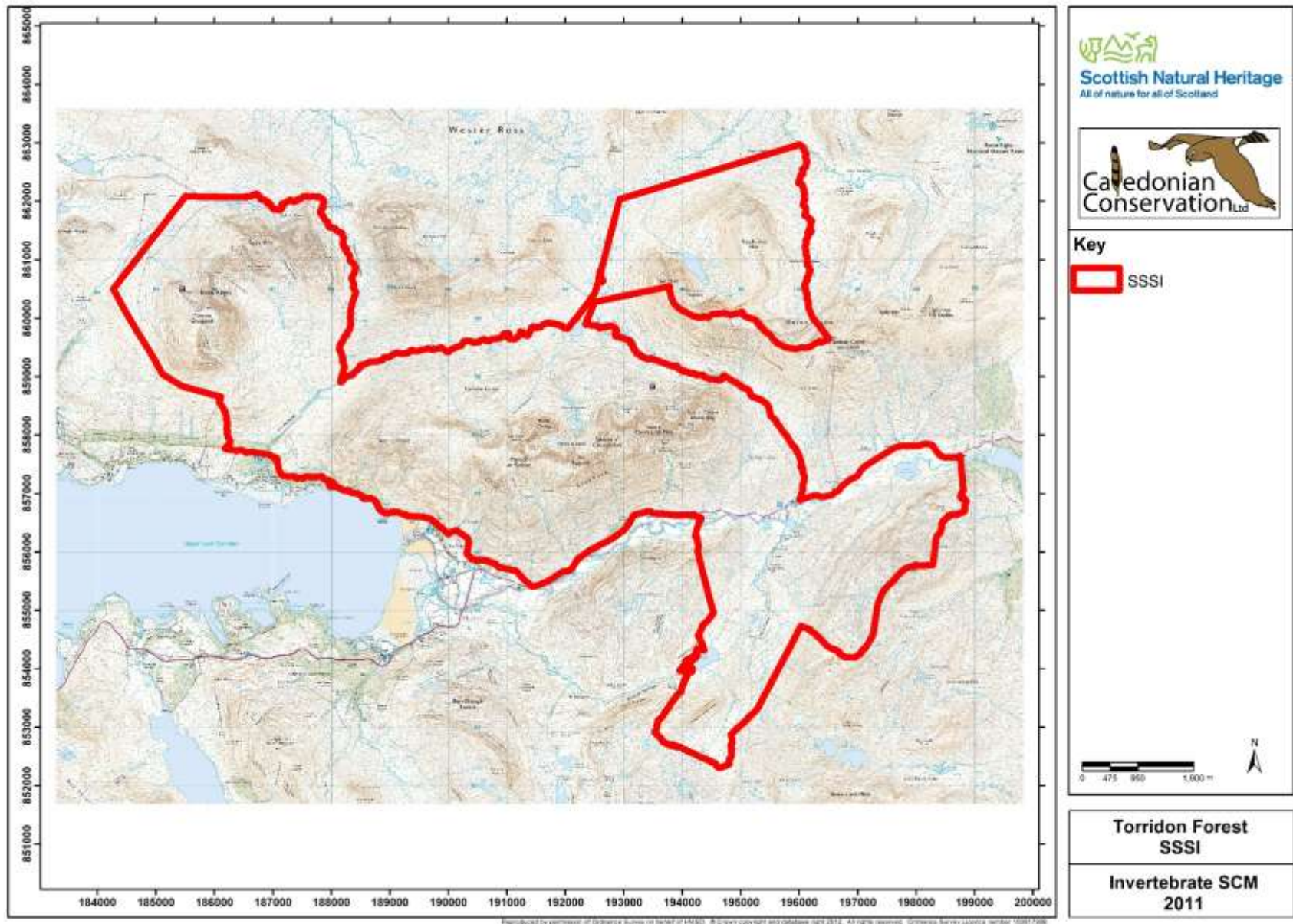


SCM 2011-17



Torridon Forest 2017

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Browser tabs: Inbox (1,826) - chri... Caledonian Conser... hmrc month 9 - G... HMRC: Current po... NBN Gateway - Int... Site Information... The toughest day... You

Secure | <https://data.nbn.org.uk/imt/?mode=SPECIES&species=NBNSYS0000022413#0-5.531,57.517,-4.948,57.669|G94pWju,eE69U>

Add species, habitats and site boundaries to the map

Legend Datasets **Records** Redraw Selection

Phratora polaris 1km presence records

Search within these results:

Taxon Name	Organisation	Location	Site Name	Start Date	End Date	Recorder
Phratora polaris Schneider, 1886	Seed and Leaf Beetle Recording Scheme	NG9659	Beinn Eighe			Morris
Phratora polaris Schneider, 1886	Seed and Leaf Beetle Recording Scheme	NG95	Sgurr Mohr	1982-06-01	1982-06-30	Owen, Prof J.A.
Phratora polaris Schneider, 1886	Scottish Natural Heritage	NG9862	Beinn Eighe NNR	1987-01-01	1987-12-31	Unknown
Phratora polaris Schneider, 1886	Scottish Natural Heritage	NG9862	Beinn Eighe NNR	1967-01-01	1967-12-31	Unknown
Phratora polaris Schneider, 1886	Scottish Natural Heritage	NG9561	Ruadh-stac Mor	1966-01-01	1966-12-31	Unknown
Phratora polaris Schneider, 1886	Scottish Natural Heritage	NG9561	Ruadh-stac Mor	1966-01-01	1966-12-31	Unknown
Phratora polaris Schneider, 1886	Scottish Natural Heritage	NG9561	Ruadh-stac Mor	1967-01-01	1967-12-31	Unknown
Phratora polaris Schneider, 1886	Seed and Leaf Beetle Recording Scheme	NG951609	Ruadh-stac Mor	2000-07-11	2000-07-11	Harrison, T.D.

Showing 1 to 8 of 8 entries

site1550-doc1.pdf Developing EcIA L...doc Caledonian Conser....pdf

Show all

11:33 09/02/2017

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland

www.markgtelfer.co.uk/beetles/phratora-polaris/

Mark Telfer's Website

Beetles, Pan-species Listing, all-round natural history. Britain, Ireland and abroad.

[Home](#) [Identifying beetles](#) [Pan-species Listing](#) [Contact](#)

Search



[Home](#) » [Beetles](#) » The toughest day of 2010: Phratora polaris

Recent Posts

["How many firsts for Britain have you found, Mark?"](#)

[A new Sunshiner](#)

[This website is back!](#)

[Acrotona pseudotenera](#)

[Ponking](#)

Recent Comments

DAVE HEMINGWAY on [The](#)

['immaculate' collection](#)

Clive Washington on

[Euaesthetinae, Oxyporinae,](#)

The toughest day of 2010: Phratora polaris

By admin in [Beetles](#), [Plants](#) on December 19, 2011.

24th June 2010: day three of my Scottish fieldwork campaign was to be a change from surveying for saproxylic beetles in woodland. I was headed to the summit plateau of [Ruadh-stac Mòr](#), [Beinn Eighe](#) where Mike Morris (1970) discovered the leaf-beetle *Phratora polaris* new to Britain in 1966. Ruadh-stac Mòr lies within the massive (5,800 hectares) Torridon Forest SSSI.



Categories

[Ants](#)
[Arachnida](#)
[Bees](#)
[Beetles](#)
[Birds](#)
[Bugs](#)
[Centipedes](#)
[Cockroaches](#)
[Dragonflies](#)
[Earthworms](#)
[Earwigs](#)
[Fatworms](#)
[Flies](#)
[Fungi](#)
[Galls](#)

