

# How Biodiversity Data Benefits Conservation in Planning and Other Applications

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Photos © Caledonian Conservation unless otherwise stated



**Chris Cathrine**  
Director, Caledonian Conservation Ltd

SWSEIC Wildlife Recorder's Gathering 2021. 13 November 2021, Online.

## Overview

- Caledonian Conservation Ltd – what we do
- Biodiversity Data – providers, types & limitations
- Case Studies:
  - Creag Riabhach Wind Farm (Highland)
  - NatureScot Invertebrate Site Condition Monitoring (all Scotland)
  - Non-native Species: Alpine newt
- Conclusions

## Who We Are

- Established March 2010
- Ecological Consultancy
- Based near Bridge of Allan, covering all of Scotland and beyond!
- 8 members of staff
- 20+ Associate Ecologists

## What We Do

- Developments

# Caledonian Conservation Ltd



# Caledonian Conservation Ltd



# Caledonian Conservation Ltd



# Caledonian Conservation Ltd





# Caledonian Conservation Ltd



## What we do

- Developments
  - Surveys

# Wild Places



# Wild Places



# Wild Places



# Mammal Surveys



# Mammal Surveys

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0 4°C



# Bird Surveys





# Reptile Surveys



# Amphibian Surveys



# Invertebrate Surveys



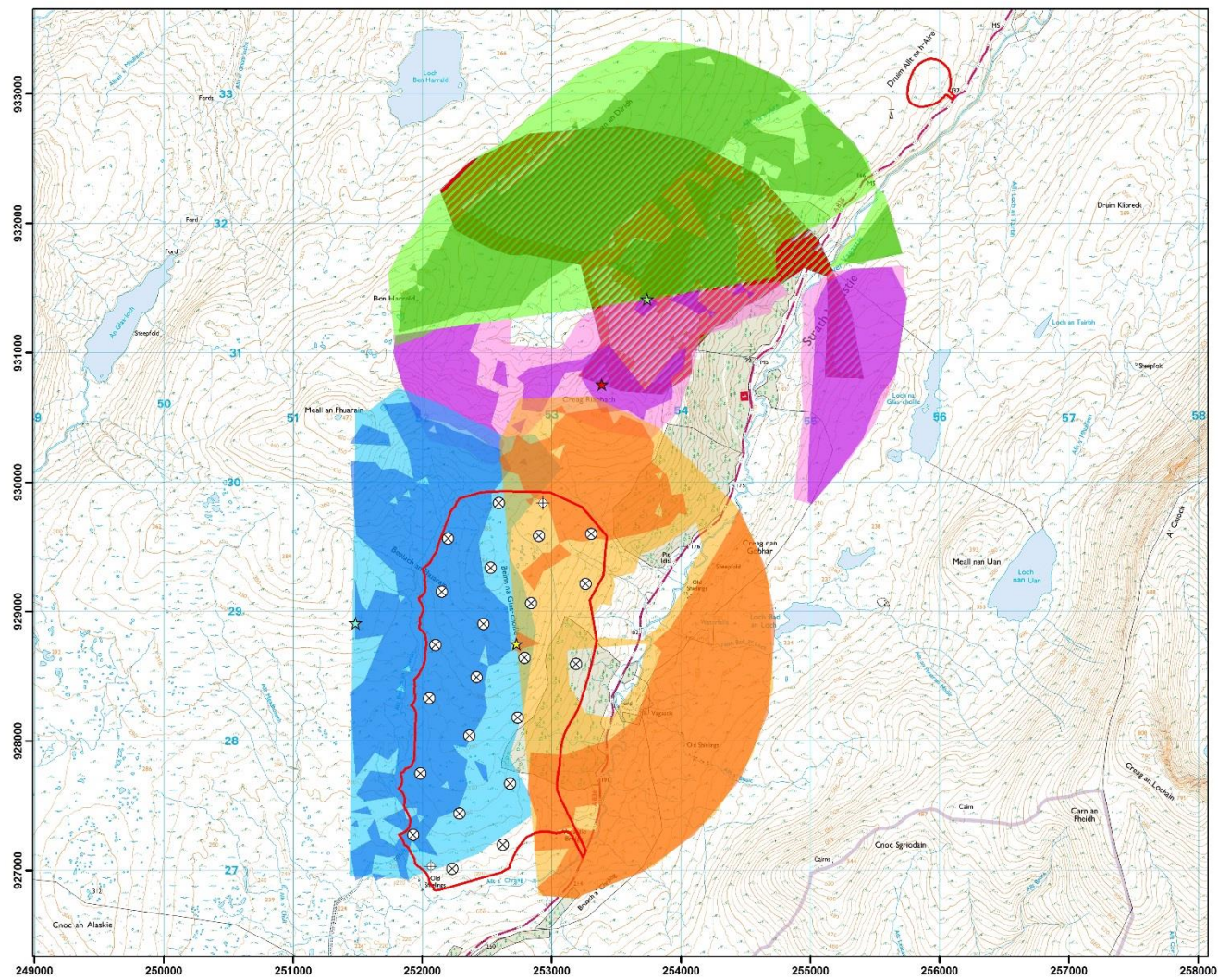
# Bryophyte Surveys



## What we do

- Developments
  - Surveys
  - Ecological Impact Assessment (EclA)

# Ecological Impact Assessment



- KEY**
- ★ VPs 1 & 4
  - ★ VP2
  - ★ VP3
  - ★ VP5
  - ⊗ Turbine
  - ⊕ Met mast
  - ▭ Site boundary
  - VP1 viewshed (0m)
  - VP1 viewshed (20m)
  - VP2 viewshed (0m)
  - VP2 viewshed (20m)
  - VP3 viewshed (0m)
  - VP3 viewshed (20m)
  - VP4 viewshed (0m)
  - VP4 viewshed (20m)
  - ▨ VP5 viewshed (0m)
  - ▨ VP5 viewshed (20m)

**CREAG RIABHACH WIND FARM**

A6.1  
All Vantage Point  
Locations and Viewsheds

FIGURE  
TITLE

SCALE  
1:30,000 @ A3  
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DWG. NO.

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## Caledonian Conservation Ltd: what we do

- Developments
  - Surveys
  - Ecological Impact Assessment (EclA)
  - Discharge of conditions
  - Ecological Clerk of Works (ECoW)

# Ecological Clerk of Works





## Caledonian Conservation Ltd: what we do

- Developments
  - Surveys
  - Ecological Impact Assessment (EclA)
  - Discharge of conditions
  - Ecological Clerk of Works (ECoW)
  - Post Consent Monitoring
  - Translocations

# Translocations



## Caledonian Conservation Ltd: what we do

- Non-Governmental Organisations / Charities
  - Surveys
  - Conservation research
  - Conservation management
  - Public interpretation (TV/film, events, photos)

# Film and TV



# Film and TV



NEIL GAIMAN BOOKEND TRUST  
**SIXTEEN  
LEGS**  
*Dark... Creepy... Cool...*



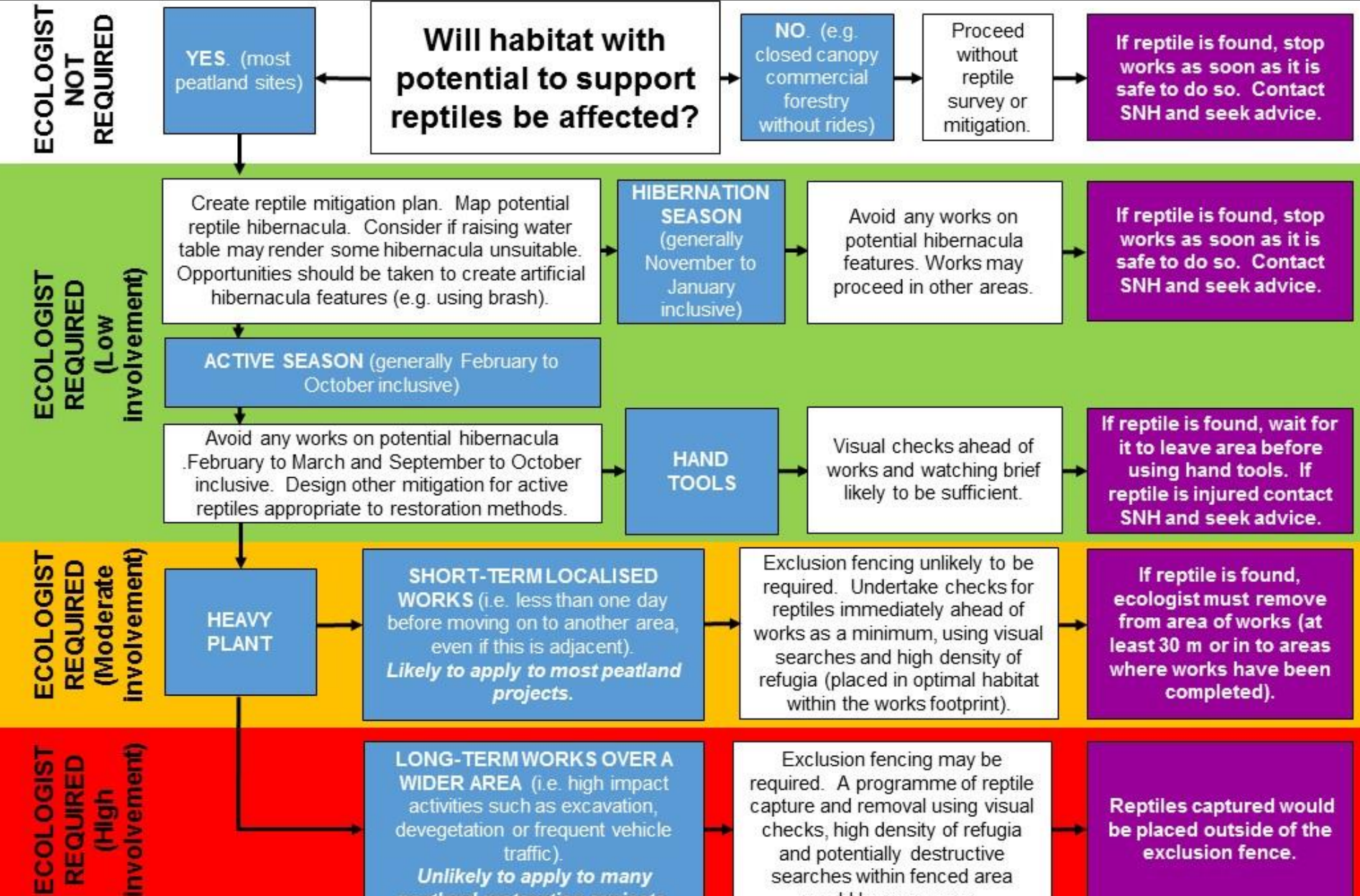
## Caledonian Conservation Ltd: what we do

- Non-Governmental Organisations / Charities
  - Surveys
  - Conservation research
  - Conservation management
  - Public interpretation (TV/film, events, photos)
  - Advocacy / representation
  - Urban Biodiversity Project in Mumbai, India
  - Support Ghostbusters of Glasgow (raise money for Glasgow Children's Hospital)

## Caledonian Conservation Ltd: what we do

- Statutory Nature Conservation Organisations
  - Surveys
  - Conservation management
  - Designing new standard methods
  - Guidance

# Guidance





## Caledonian Conservation Ltd: what we do

- Government Agencies / Local Authorities
  - Surveys
  - Conservation management
  - Designing new standard methods
  - Guidance
  - Policy
  - Expert advice on planning decisions
  - Partnership research projects
  - Specimen identification

# Specimen Identification



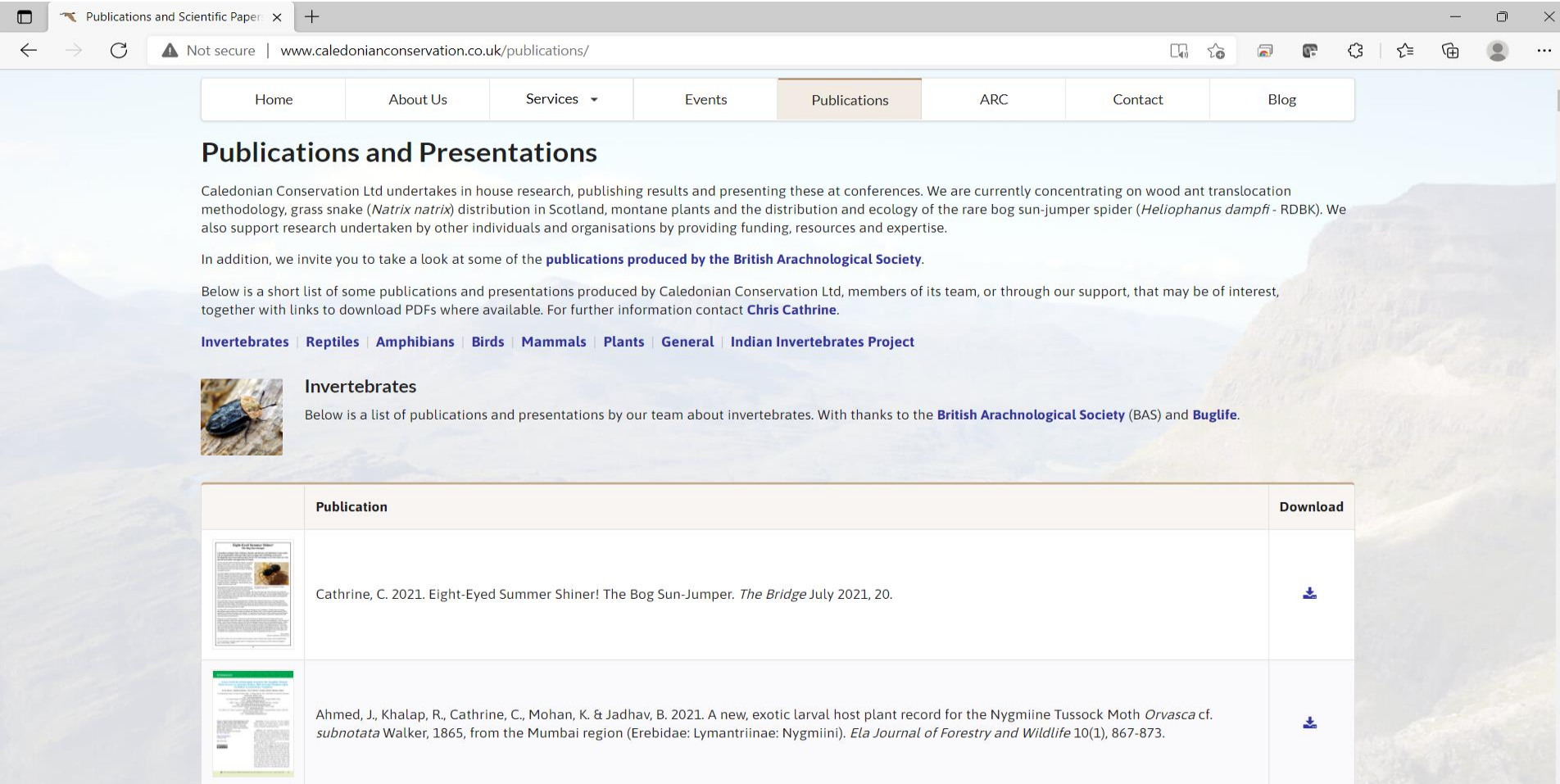
## Caledonian Conservation Ltd: what we do

- Training
  - Professional:
    - Ecological Impact Assessment (EclA)
    - Bird Collision Risk Modelling
    - Invertebrate survey and identification
    - Amphibian survey & mitigation
    - Reptile survey & mitigation
  - University teaching
  - Training & events for schools, community groups, NGOs...

# Education



## Download Caledonian Conservation Ltd publications



Publications and Scientific Paper

Not secure | www.caledonianconservation.co.uk/publications/

Home About Us Services Events Publications ARC Contact Blog

### Publications and Presentations

Caledonian Conservation Ltd undertakes in house research, publishing results and presenting these at conferences. We are currently concentrating on wood ant translocation methodology, grass snake (*Natrix natrix*) distribution in Scotland, montane plants and the distribution and ecology of the rare bog sun-jumper spider (*Heliophanus dampfi* - RDBK). We also support research undertaken by other individuals and organisations by providing funding, resources and expertise.



In addition, we invite you to take a look at some of the [publications produced by the British Arachnological Society](#).

Below is a short list of some publications and presentations produced by Caledonian Conservation Ltd, members of its team, or through our support, that may be of interest, together with links to download PDFs where available. For further information contact [Chris Cathrine](#).

[Invertebrates](#) | [Reptiles](#) | [Amphibians](#) | [Birds](#) | [Mammals](#) | [Plants](#) | [General](#) | [Indian Invertebrates Project](#)

#### Invertebrates

Below is a list of publications and presentations by our team about invertebrates. With thanks to the [British Arachnological Society](#) (BAS) and [Buglife](#).

	Publication	Download
	Cathrine, C. 2021. Eight-Eyed Summer Shiner! The Bog Sun-Jumper. <i>The Bridge</i> July 2021, 20.	<a href="#">↓</a>
	Ahmed, J., Khalap, R., Cathrine, C., Mohan, K. & Jadhav, B. 2021. A new, exotic larval host plant record for the Nygmiine Tussock Moth <i>Orvasca</i> cf. <i>subnotata</i> Walker, 1865, from the Mumbai region (Erebidae: Lymantriinae: Nygmiini). <i>Ela Journal of Forestry and Wildlife</i> 10(1), 867-873.	<a href="#">↓</a>

## Why?

- Identify potential site sensitivities
- Inform design process
- Inform Ecological Appraisal
- Inform novel survey design
- Context for Ecological Impact Assessment
- Monitoring
- Conservation status, distribution & research

## What?

- Data types:
  - Casual / anecdotal
  - Verified
  - Detailed
  - Population
  - Movements / behaviour
  - Protected sites
  - Broad habitats
  - Detailed habitats

## Who?

- Source:
  - NBN, LRC, NGO
  - Recording Scheme
  - Research
  - Research
  - Research
  - SNH
  - SNH (IHN)
  - SNH (NVC)

## Considerations & Limitations

- Permissions



## Considerations & Limitations

- Permissions
  - Open Government Licence (OGL)
  - Creative Commons Zero (CC0)
  - Creative Commons with Attribution (CC BY)
  - Creative Commons, with Attribution, Non-commercial (CC BY-NC)

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  - **Creative Commons Zero (CC0)**
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  - ~~○ **Creative Commons, with Attribution, Non-commercial (CC BY-NC)**~~

## Considerations & Limitations

- Permissions
- Accuracy

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- Resolution:
  - High enough for purpose?

## Considerations & Limitations

- Permissions
- Accuracy
- Resolution:
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  - Confidentiality / sensitivity

## Considerations & Limitations

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

# Biodiversity Data





# Biodiversity Data



## 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**

# Creag Riabhach Wind Farm





## Project

- Wind farm
  - 37 turbines (125m tip height)
- Associated infrastructure
  - Access tracks
  - Crane pads
  - Control building
  - Grid connection



## Data

- Protected sites

# Creag Riabhach Wind Farm



**KEY**

- Special Area of Conservation (SAC)
- Site boundary



Contains Ordnance Survey data © Crown copyright and database right 2013.

**CREAG RIABHACH WIND FARM**

5.3  
Special Areas of Conservation (SACs)

1:100,000 @ A3  
CC0076-5.3-1

**FIGURE TITLE**

**SCALE**

**DWG. NO.**



## Data

- Protected sites
- Data providers:
  - Highland Biological Recording Group
  - RSPB
  - BTO
  - Highland Raptor Study Group
  - Scottish Badgers
  - Saving Scotland's Red Squirrels
  - North Highland Bat Network
  - Amphibian & Reptile Conservation Trust
  - Butterfly Conservation
  - British Dragonfly Society





## Data

Informed novel surveys including:

- Flight activity
- Breeding raptors & owls
- Breeding divers
- Black grouse
- Breeding birds
- Protected mammals
- Bats
- Freshwater pearl mussel
- Phase 1 Habitats
- NVC Habitats

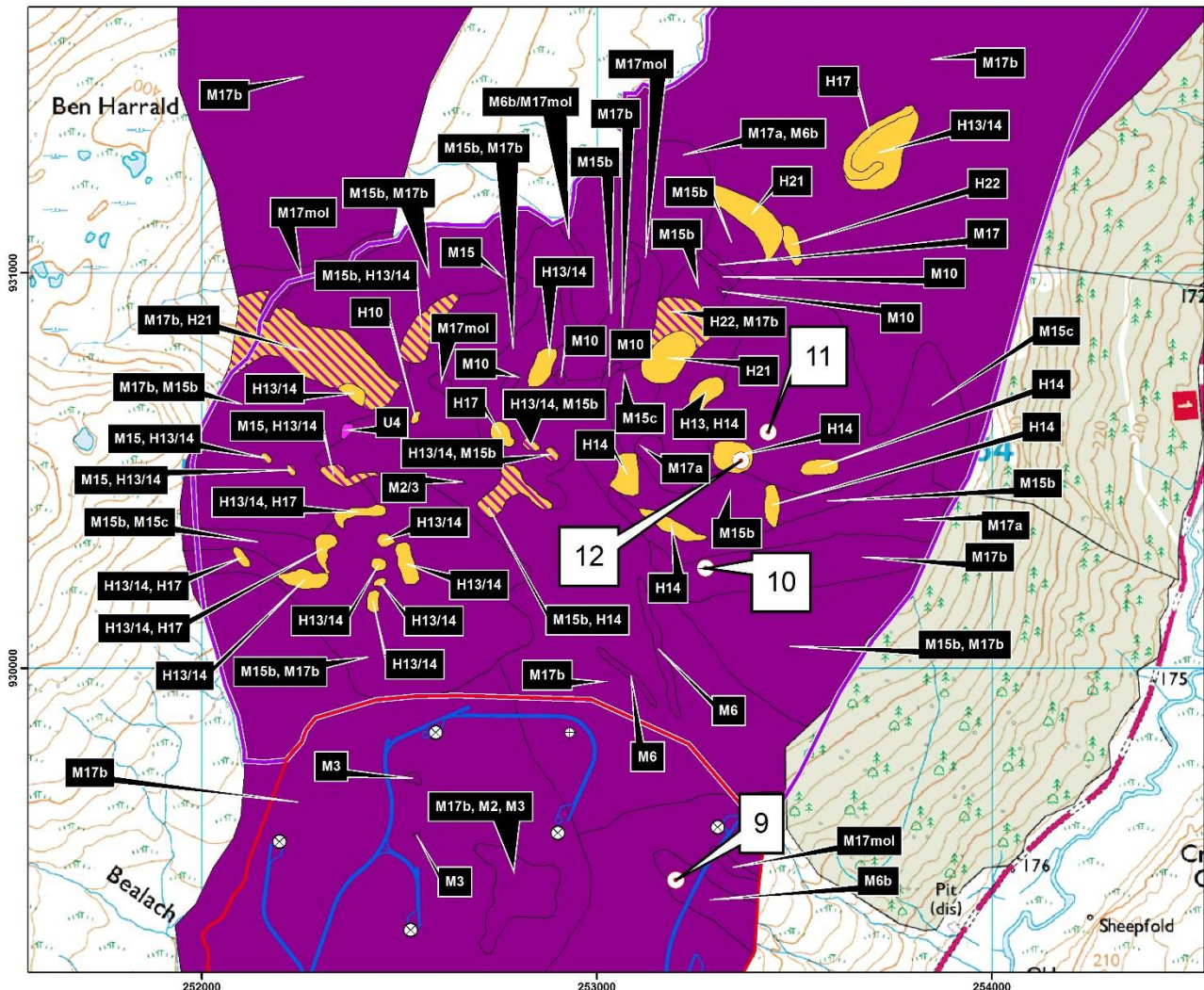


## Data

Informed novel surveys including:

- Flight activity
- Breeding raptors & owls
- Breeding divers
- Black grouse
- Breeding birds
- Protected mammals
- ~~Bats~~
- Freshwater pearl mussel
- Phase 1 Habitats
- NVC Habitats

# Creag Riabhach Wind Farm



**KEY**

- Target note
- Turbine
- Met mast
- Access track
- Site boundary
- Habitat management plan area
- H Heath
- H/M Heath/mire
- H/M/U/W Heath/mire/calciferous grassland/montane/woodland/scrub
- M Mire
- M/U Mire/calciferous grassland/montane
- MG Mesotrophic grassland
- U Calciferous grassland/montane
- U/W Calciferous grassland/montane/woodland/scrub
- W Woodland/scrub

Annotation with a white background denotes Target Note numbers.

Annotation with a black background indicates NVC communities.

**CREAG RIABHACH WIND FARM**



5.7C  
NVC North 3  
(with Target Notes)

FIGURE  
TITLE

1:10,000 @ A3  
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SCALE  
DWG. NO.



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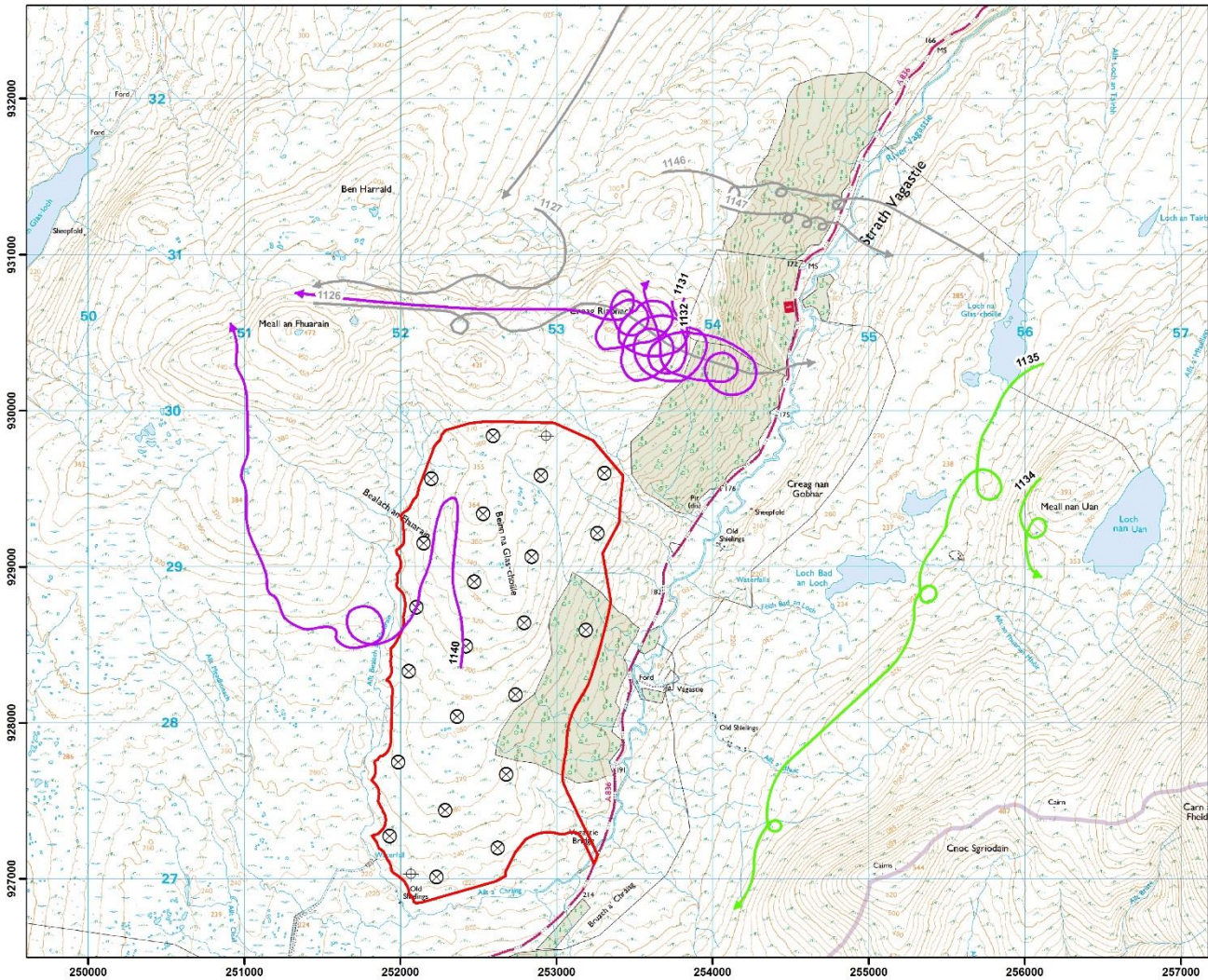
# Creag Riabhach Wind Farm



# Creag Riabhach Wind Farm



# Creag Riabhach Wind Farm



**KEY**

- Golden eagle flight (VP2 or 3) (at PCH)
- Golden eagle flight (VP2 or 3) (not at PCH)
- Golden eagle flight (VP1, 4 or 5)
- Turbine
- Met mast
- Site boundary

Flight Key Numbers are located at the end of each flight line to allow cross reference with data presented in relevant tables.