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



© Steven Falk

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



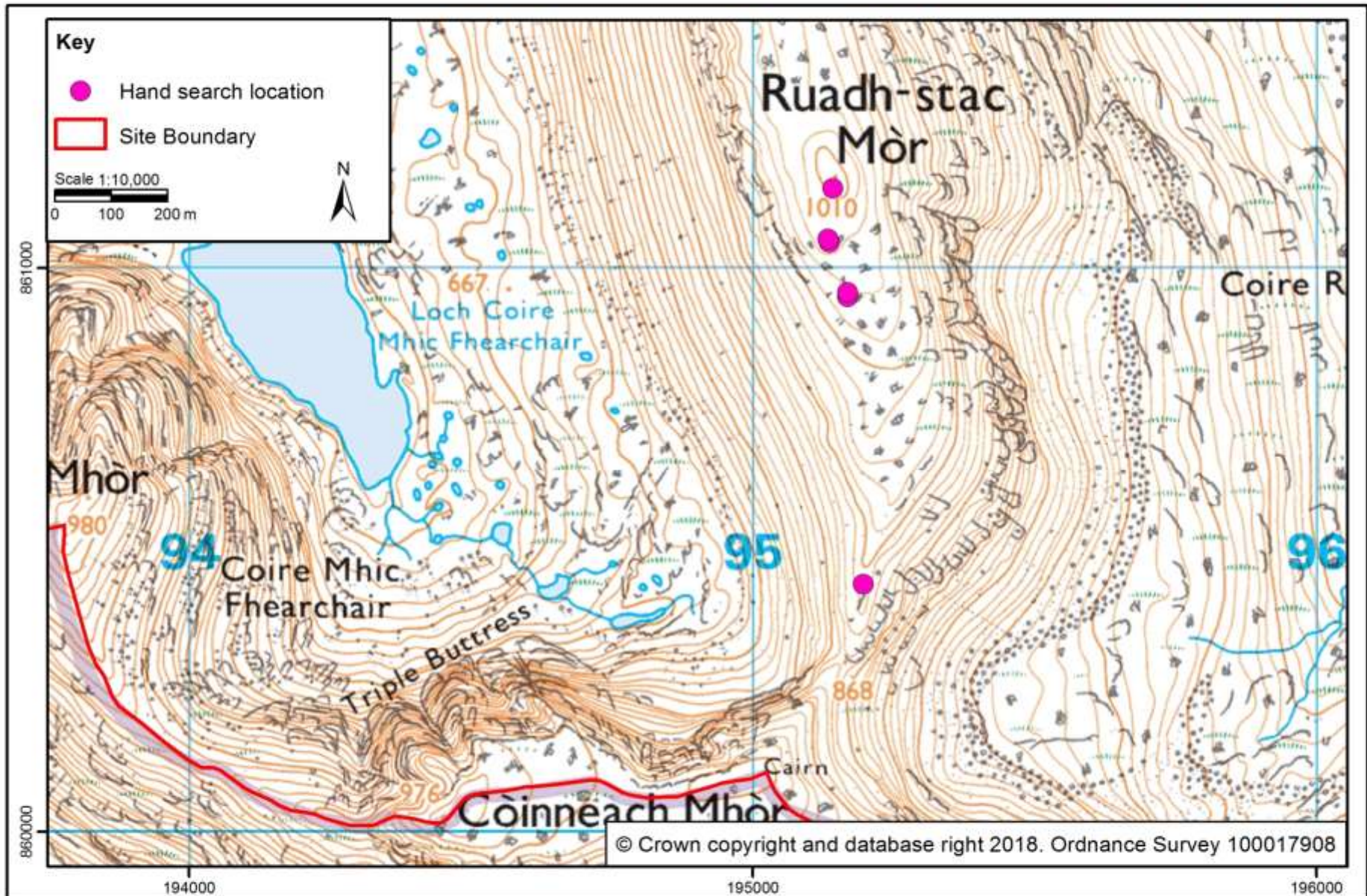
Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