NOTE: Only flights recorded from VPs 2 and 3 were used in Collision Risk Modelling. Flights recorded from VPs 1, 4 and 5 are presented for context only.

PCH = Potential Collision Height

**CREAG RIABHACH WIND FARM**



6.10  
Golden Eagle Flights

FIGURE  
TITLE

1:25,000 @ A3

SCALE

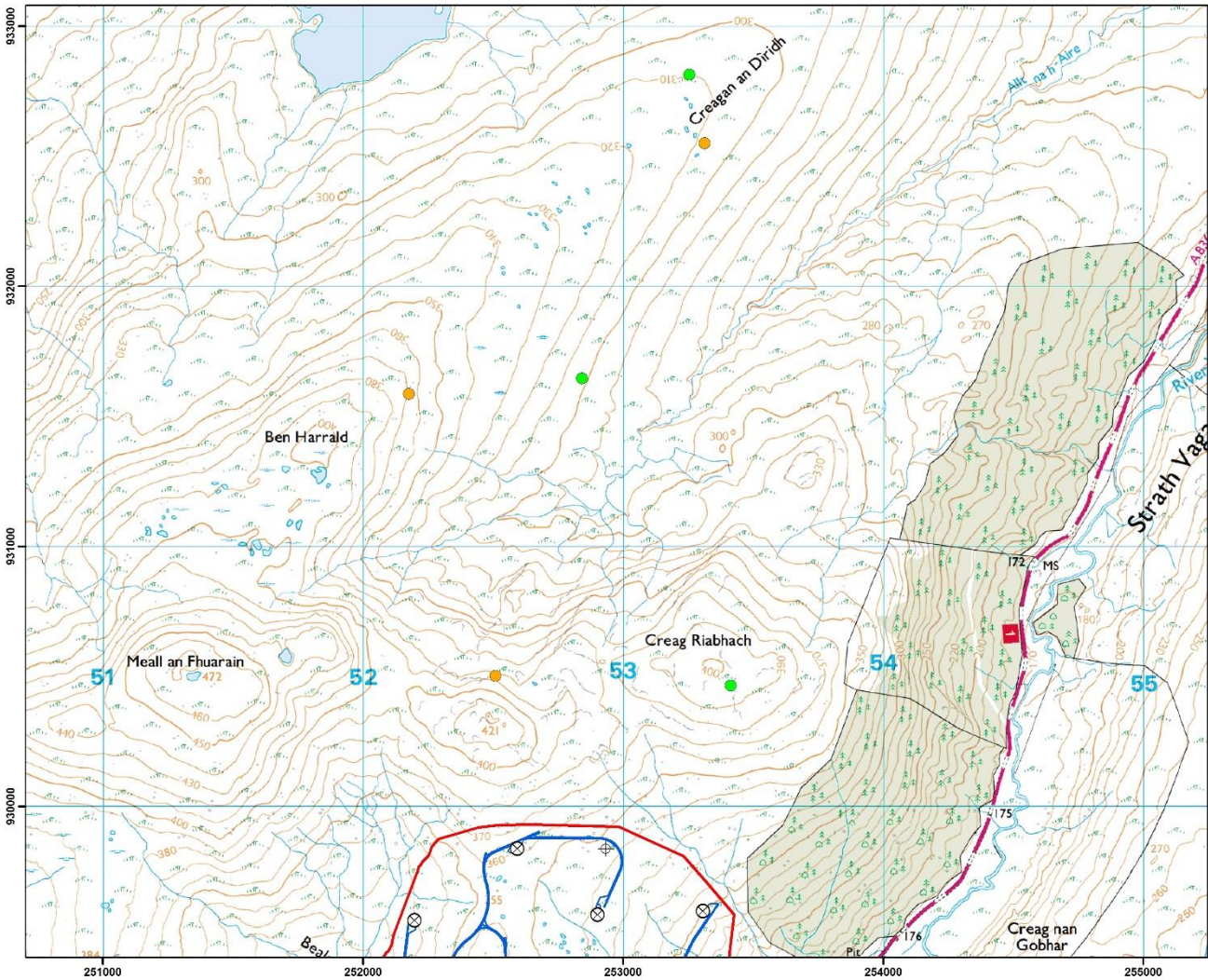
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DWG. NO.



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# Creag Riabhach Wind Farm



- KEY**
- Dunlin territory
  - Golden plover territory
  - ⊗ Turbine
  - ⊕ Met mast
  - Access track
  - ▭ Site boundary

**CREAG RIABHACH WIND FARM**



6.14  
Dunlin and  
Golden Plover Territories

FIGURE  
TITLE

1:15,000 @ A3  
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SCALE  
DWG. NO.



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## Data

- Informed novel surveys.
- Informed assessment (e.g. golden eagle population modelling).
- Allowed identification of sensitive areas for species and habitats.
- Informed iterative design process:
  - Reduced development area.
  - Reduced number of turbines (22).
- Informed Habitat Management Plan & mitigation.
- Impacts were assessed and mitigation designed.





## Data

- What & where?
  - Any eagle records within 6km
  - All other bird species of conservation concern (e.g. Schedule 1, Annex I, red list, Scottish Biodiversity List, LBAP etc.) - 2km
  - All bat records - 20km
  - Other protected mammals - 2km
  - All amphibians and reptiles - 2km
  - Fish of conservation concern - 5km
  - Any invertebrates of conservation concern - 2km
  - Botanical and habitats information - 500m

# Site Condition Monitoring



## 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:

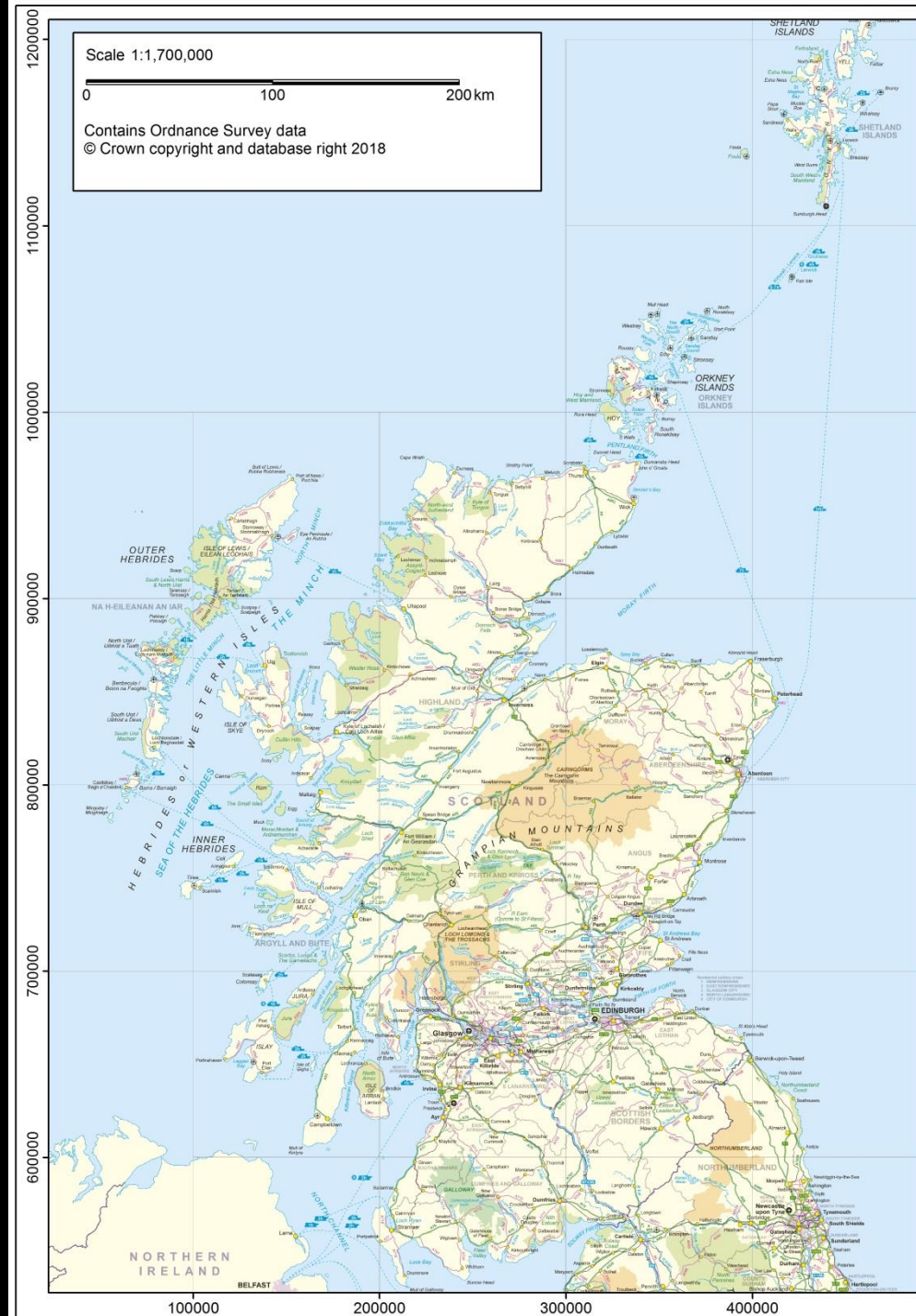
[www.caledonianconservation.co.uk/publications](http://www.caledonianconservation.co.uk/publications)

Data available on NBN Atlas:

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

# SCM 2011-17

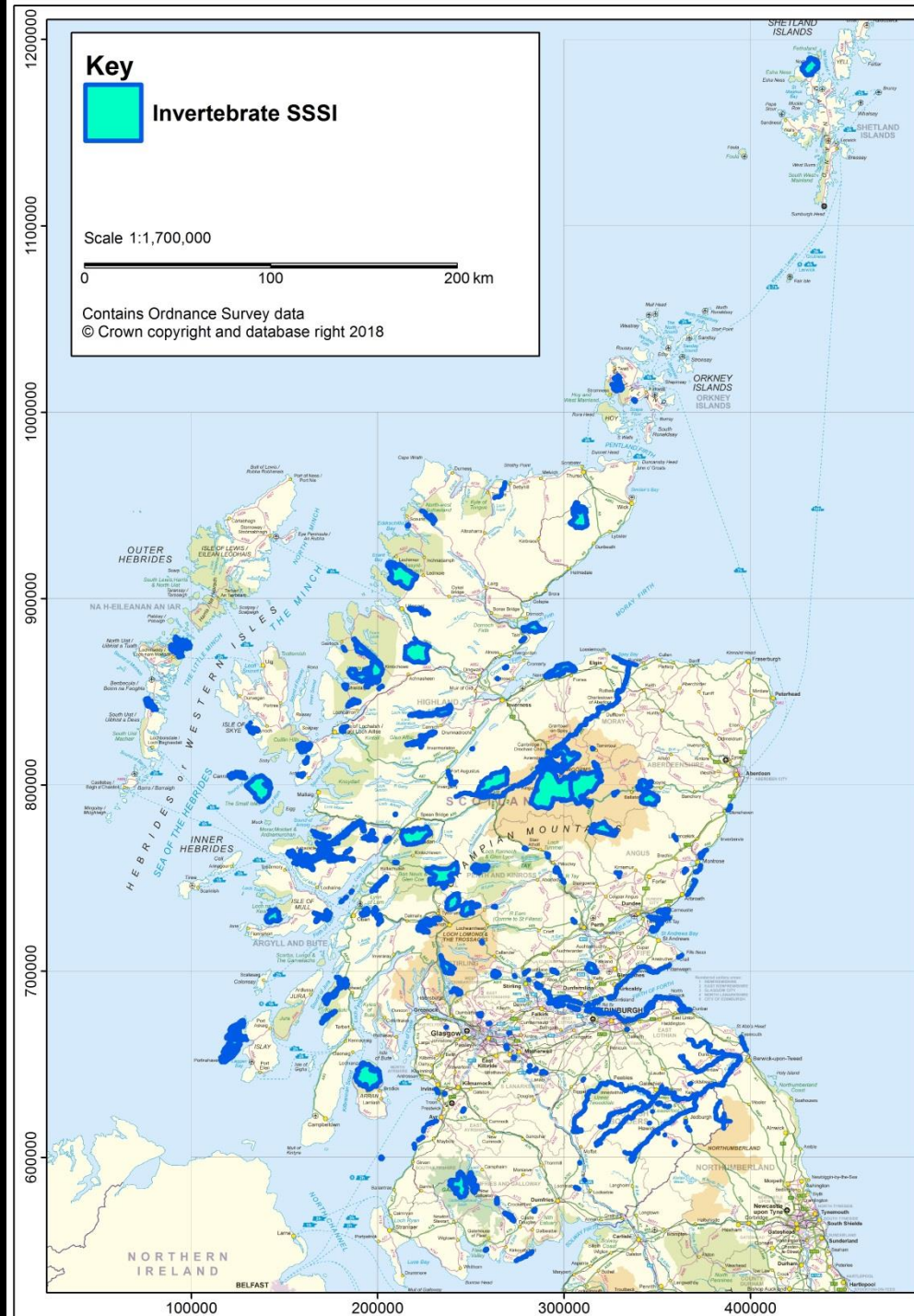
## 158 Invertebrate SSSIs



# SCM 2011-17

## 158 Invertebrate SSSIs

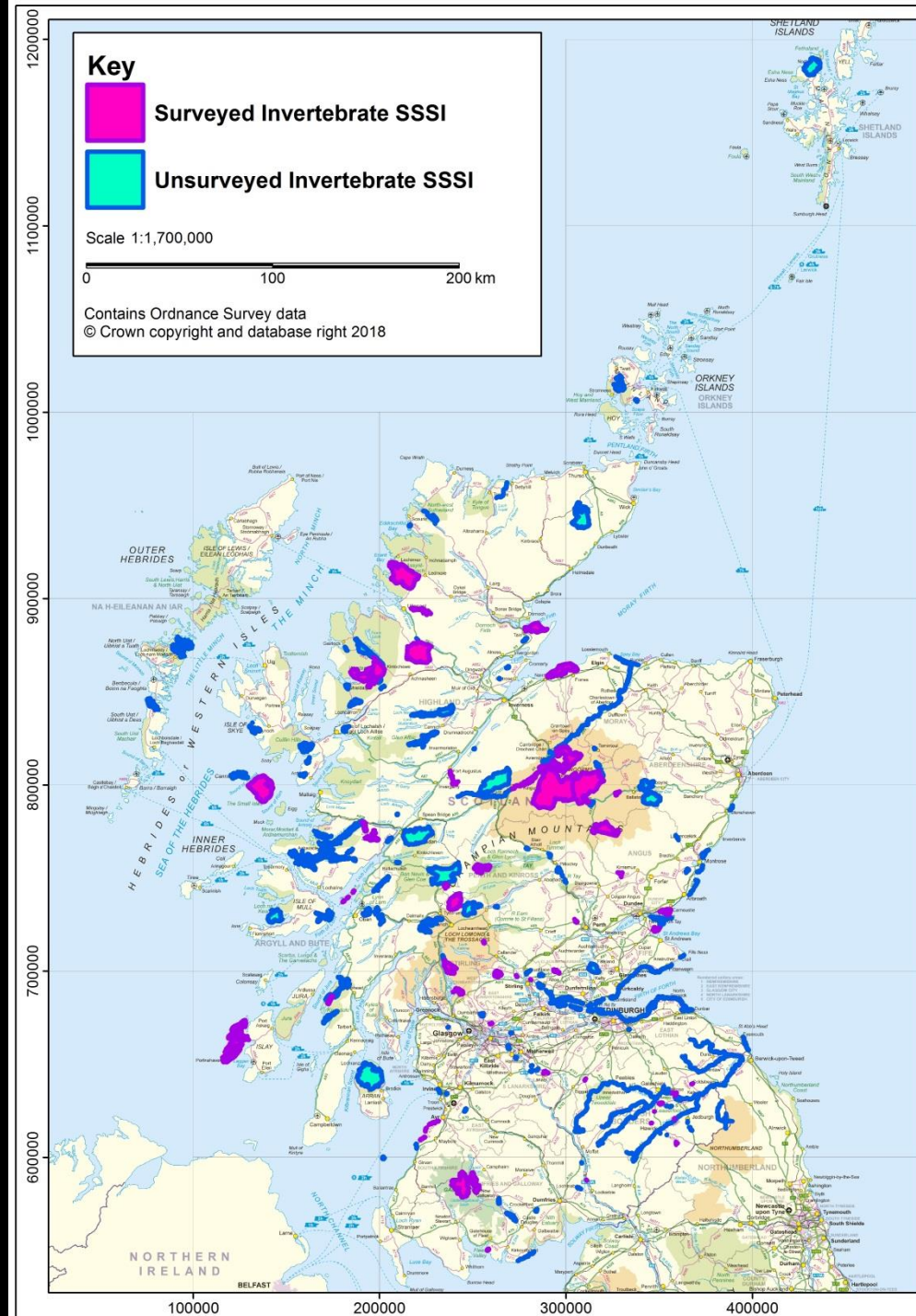
Littlewood, N.A. 2017. A revision of invertebrate features of designated sites in Scotland. Scottish Natural Heritage Commissioned Report No. 1007. Scottish Natural Heritage, Inverness.



# SCM 2011-17

158 Invertebrate SSSIs

57 Site Survey Projects

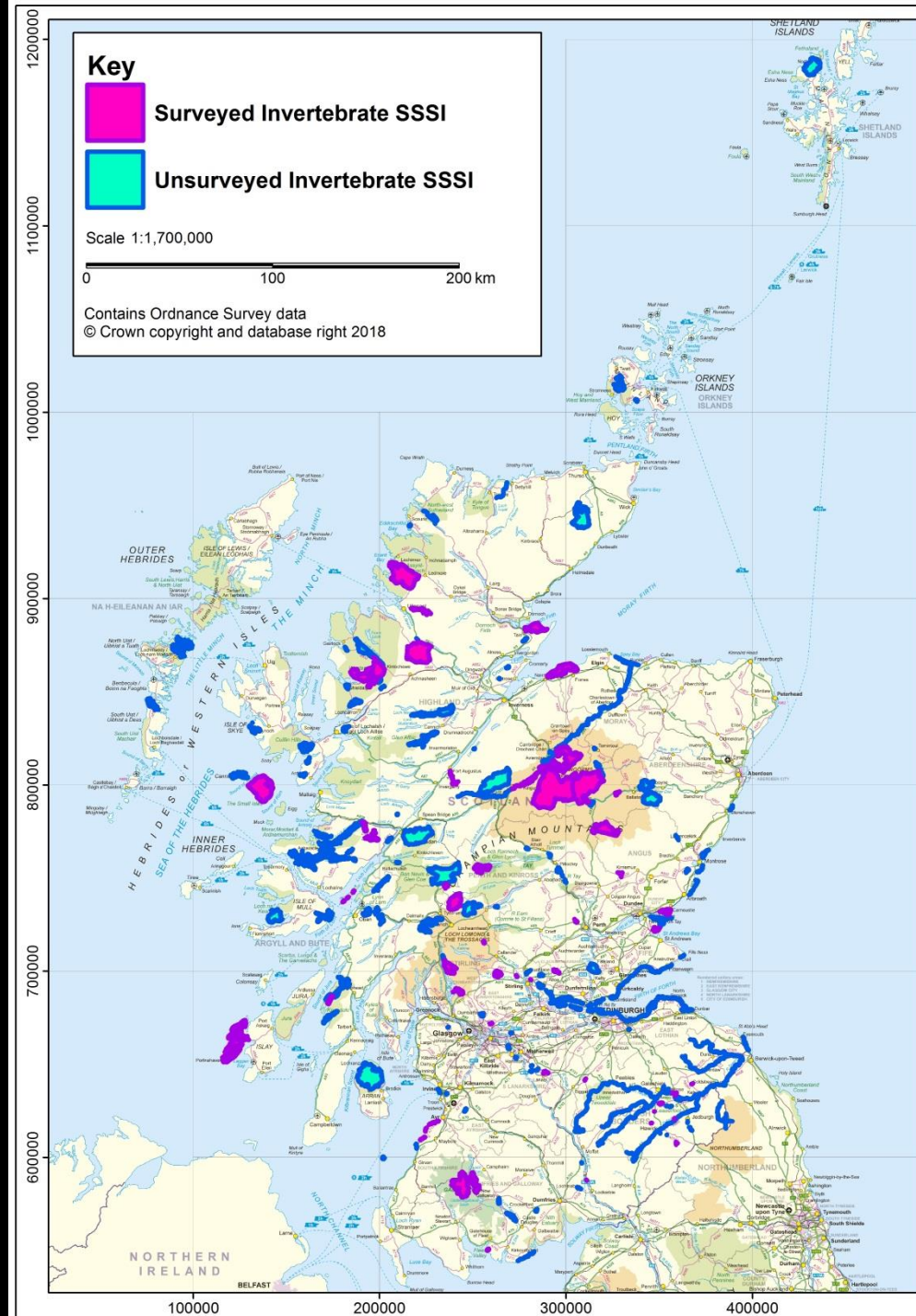


# SCM 2011-17

158 Invertebrate SSSIs

57 Site Survey Projects

51 SSSIs



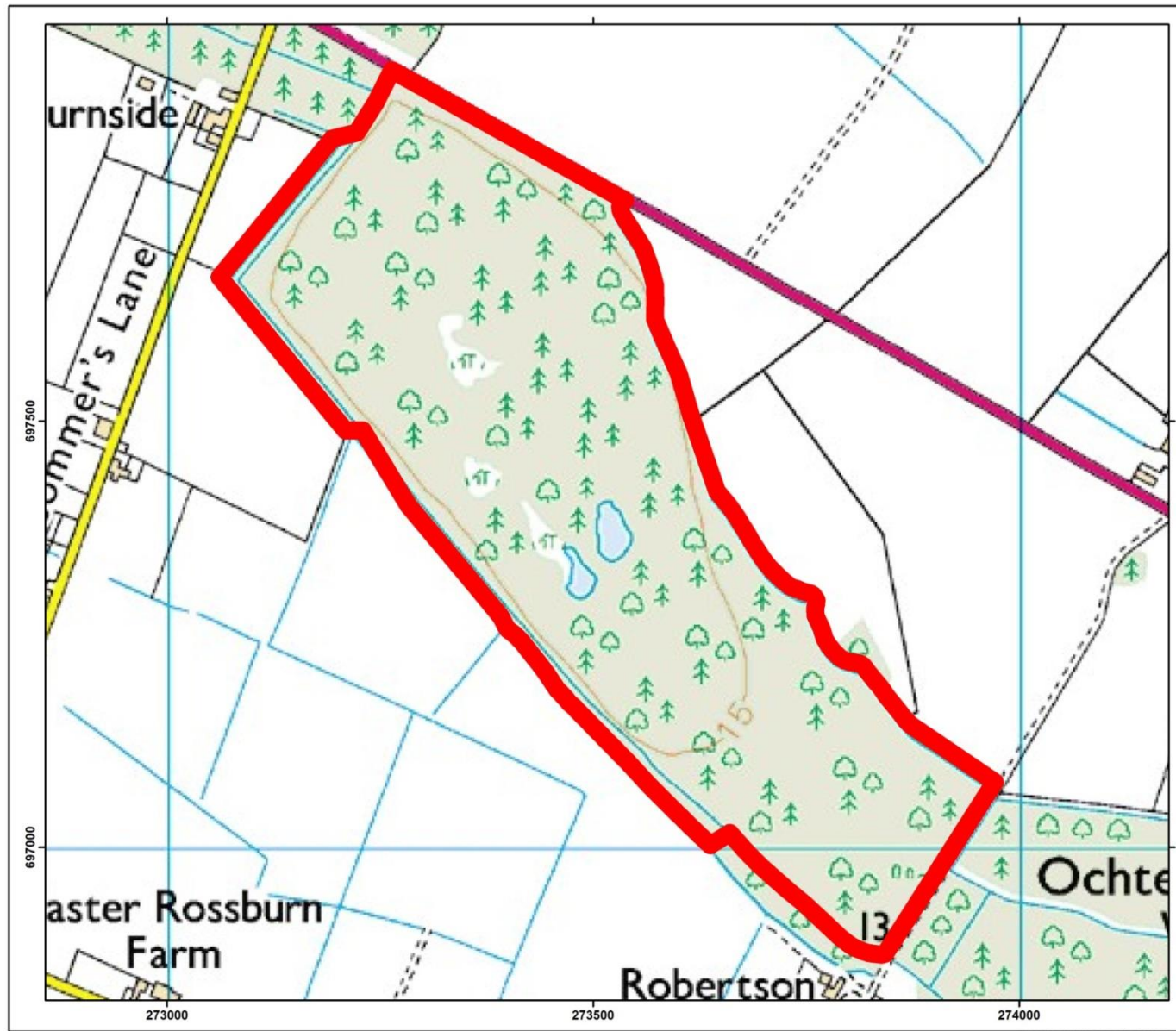


# Site Condition Monitoring



**Ochtertyre Moss 2011**

# Site Condition Monitoring



Scottish Natural Heritage  
All of nature for all of Scotland

Caledonian Conservation Ltd

**Key**  
 SSSI

**Ochteryre**  
**Spider SCM 2011**

# Site Condition Monitoring

*Heliophanus dampfi*



# Site Condition Monitoring

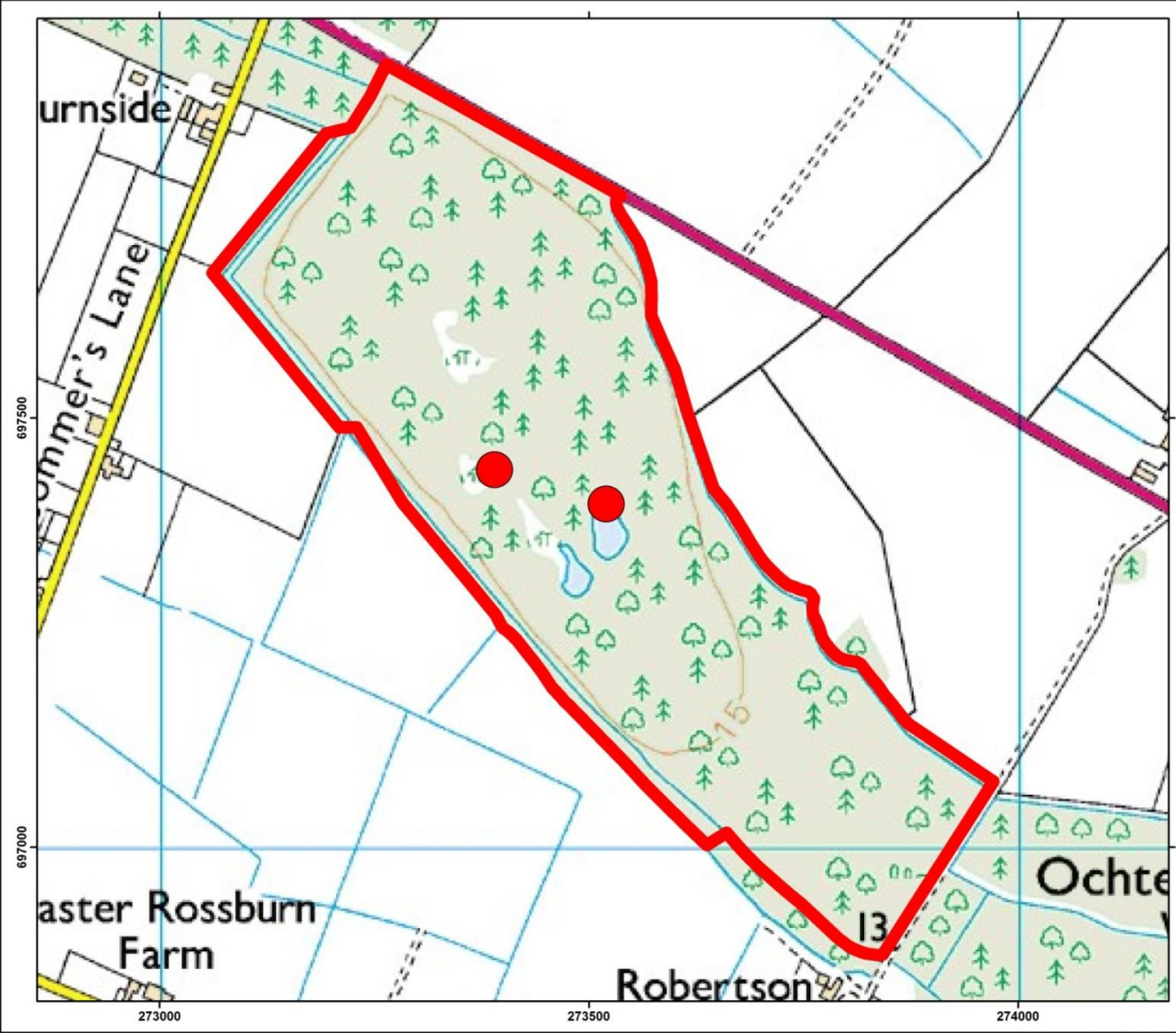


### Key

- Historic Record
- ▭ SSSI

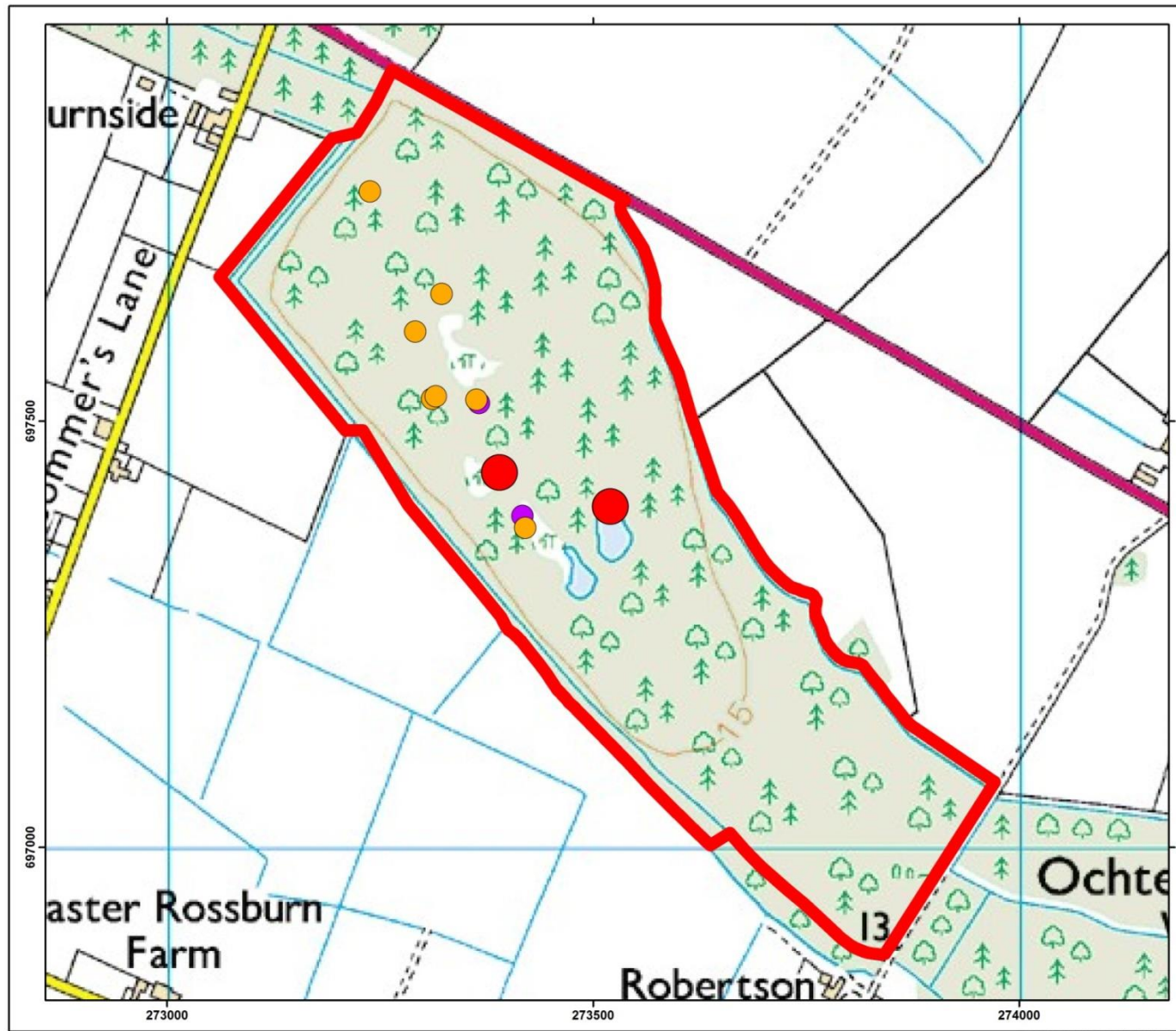


Ochteryre  
Spider SCM 2011



NOT FOR DISTRIBUTION OR REPRODUCTION

# Site Condition Monitoring



Scottish Natural Heritage  
All of nature for all of Scotland

Caledonian Conservation Ltd

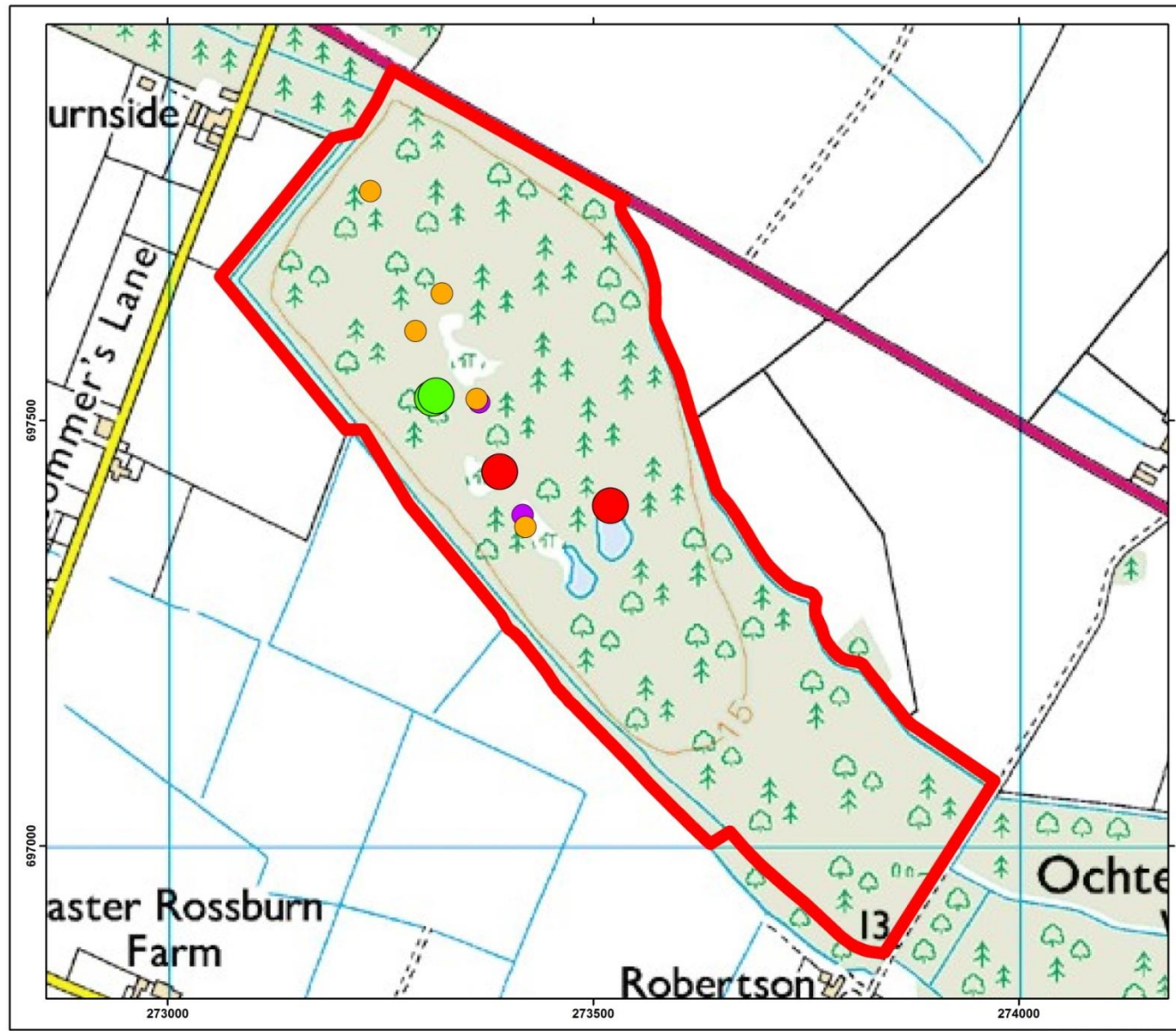
### Key

- Historic Record
- Pitfall
- Active Sample
- SSSI

0 37.5 75 150 m

Ochteryre  
Spider SCM 2011

# Site Condition Monitoring



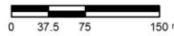
Scottish Natural Heritage  
All of nature for all of Scotland



Caledonian Conservation Ltd

### Key

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



Ochteryre  
Spider SCM 2011

# Site Condition Monitoring



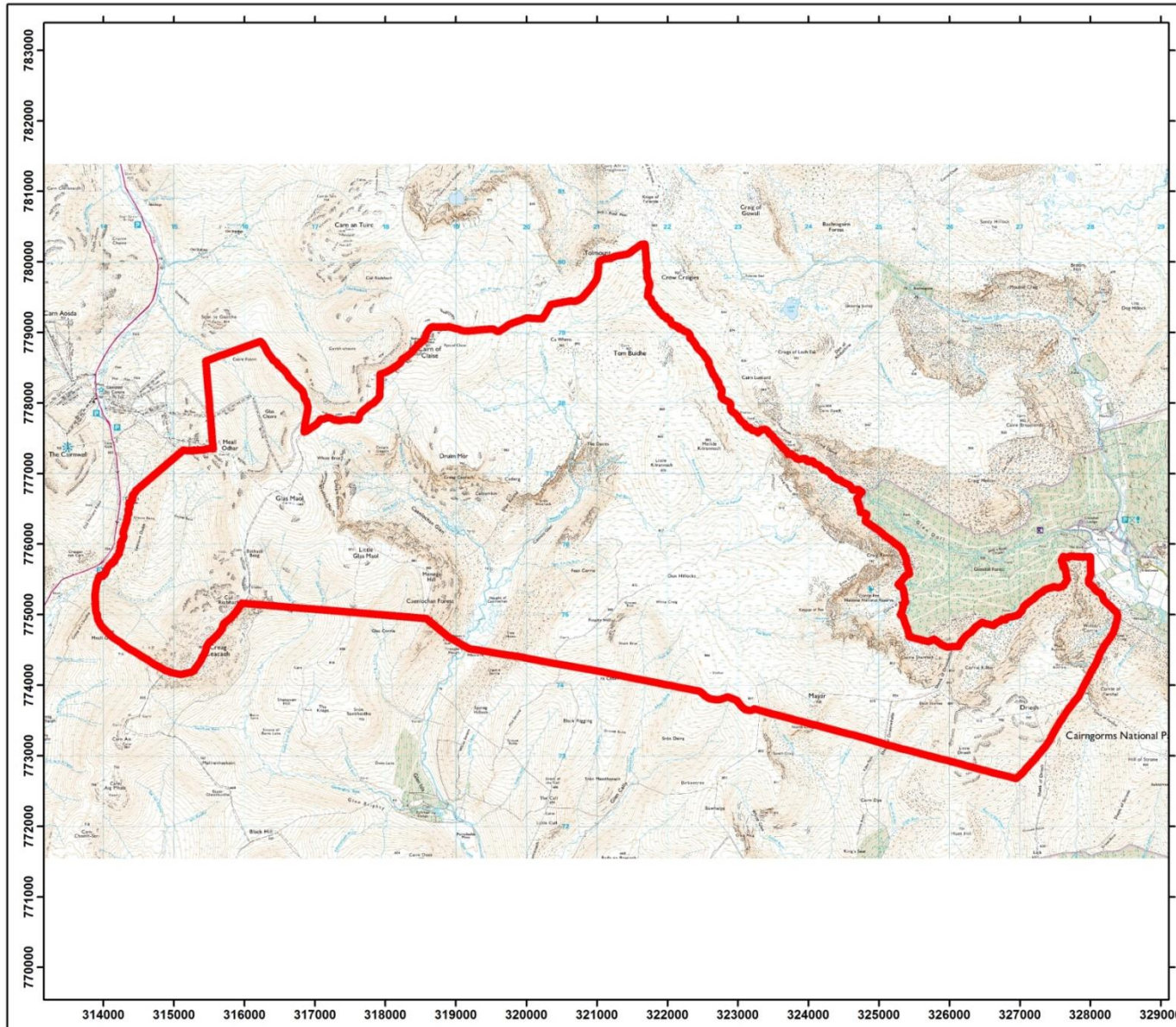
**Caenlochan 2011**

## *Mecynargus paetulus* – Scottish mountain-spider

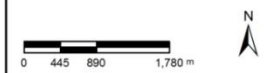
- RDB2
- Elevations above 850m
- Associated with *Nardus strictus* matt grass snow-bed habitats
- ♂ ♀ May & September