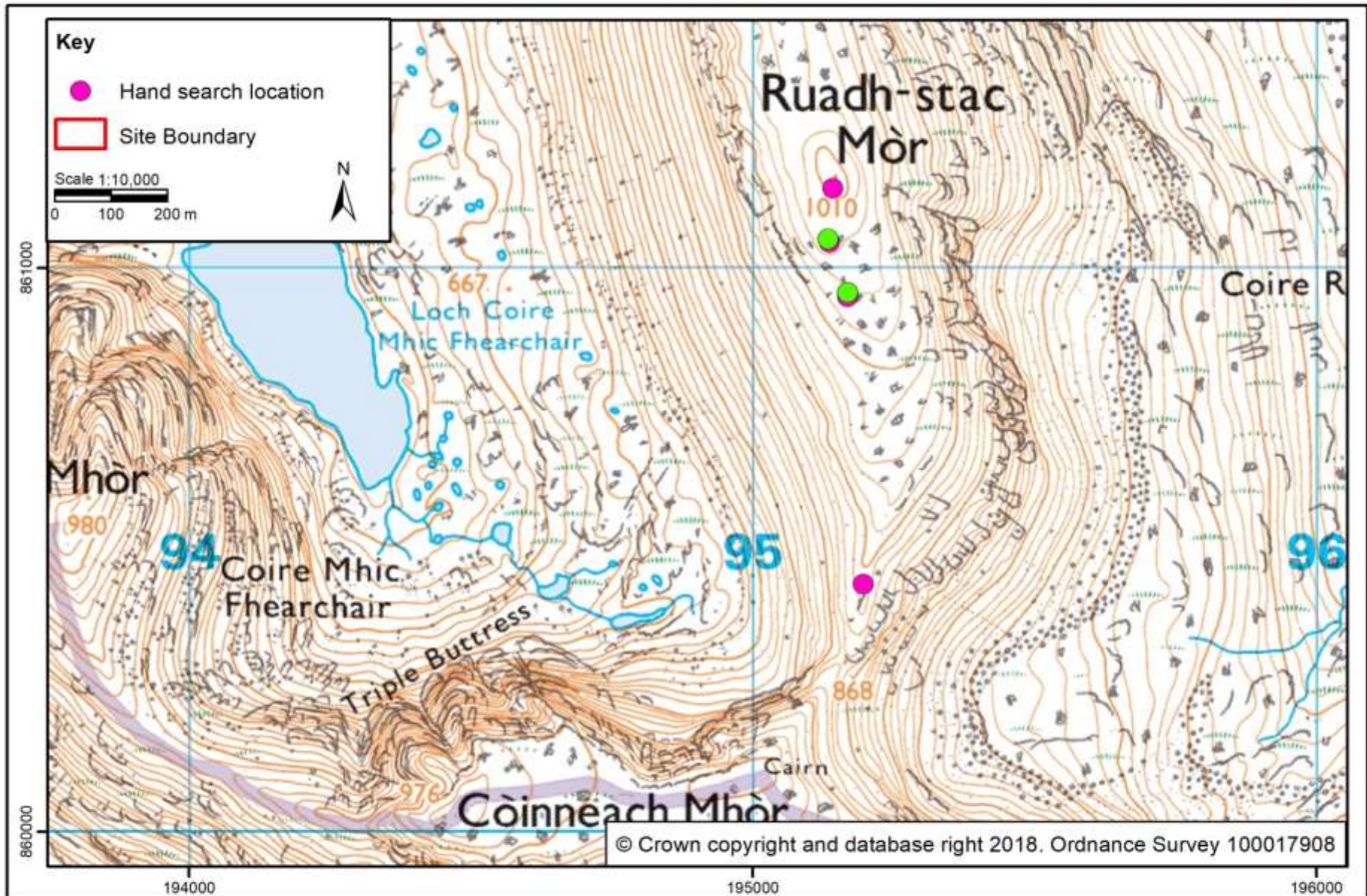
Phratora polaris



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland

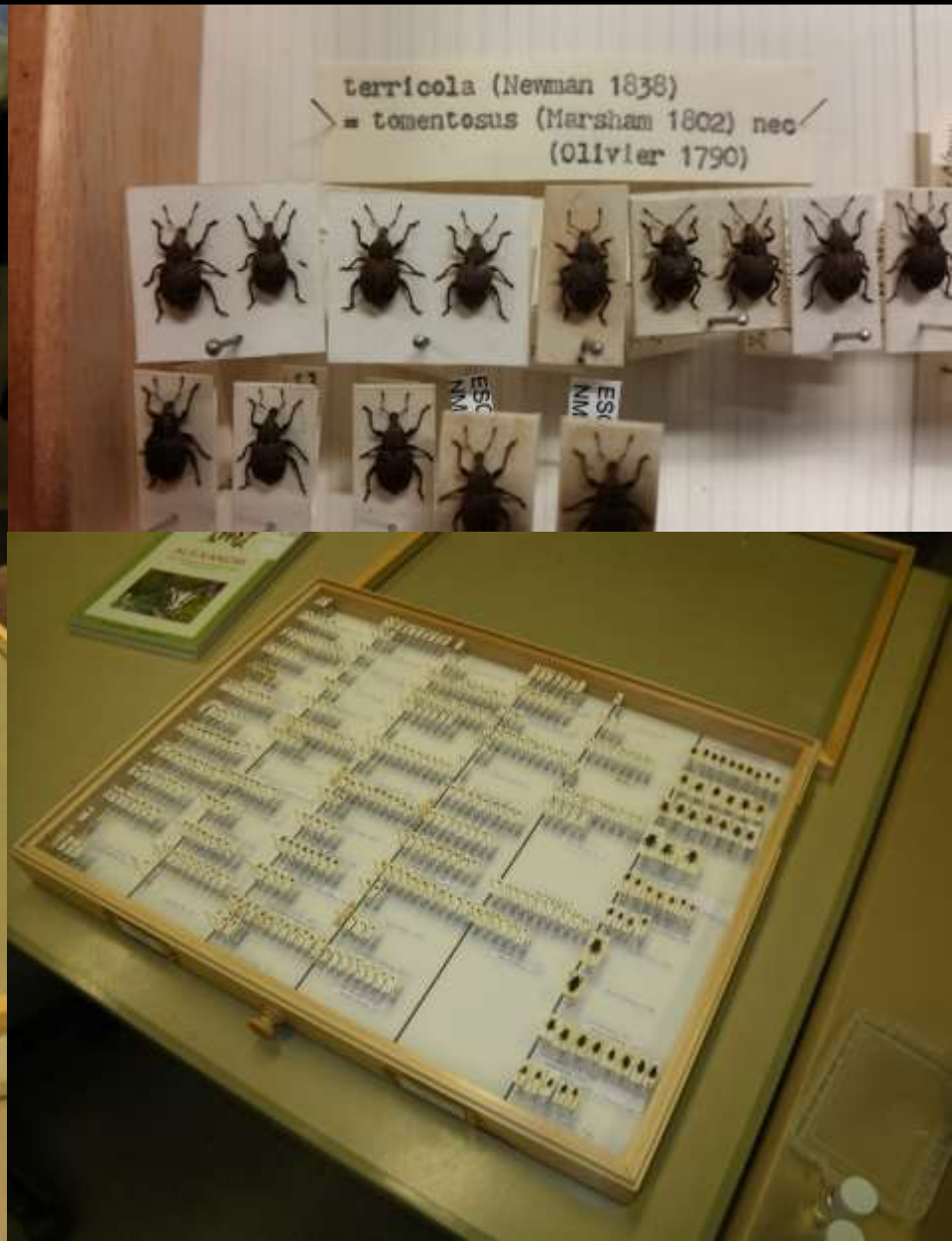


Phratora polaris



Stenus glacialis

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Barry Links 2011

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



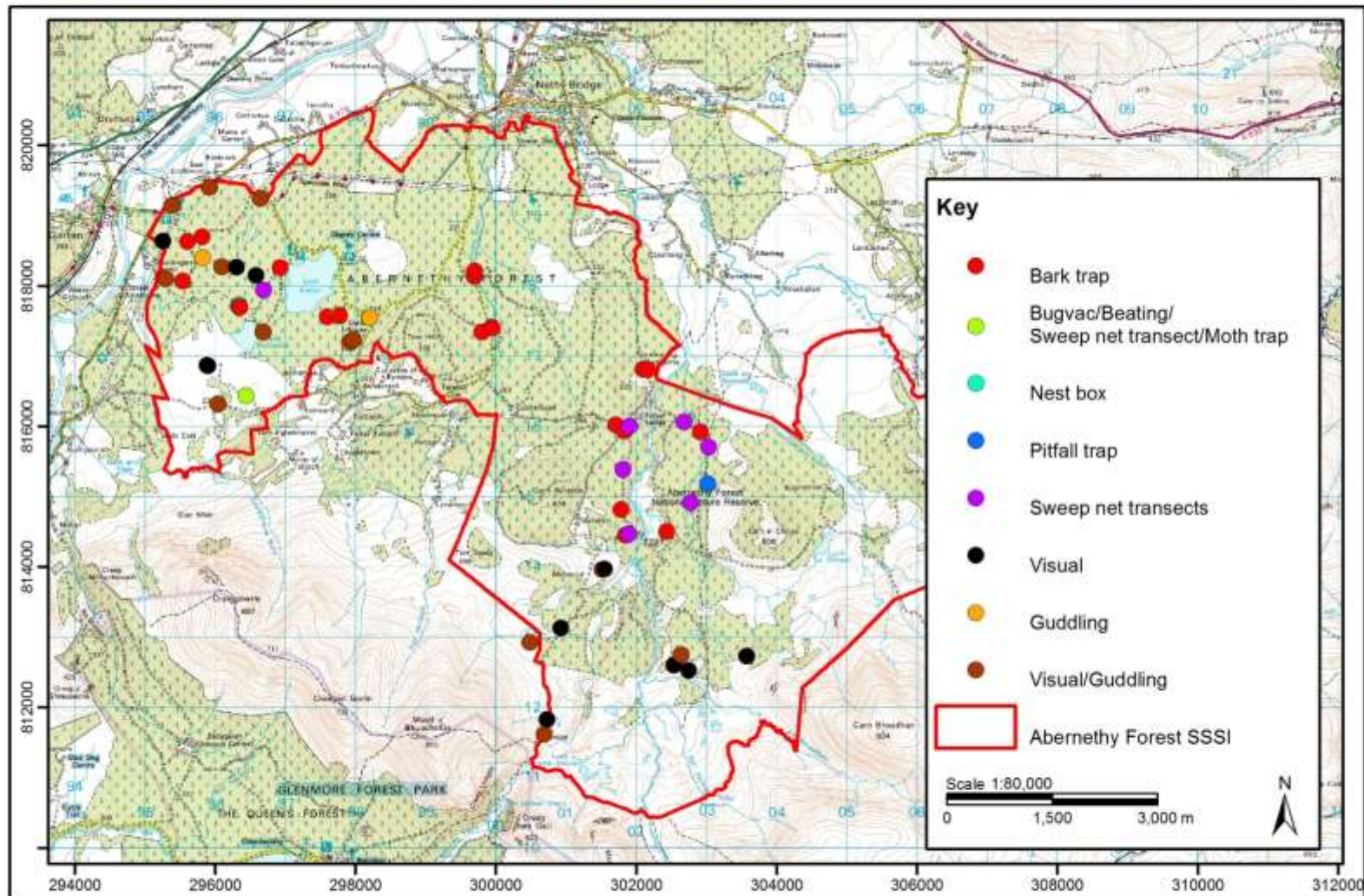
Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Abernethy Forest 2013

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland

Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2014. All rights reserved. Ordnance Survey Licence number 100017908.



Abernethy Forest: Sample Locations

Abernethy Forest (57.9km²)

- Feature poorly defined in citation
- Used unpublished SNH dossier of invertebrate records from site to target surveys
- Included:
 - Araneae
 - Coleoptera
 - Hemiptera
 - Hymenoptera
 - Lepidoptera
 - Odonata

Abernethy Forest (57.9km²)

- Feature poorly defined in citation
- Used unpublished SNH dossier of invertebrate records from site to target surveys
- Included:
 - **Araneae**
 - Coleoptera
 - Hemiptera
 - Hymenoptera
 - Lepidoptera
 - Odonata

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Clubiona subsultans

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



COMMISSIONED REPORT

Commissioned Report No. 784

A survey of the mason bee *Osmia uncinata* in Caledonian pine woodlands and evaluation of its status in 2006-07

For further information on this report please contact:

Athayde Tonhasca
Scottish Natural Heritage
Battleby
Perth
PH1 3EW
Telephone: 01738 458671
E-mail: athayde.tonhasca@snh.gov.uk

This report should be quoted as:

Sears, J., Amphlett, A., Macdonald, M. & Taylor, S. 2014. A survey of the mason bee *Osmia uncinata* in Caledonian pine woodlands and evaluation of its status in 2006-07. Scottish Natural Heritage Commissioned Report No. 784.

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



North Rothiemurchus Pinewood 2013

North Rothiemurchus Pinewood (15.1km²)

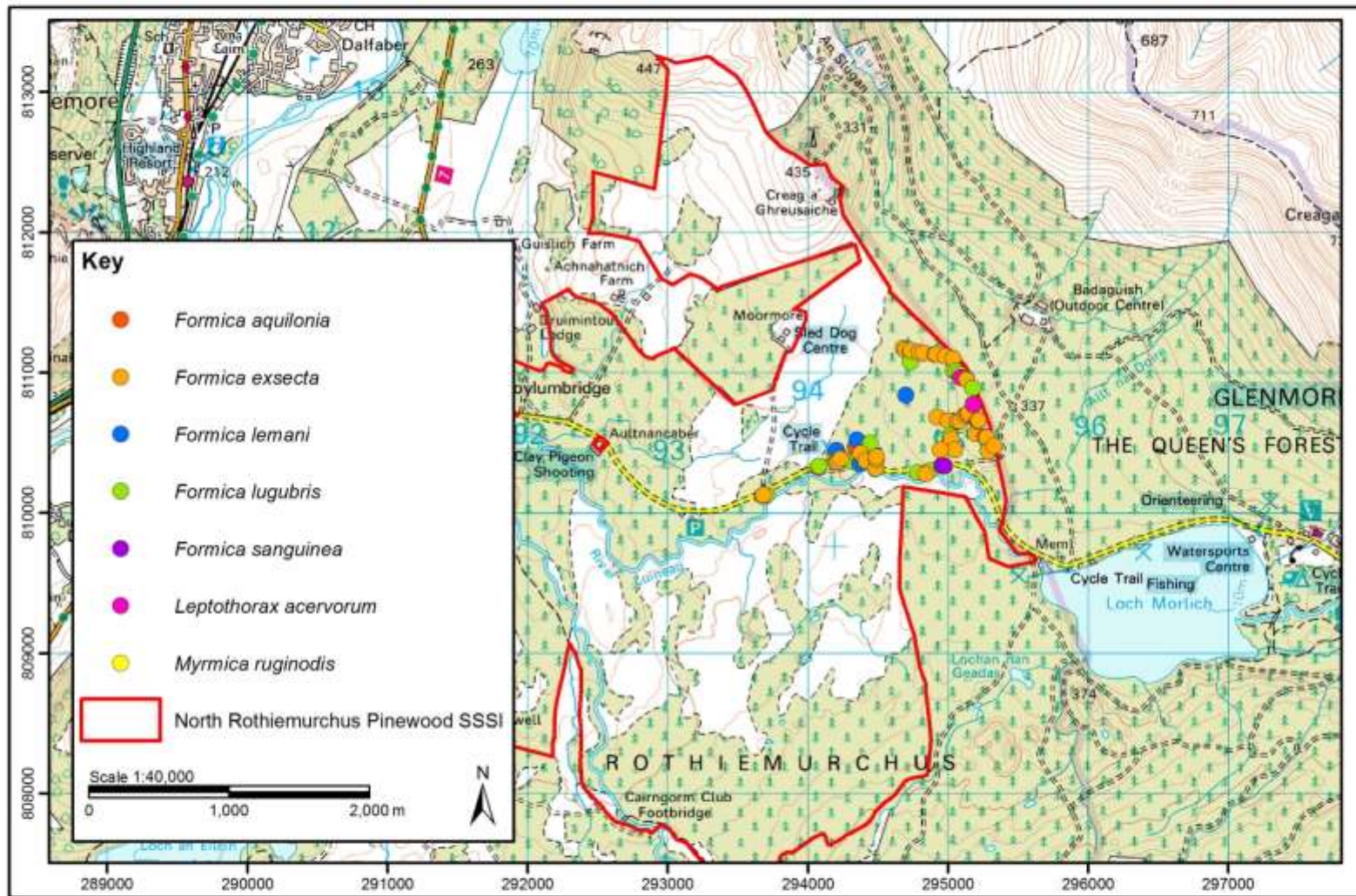
- Includes:
 - Araneae (*Clubiona subsultans*)
 - Coleoptera (*Dryops nitidulus*, *Hydrochus brevis*)
 - Hymenoptera (*Formica exsecta*, *Osmia uncinata*)
 - Odonata (Northern damselfly)

North Rothiemurchus Pinewood (15.1km²)

- Includes:
 - Araneae (*Clubiona subsultans*)
 - Coleoptera (*Dryops nitidulus*, *Hydrochus brevis*)
 - Hymenoptera (***Formica exsecta***, *Osmia uncinata*)
 - Odonata (Northern damselfly)

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland

Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2014. All rights reserved. Ordnance Survey Licence number 100017908.



North Rothiemurchus Pine Wood: Wood Ant Nests

North Rothiemurchus – Results: Hymenoptera

- Re-found *Formica exsecta*
- 45 nests found (less than 52 found by Gus Jones survey in 1996-97)
- Shading rendering habitat less suitable
- Development pressures

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland

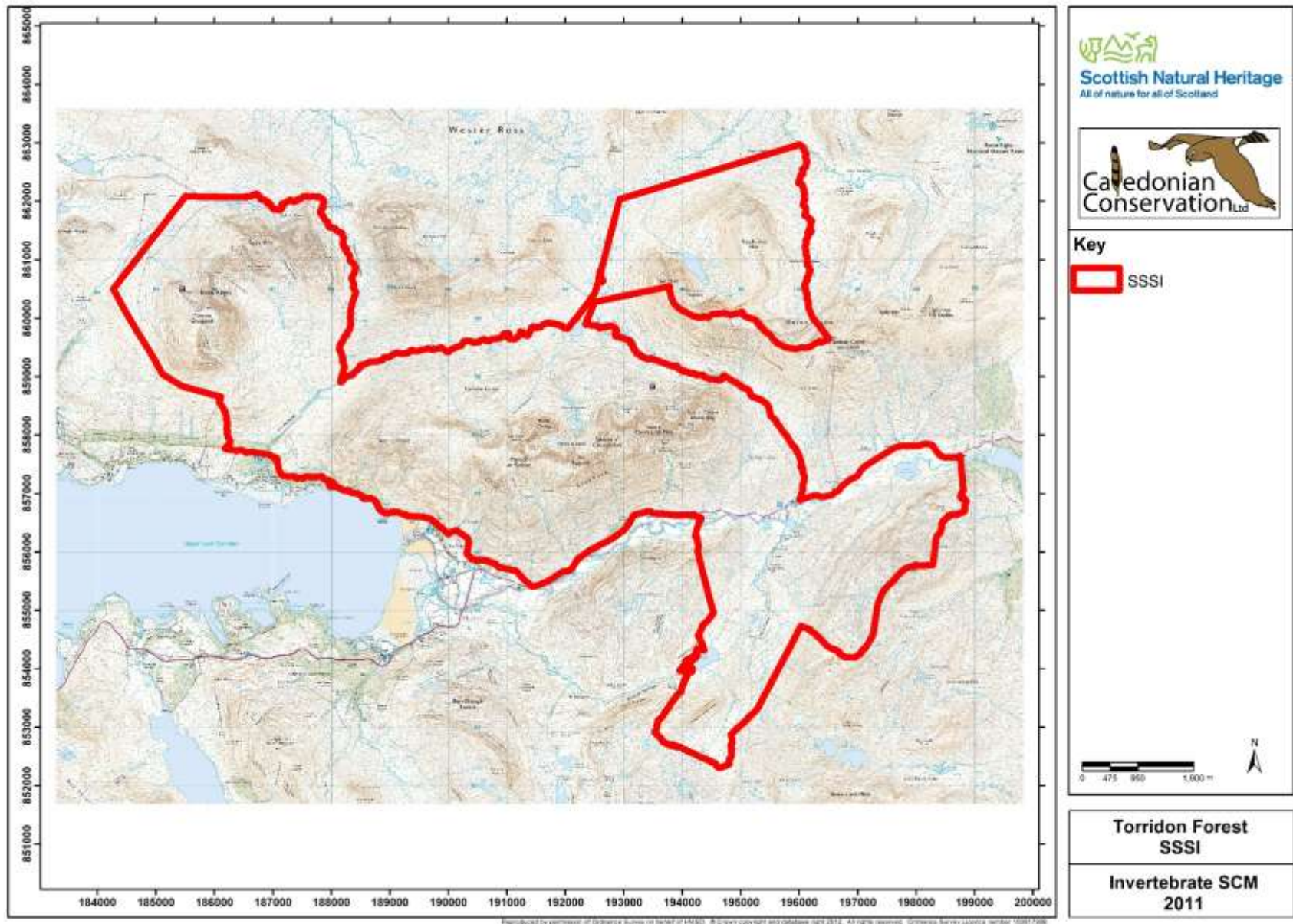


Torridon Forest 2011

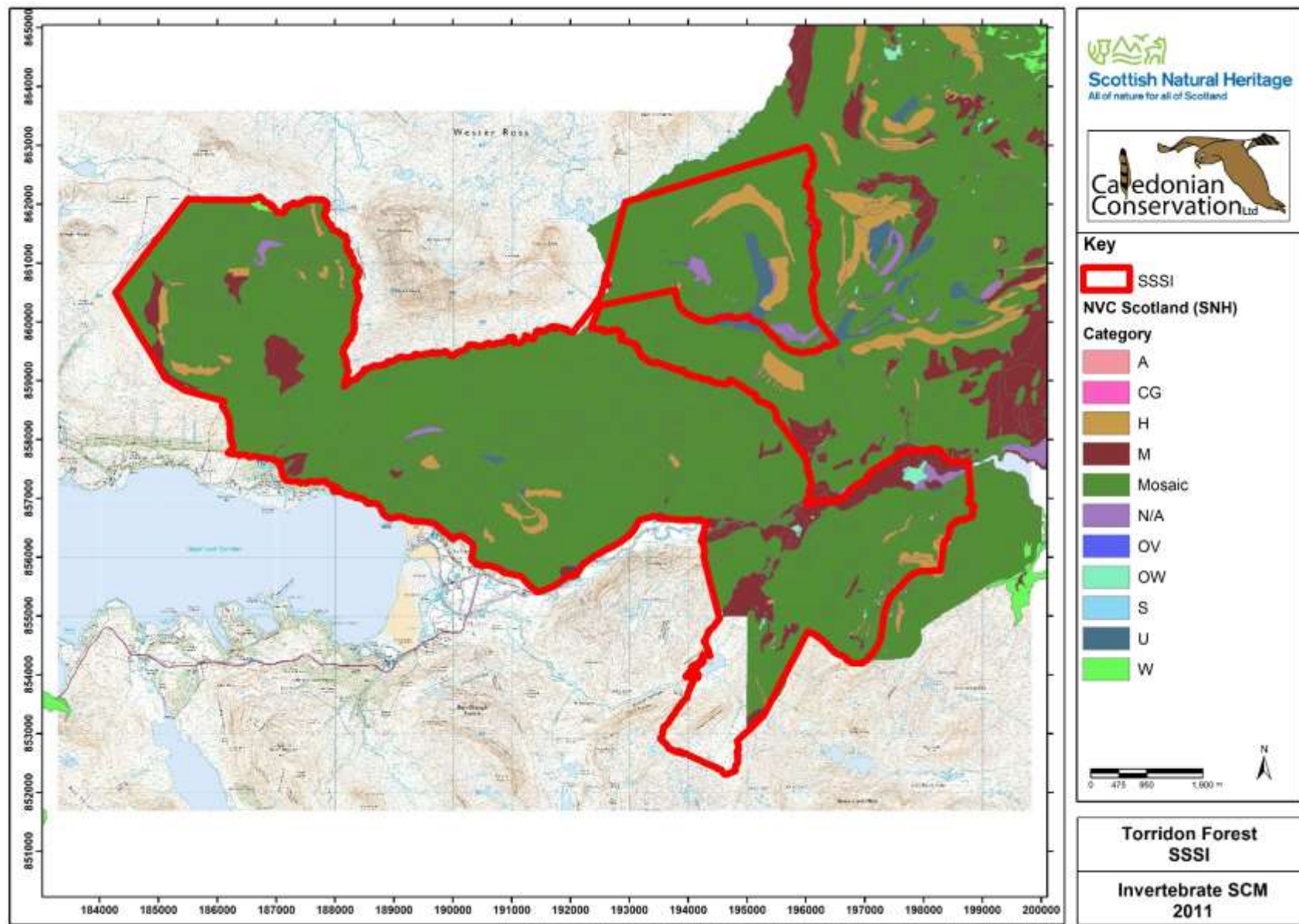
***Micaria alpina* – Alpine ant-spider**