# Site Condition Monitoring

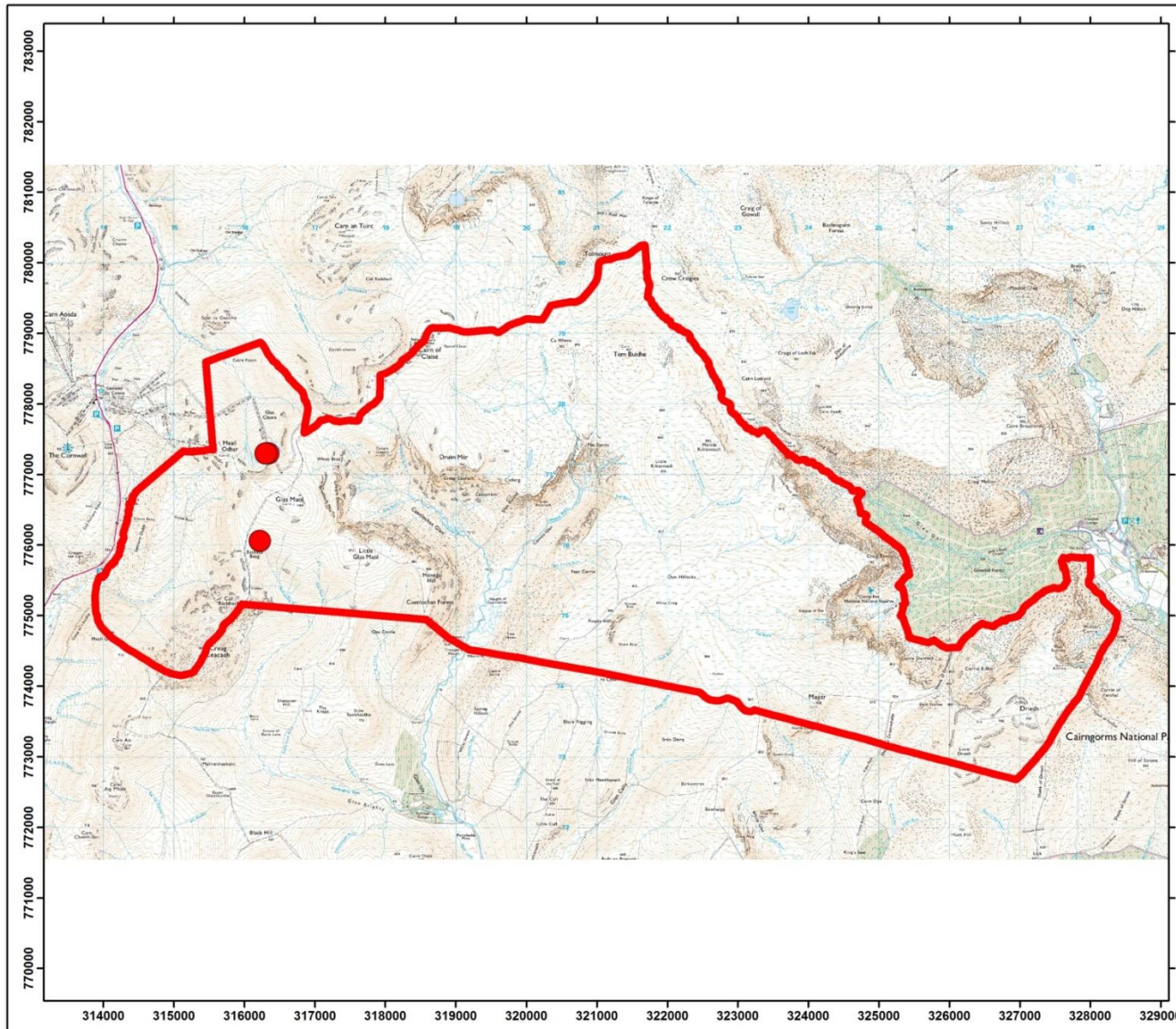


**Key**  
[Red box] SSSI



**Caenlochan**  
**Spider SCM 2011**

# Site Condition Monitoring



## Key

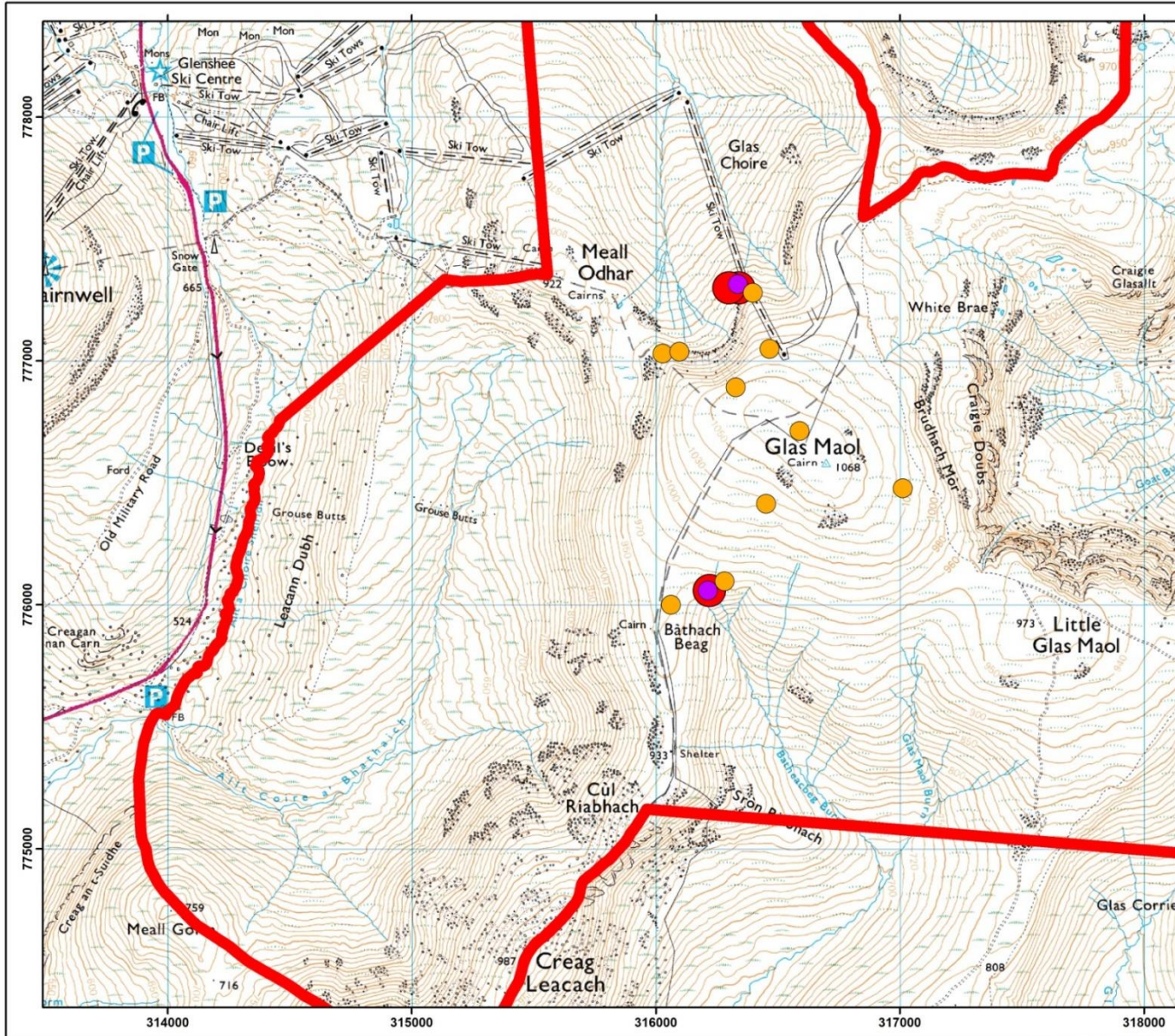
- Historic Record
- SSSI

0 445 890 1,780 m



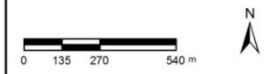
Caenlochan  
Spider SCM 2011

# Site Condition Monitoring



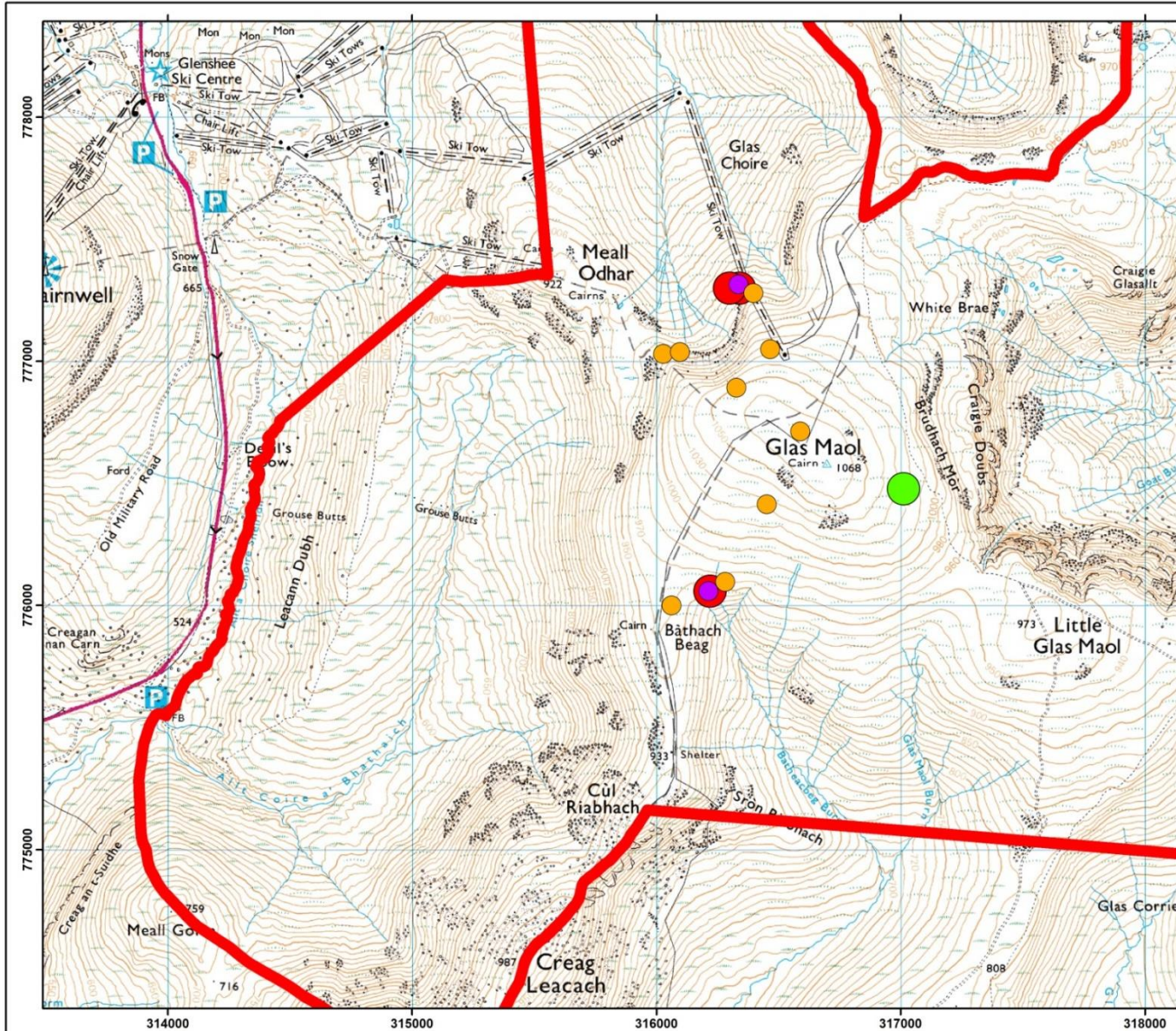
### Key

- Pitfall
- Active Sample
- Historic Record
- SSSI



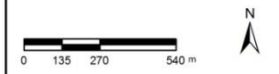
Caenlochan  
Spider SCM 2011

# Site Condition Monitoring



### Key

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



Caenlochan  
Spider SCM 2011

# Site Condition Monitoring



# Site Condition Monitoring



# Site Condition Monitoring



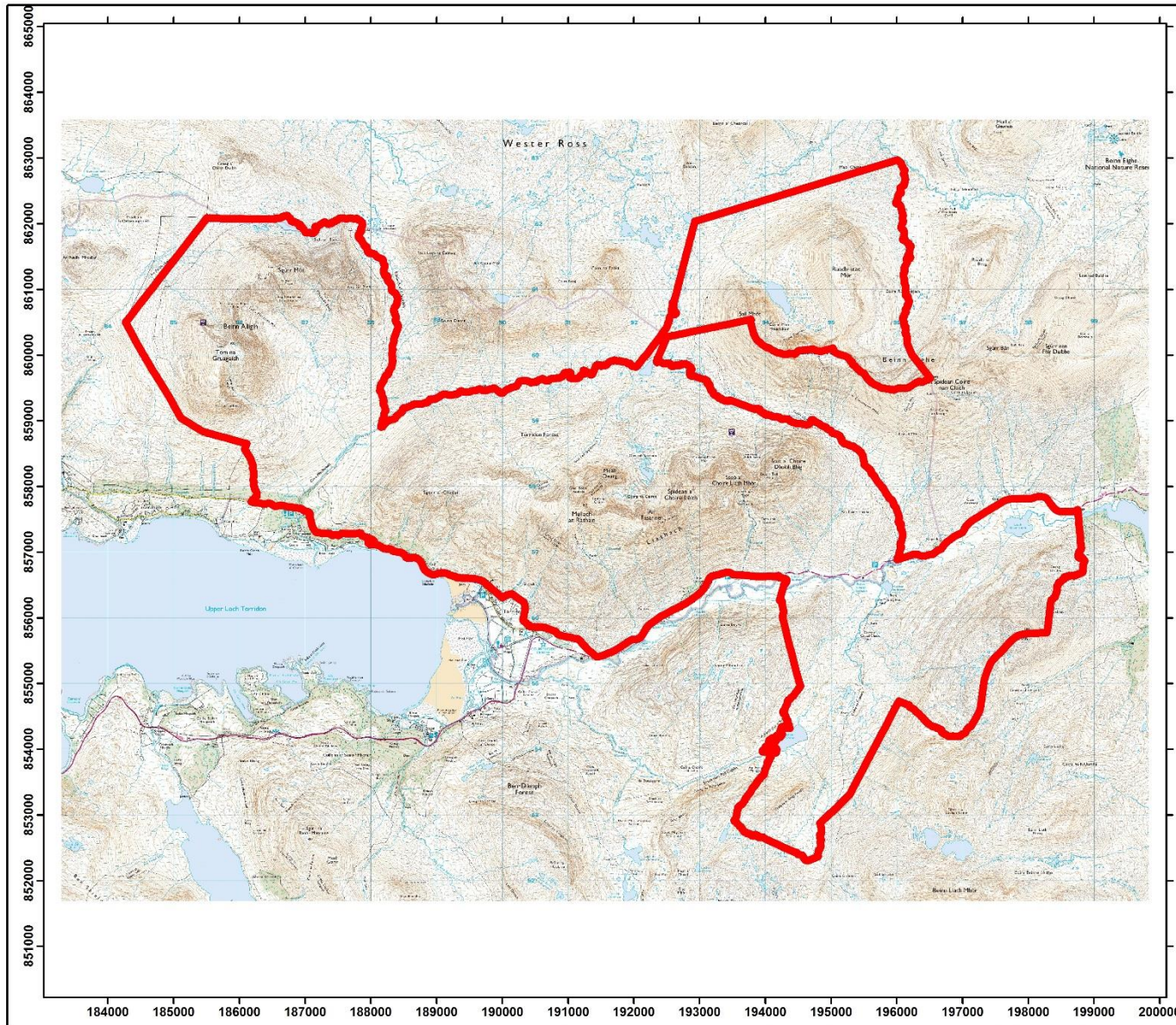
# Site Condition Monitoring



## Torridon Forest 2017



# Site Condition Monitoring



Scottish Natural Heritage  
All of nature for all of Scotland

Caledonian Conservation Ltd