- RDB3
- Elevations above 750m
- Associated with:
 - *Vaccinium myrtillus* (bilberry heath)
 - *Racomitrium*

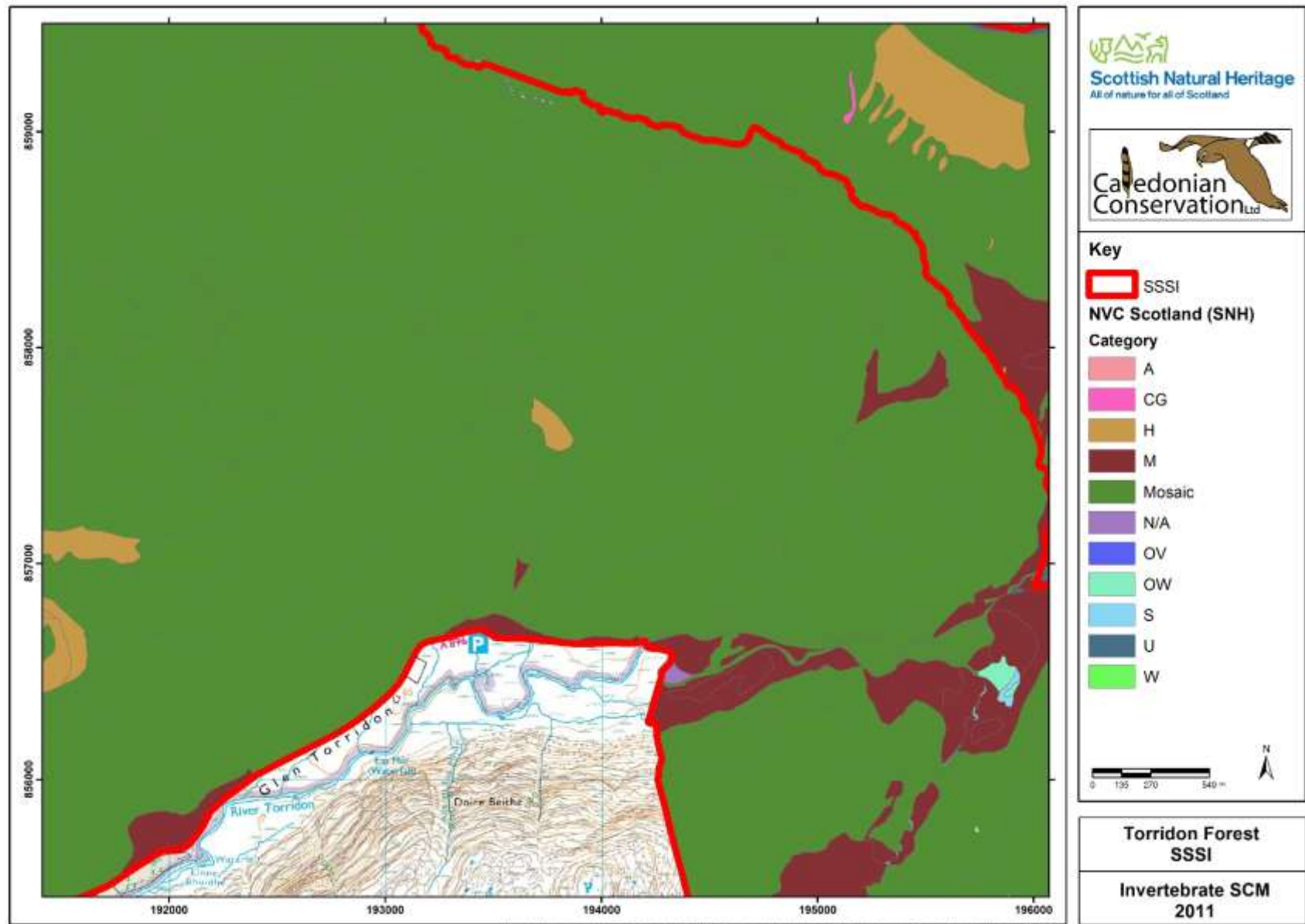
Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



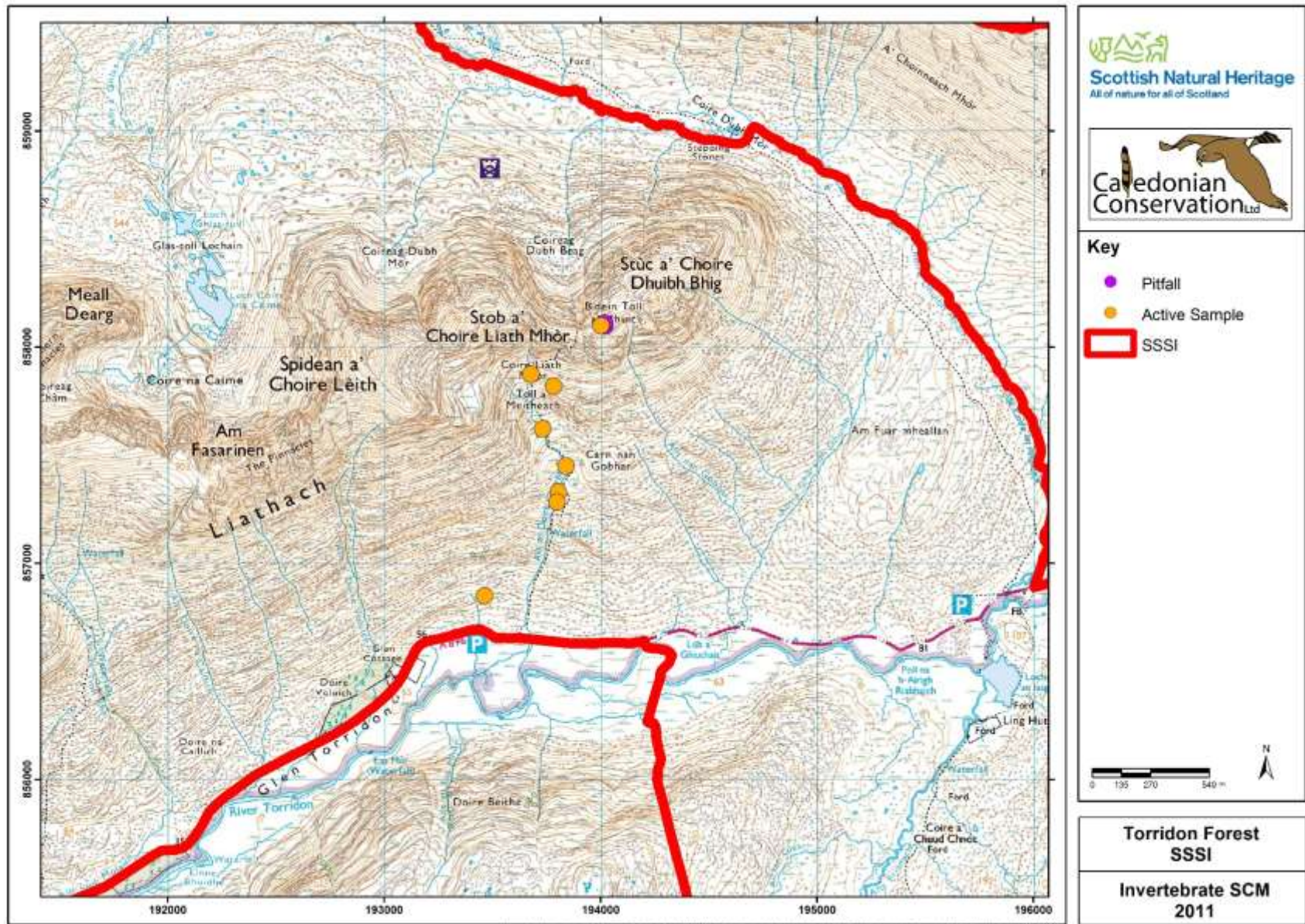
Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Torridon Results

- Erroneous record
- Actually Lochan Fheoir in Cnoc an Alaskie SSSI (not added as a feature to date)

Milner, J.E. 1988. New records of *Erigone psychrophila* Thorell and *Micaria alpina* L. Koch from Sutherland and Ross, Scotland. *Newsletter of the British Arachnological Society* **51**, 6.