**Key**  
[Red outline] SSSI

0 475 950 1,900 m

N

**Torridon Forest SSSI**

**Invertebrate SCM 2011**

# Site Condition Monitoring



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

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

Search bar: 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

# Site Condition Monitoring



## Mark Telfer's Website

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

- Home
- Identifying beetles
- Pan-species Listing
- Contact

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

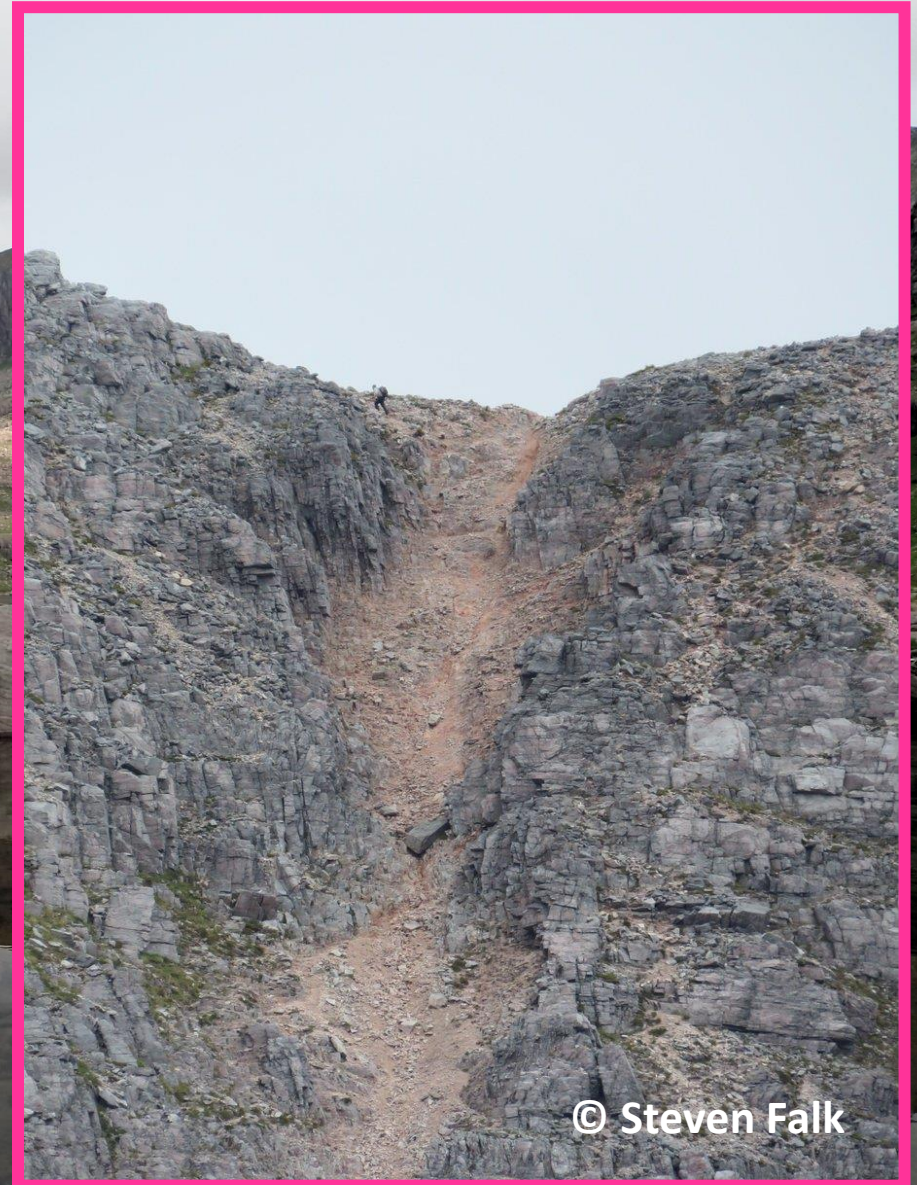
# Site Condition Monitoring



# Site Condition Monitoring



# Site Condition Monitoring



# Site Condition Monitoring



# Site Condition Monitoring

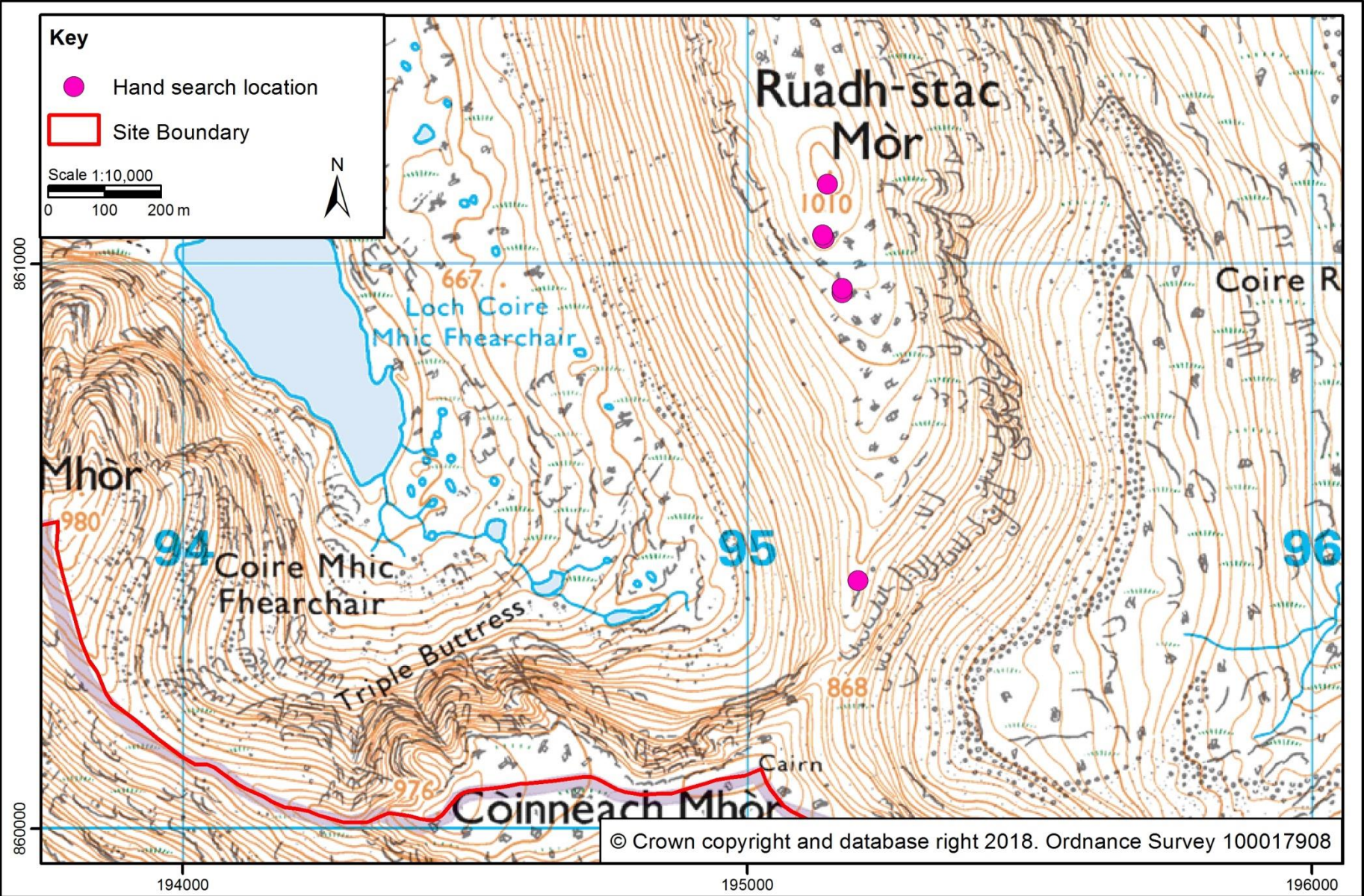


*Phratora polaris*

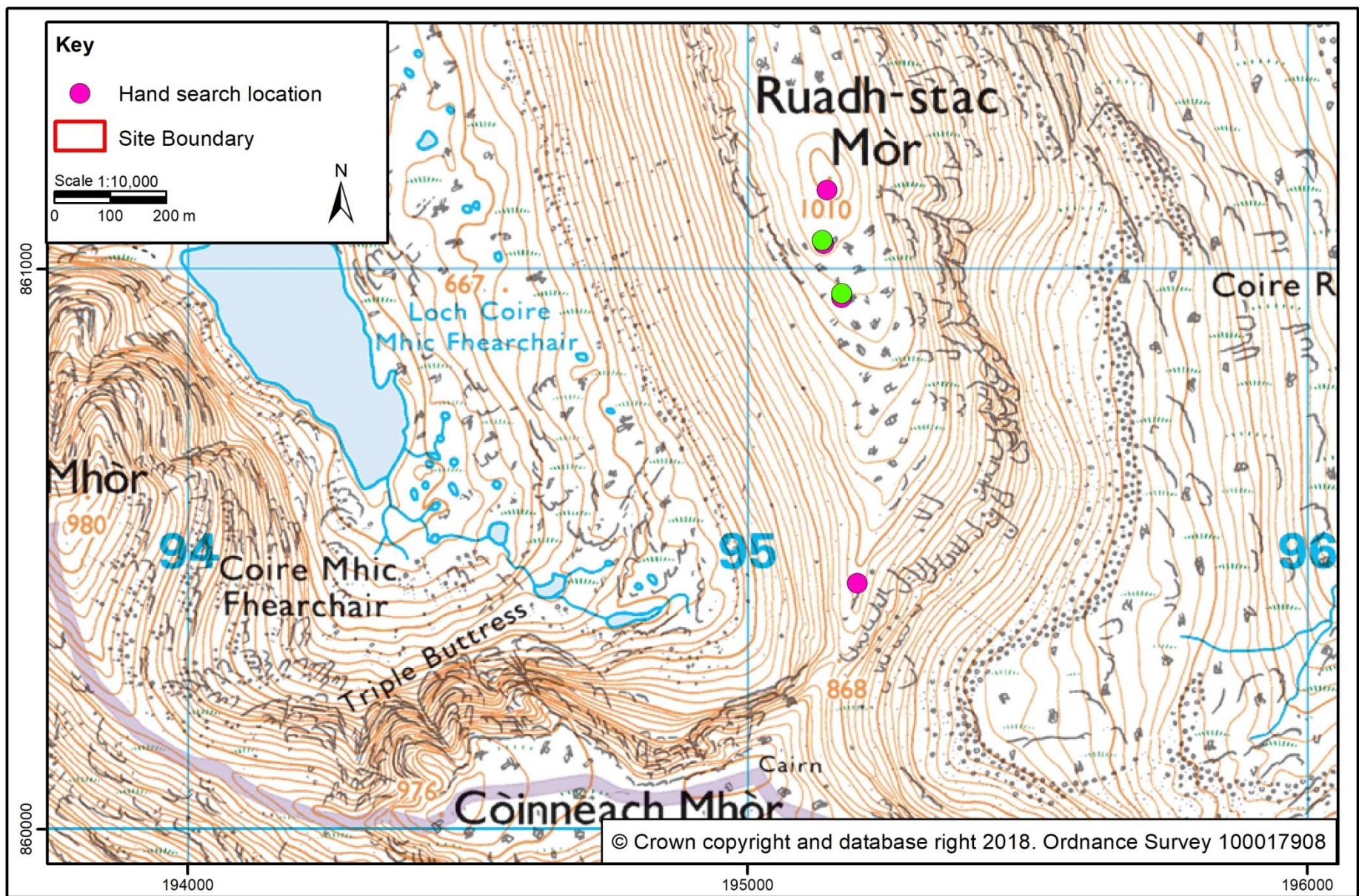




# Site Condition Monitoring



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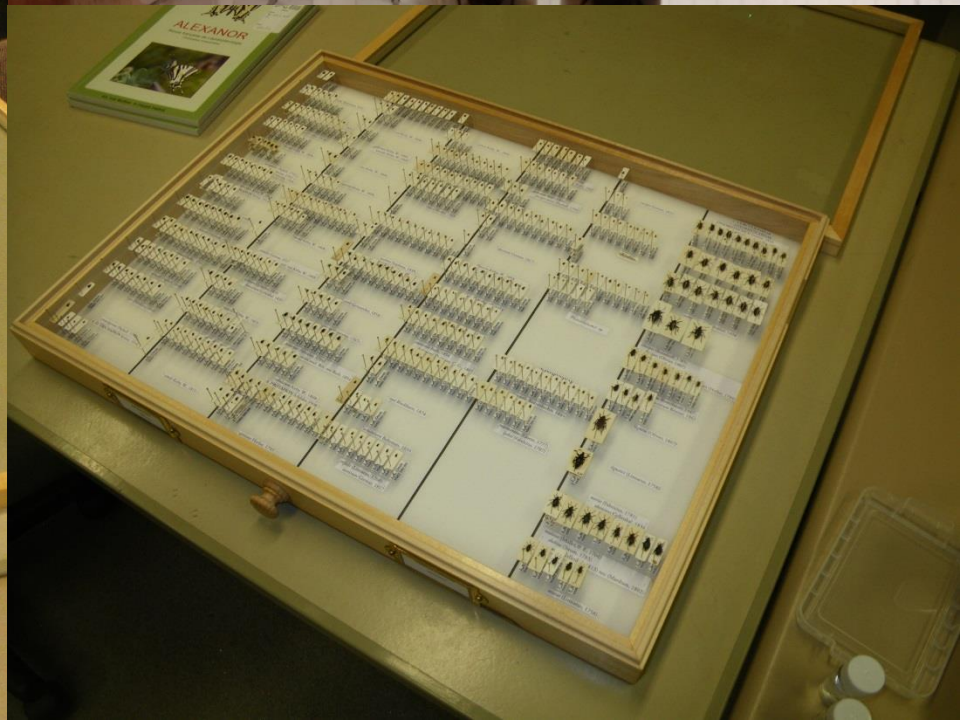