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



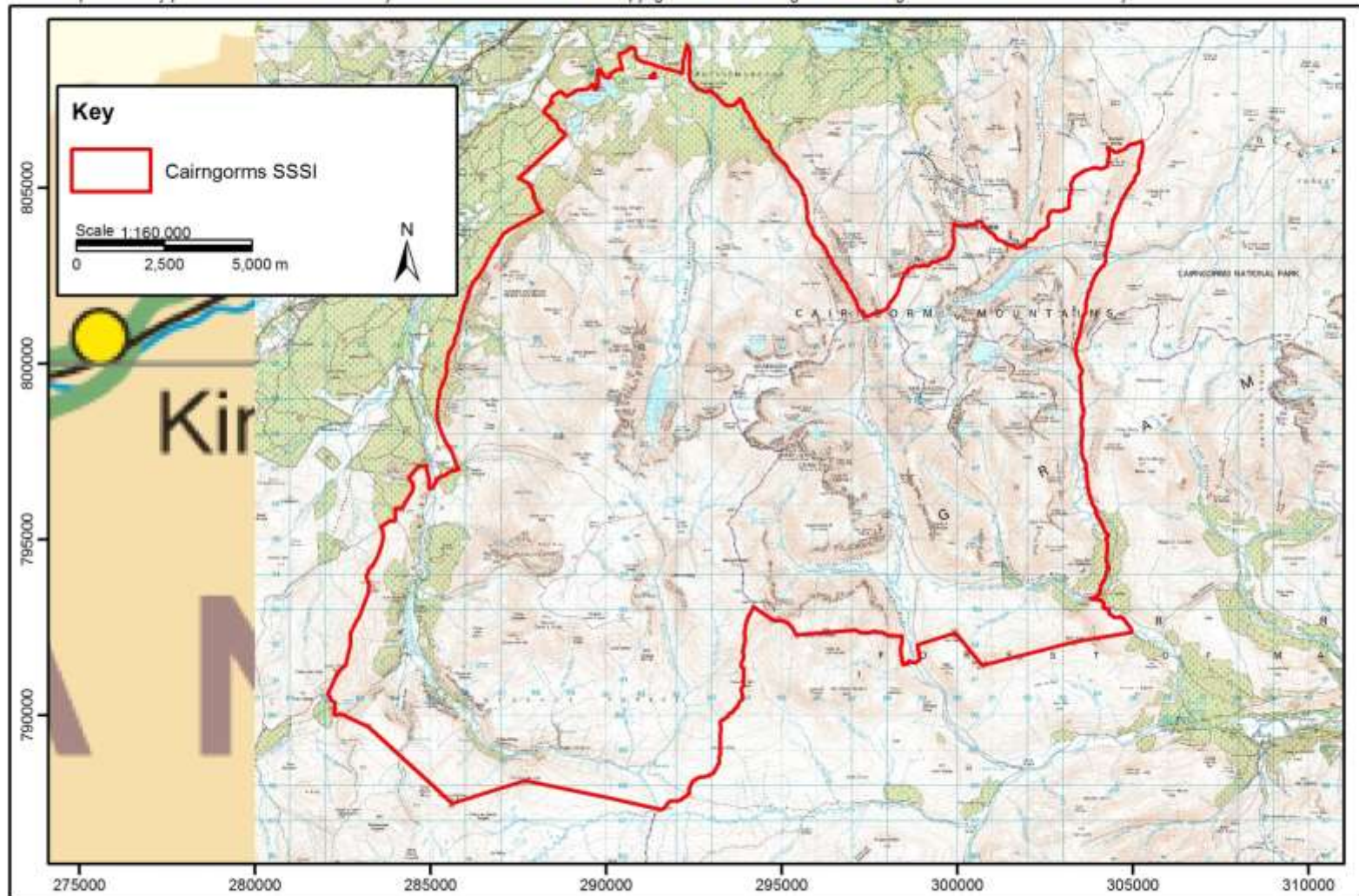
Cairngorms 2013

Cairngorms (292.3km²)

- Elevation 200 – 1,309m
- Range of habitats from mountain to forest
- Feature poorly defined in citation
- Used unpublished SNH dossier of invertebrate records from site to target surveys
- Included:
 - Araneae
 - Coleoptera
 - Hemiptera
 - Lepidoptera
 - Mollusca
 - Odonata

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland

Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2014. All rights reserved. Ordnance Survey Licence number 100017908.

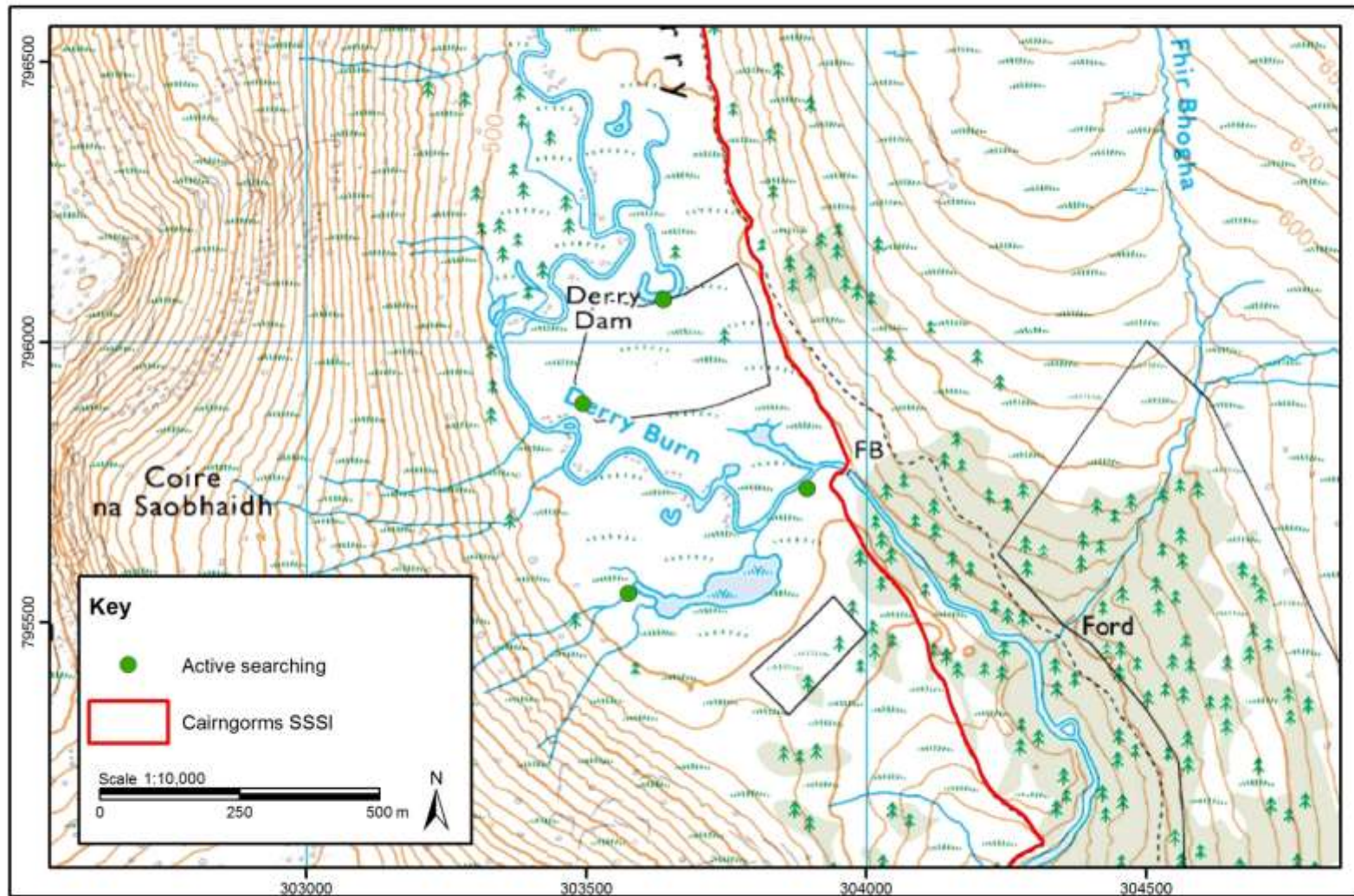


Cairngorms: Site

Cairngorms (292.3km²)

- Elevation 200 – 1,309m
- Range of habitats from mountain to forest
- Feature poorly defined in citation
- Used unpublished SNH dossier of invertebrate records from site to target surveys
- Included:
 - Araneae
 - Coleoptera
 - Hemiptera
 - Lepidoptera
 - **Mollusca**
 - **Odonata**

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2014. All rights reserved. Ordnance Survey Licence number 100017908.

Cairngorms: Odonata Sample Locations

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Table 3.12 List of Odonata species recorded in Cairngorms SSSI compared with species recorded from this area historically

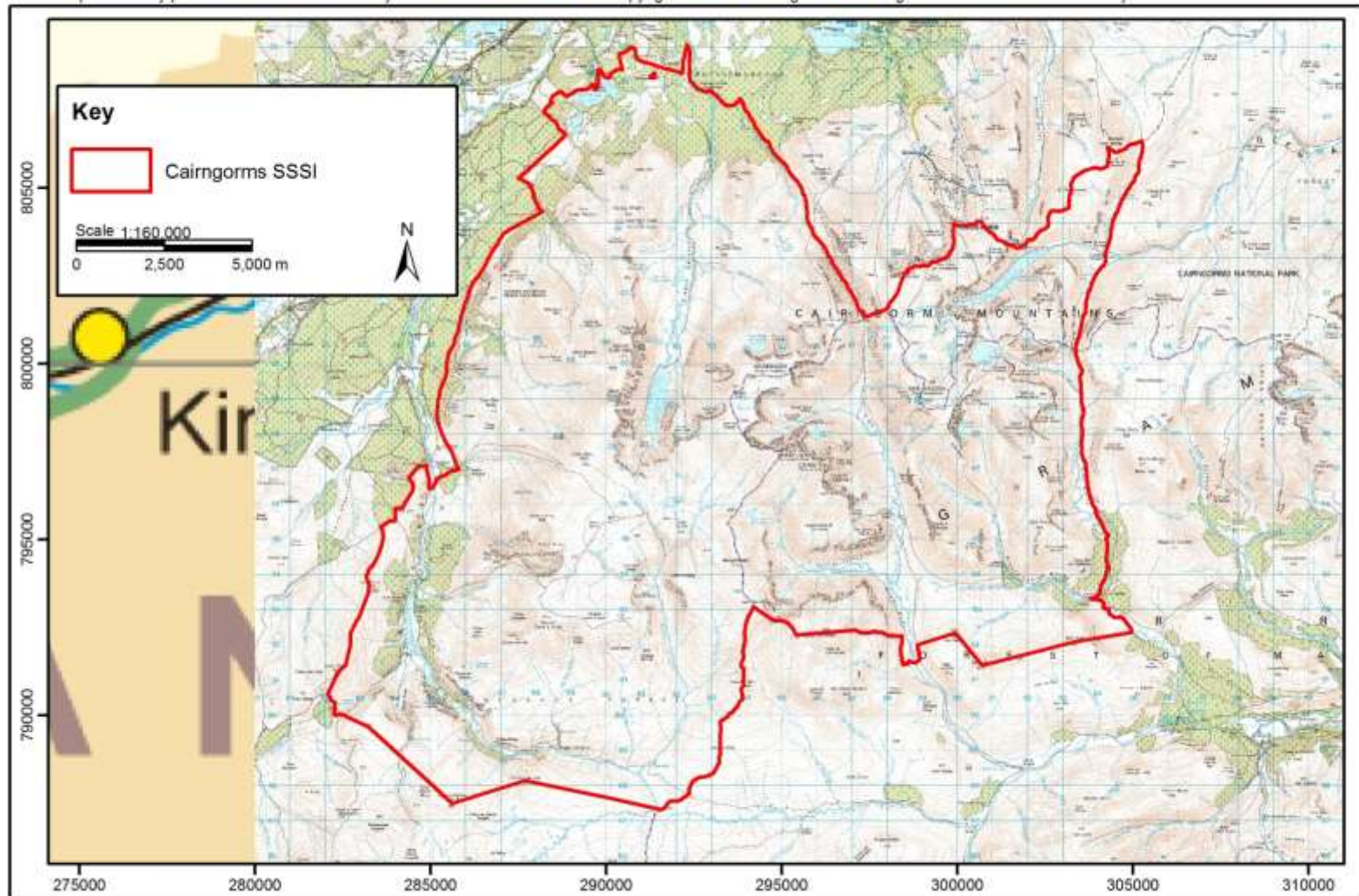
Possible Species	Cairngorms Sites 2013 SCM	Glen Derry 2014 SCM
<i>Aeshna caerulea</i> (azure hawker)*		
<i>Aeshna juncea</i> (common hawker)	X b	X b
<i>Coenagrion hastulatum</i> (northern damselfly)		
<i>Cordulegaster boltonii</i> (golden-ringed dragonfly)	X	X
<i>Enallagma cyathigerum</i> (common blue damselfly)	X	
<i>Ischnura elegans</i> (blue-tailed damselfly)	X b	
<i>Lestes sponsa</i> (emerald damselfly)	X	X
<i>Leucorrhinia dubia</i> (white-faced darter)	X b	
<i>Libellula quadrimaculata</i> (four-spotted chaser)	X b	
<i>Pyrrhosoma nymphula</i> (large red damselfly)	X b	X b
<i>Somatochlora arctica</i> (northern emerald)		
<i>Sympetrum danae</i> (black darter)	X b	X b
<i>Sympetrum striolatum</i> (common darter)		
Total	9/6b	5/3b

X = present; b = evidence of breeding

** Records of this species are considered to be questionable in this area*

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland

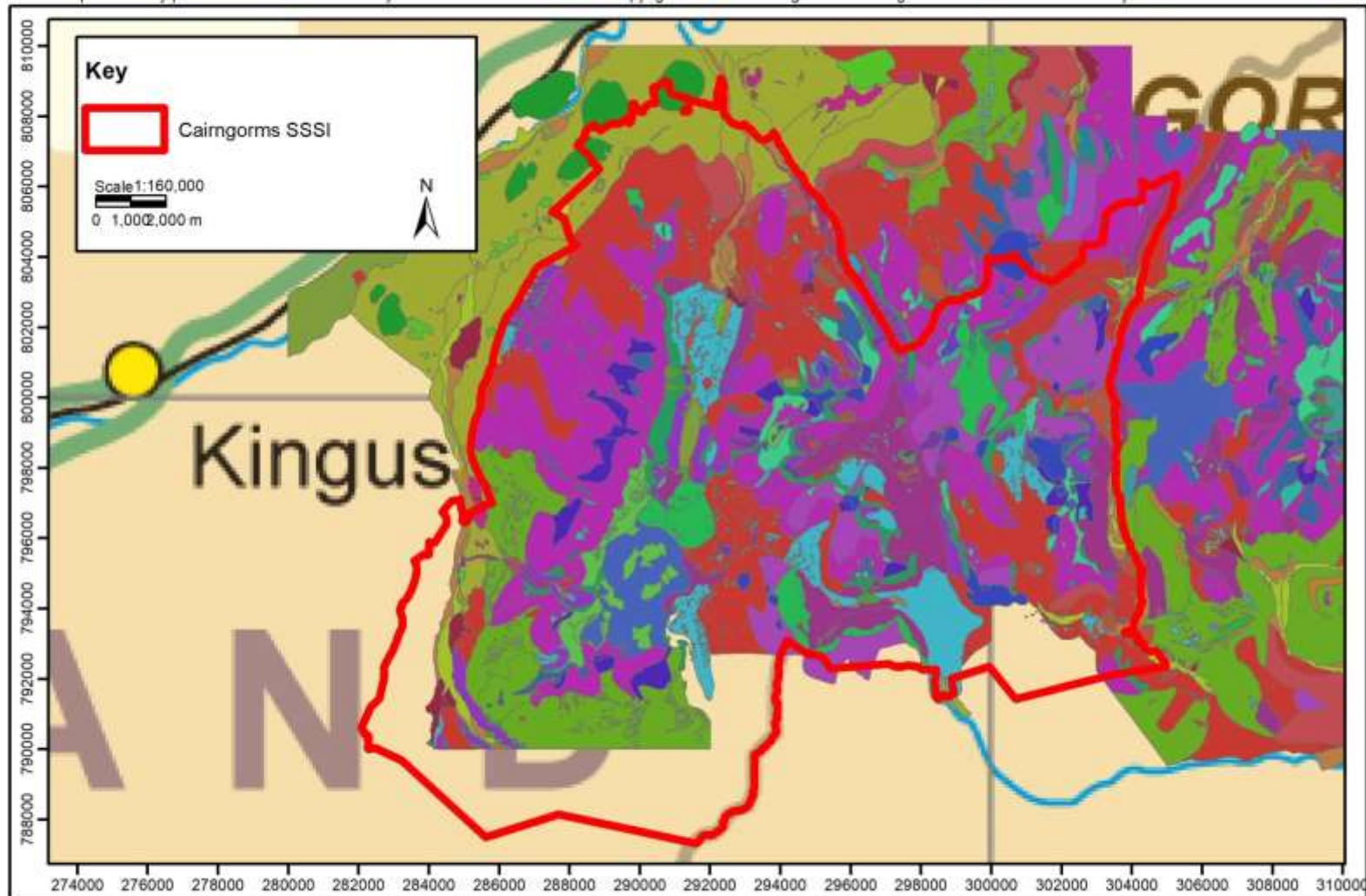
Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2014. All rights reserved. Ordnance Survey Licence number 100017908.



Cairngorms: Site

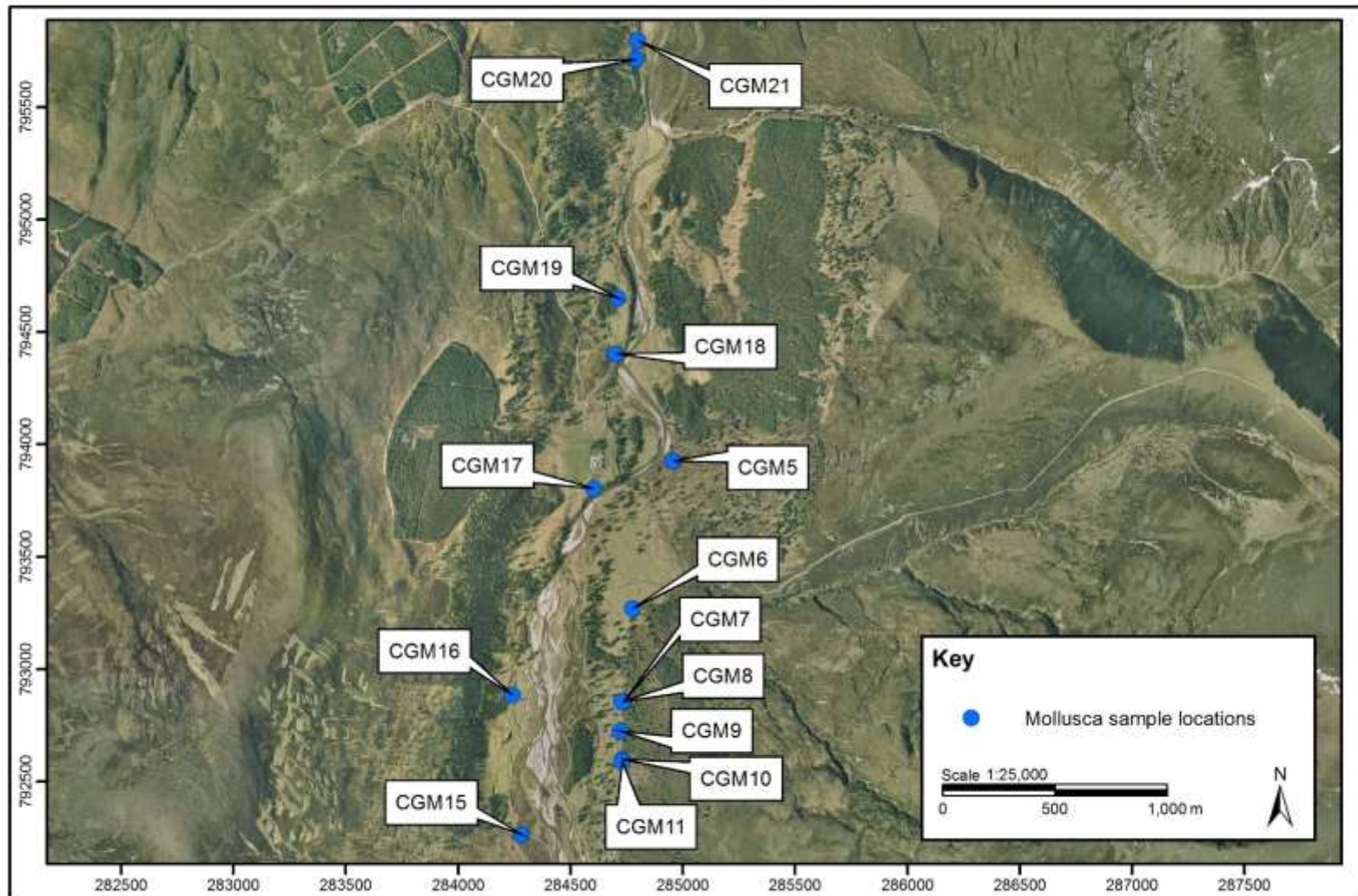
Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland

Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2014. All rights reserved. Ordnance Survey Licence number 100017908.



Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland

Aerial images provided by SNH, © GetMapping Plc 2014



Cairngorms: NW Mollusc Sample Locations

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Rum 2015

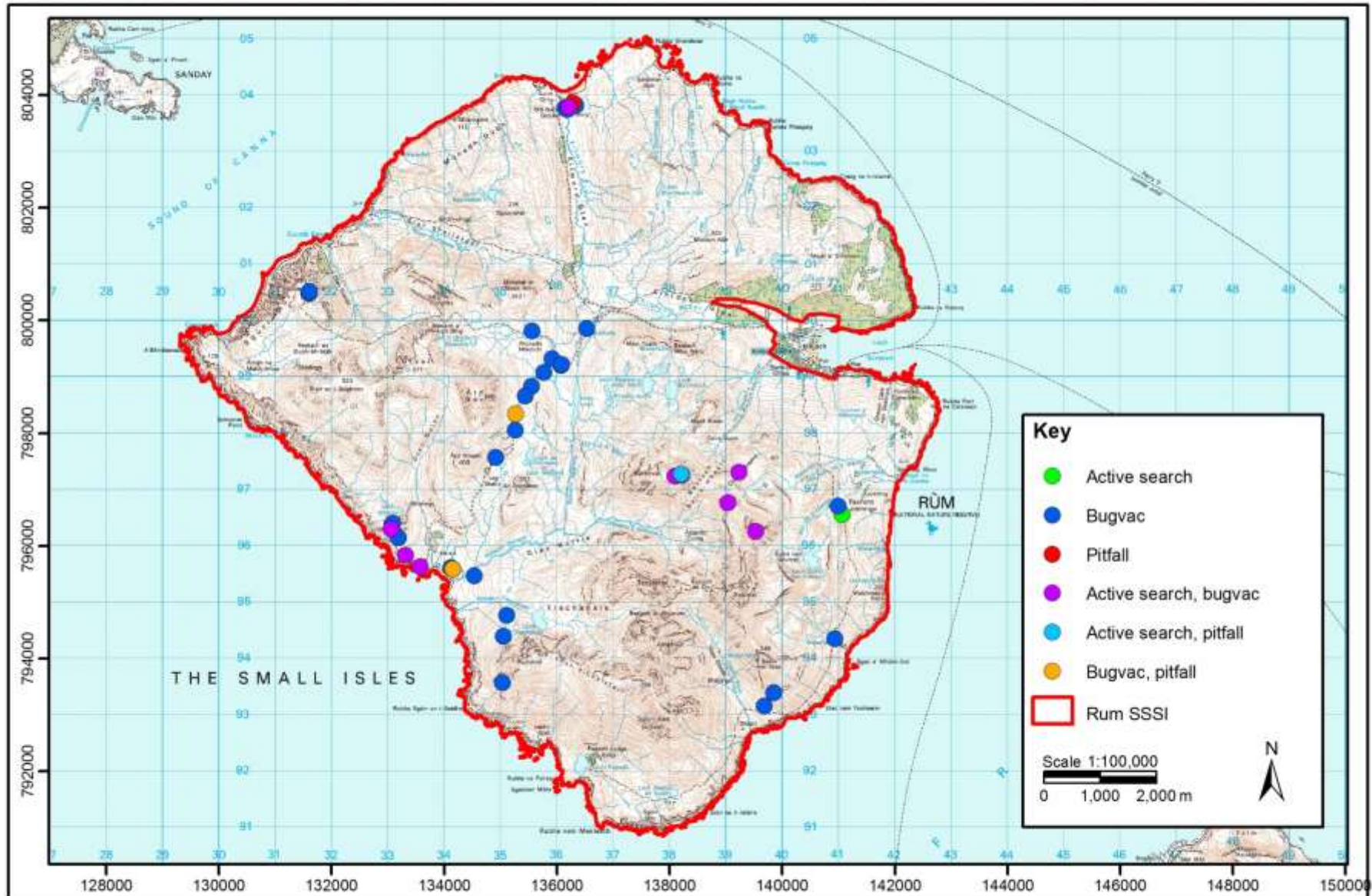
Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



- Exceptional work completed by Peter Wormell (former Warden), but records and reports thought to be lost through pulping as part of a rationalization process without digital copies being kept.
- Wormell published articles in journals so these remain, but are not as detailed as original records and reports.
- Invertebrate assemblage feature was defined based on upland, peatland, and coastal habitats.

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland

Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2016. All rights reserved. Ordnance Survey Licence number 0100031673.



Key Messages

- Never destroy historic data!
- The better the data, the more easily a feature can be relocated or not, increasing confidence in monitoring.
- Huge range of data sources, of varying detail and reliability.
- Think outside the box – sometimes useful data comes from unexpected sources.
- Museums collections are an invaluable resource.
- Keep recording, with as much detail as possible.
- Share data.

Using Existing Datasets to Inform Site Condition Monitoring at SSSIs in Scotland



Chris Cathrine (Director)

Caledonian Conservation Ltd

chris.cathrine@caledonianconservation.co.uk



[@ChrisCathrine](#) / [@CalConLtd](#)



www.facebook.com/CaledonianConservation