*Phratora polaris*



*Stenus glacialis*

# Site Condition Monitoring



# Site Condition Monitoring

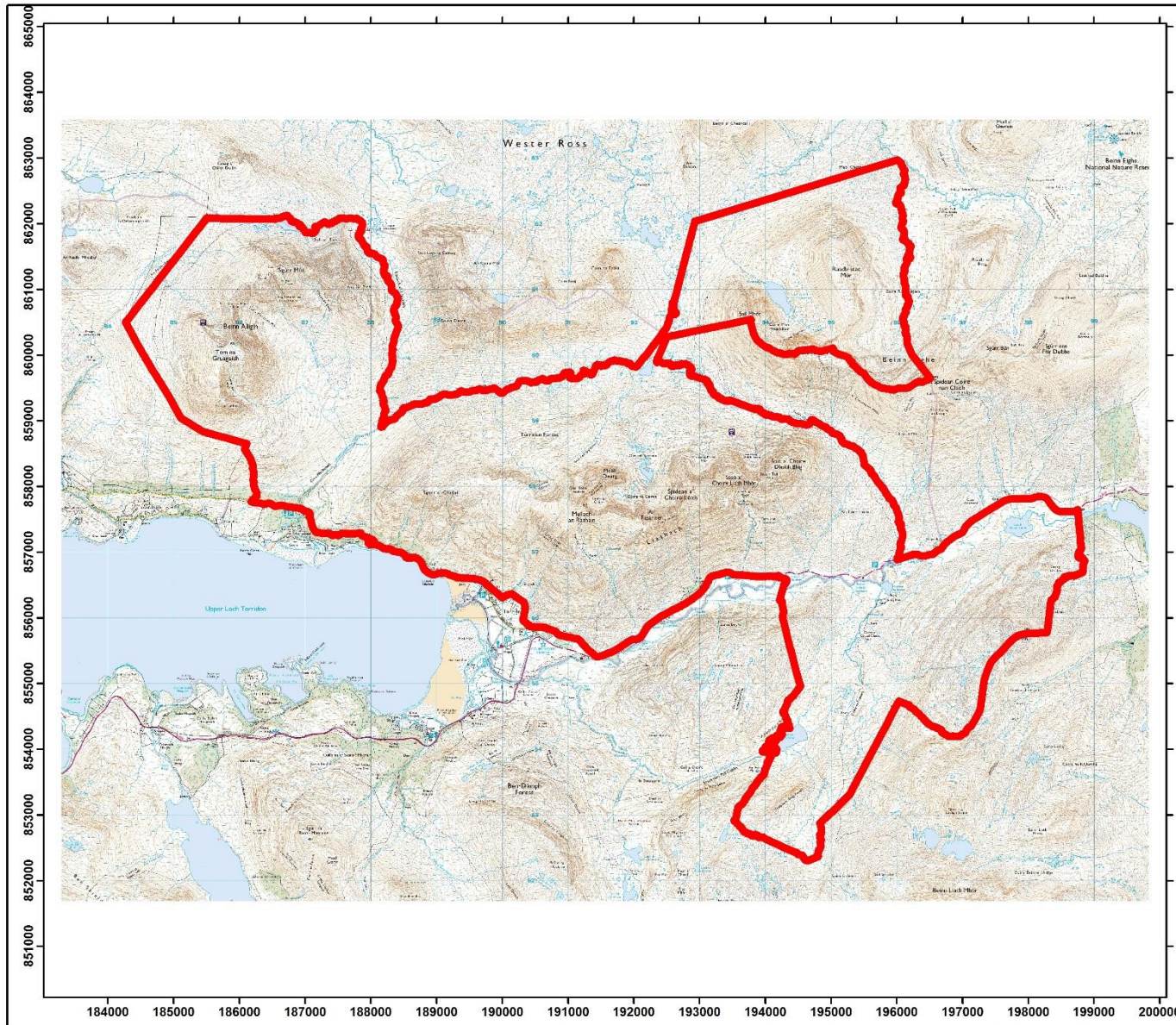


## Torridon Forest 2011

## *Micaria alpina* – Alpine ant-spider

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


# Site Condition Monitoring



Scottish Natural Heritage  
All of nature for all of Scotland

Caledonian Conservation Ltd

**Key**

 SSSI

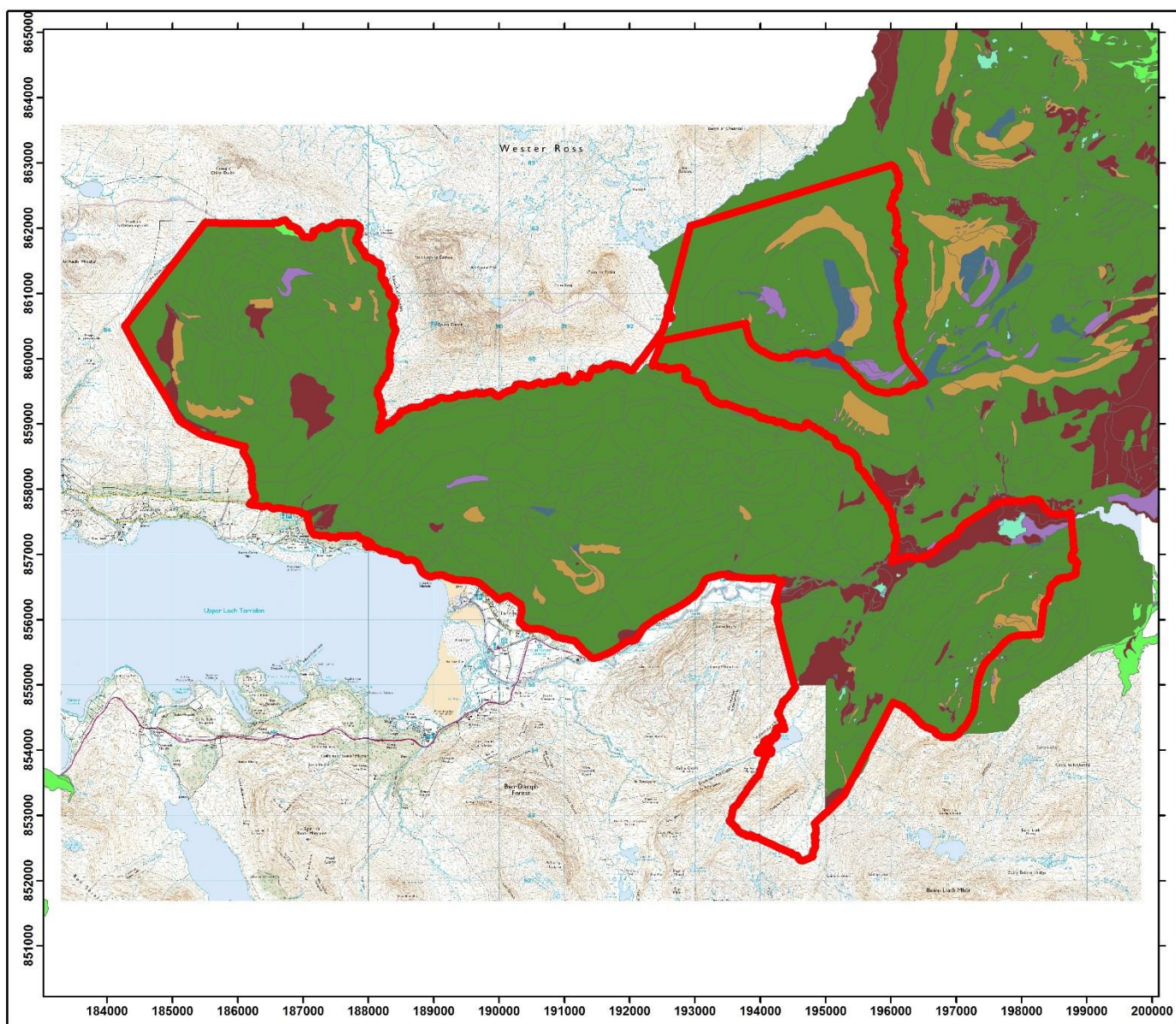
0 475 950 1,900 m

N

**Torridon Forest  
SSSI**

**Invertebrate SCM  
2011**

# Site Condition Monitoring



**Key**

SSSI

**NVC Scotland (SNH)**

**Category**

- A
- CG
- H
- M
- Mosaic
- N/A
- OV
- OW
- S
- U
- W

0 475 950 1,900 m

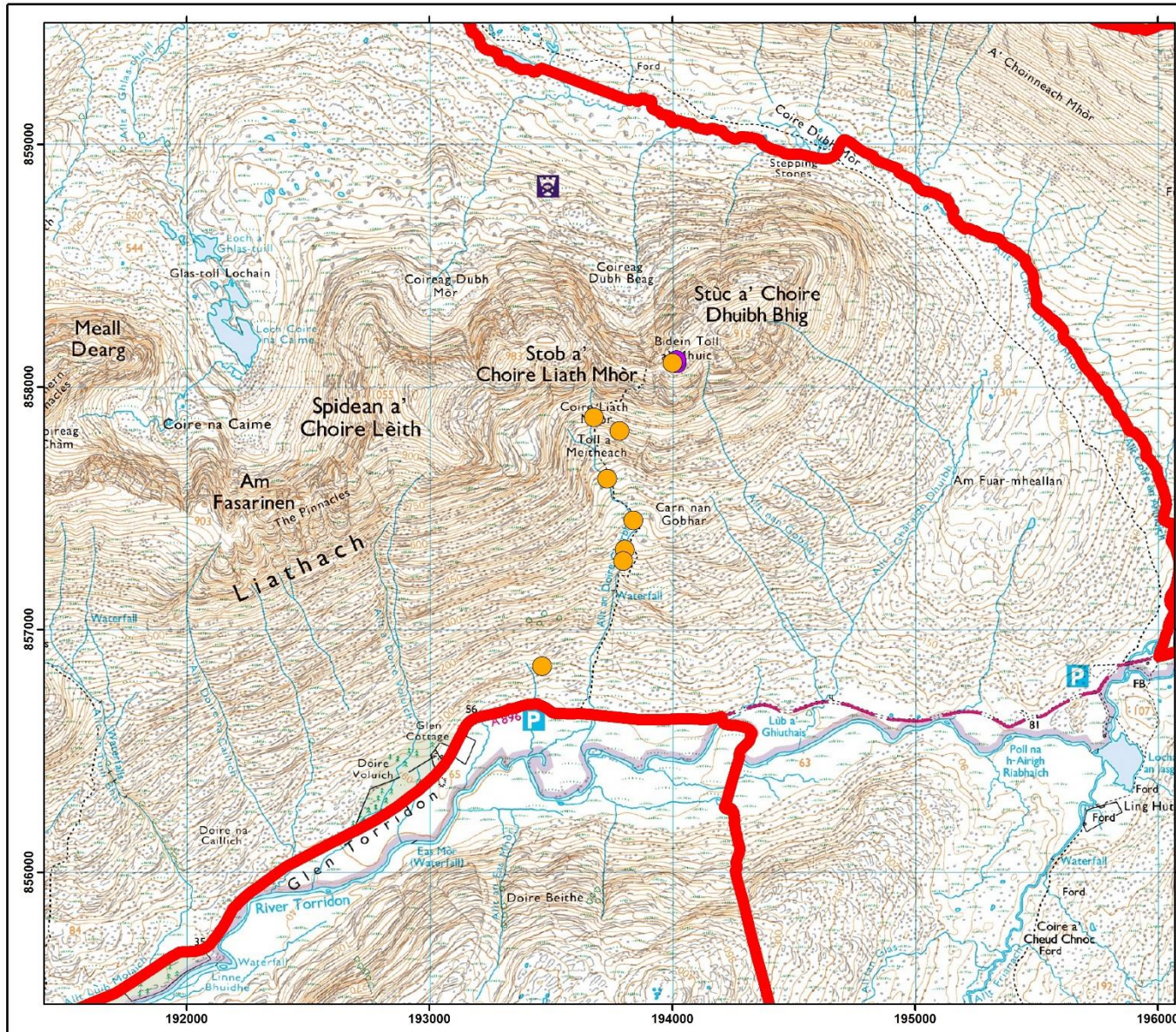
N


**Torridon Forest  
SSSI**


**Invertebrate SCM  
2011**



# Site Condition Monitoring

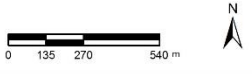



  
 Scottish Natural Heritage  
 All of nature for all of Scotland


  
 Caledonian Conservation Ltd

**Key**

- Pitfall
- Active Sample
- SSSI


  
 0 135 270 540 m

**Torridon Forest SSSI**  
**Invertebrate SCM 2011**

## 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.

# Site Condition Monitoring



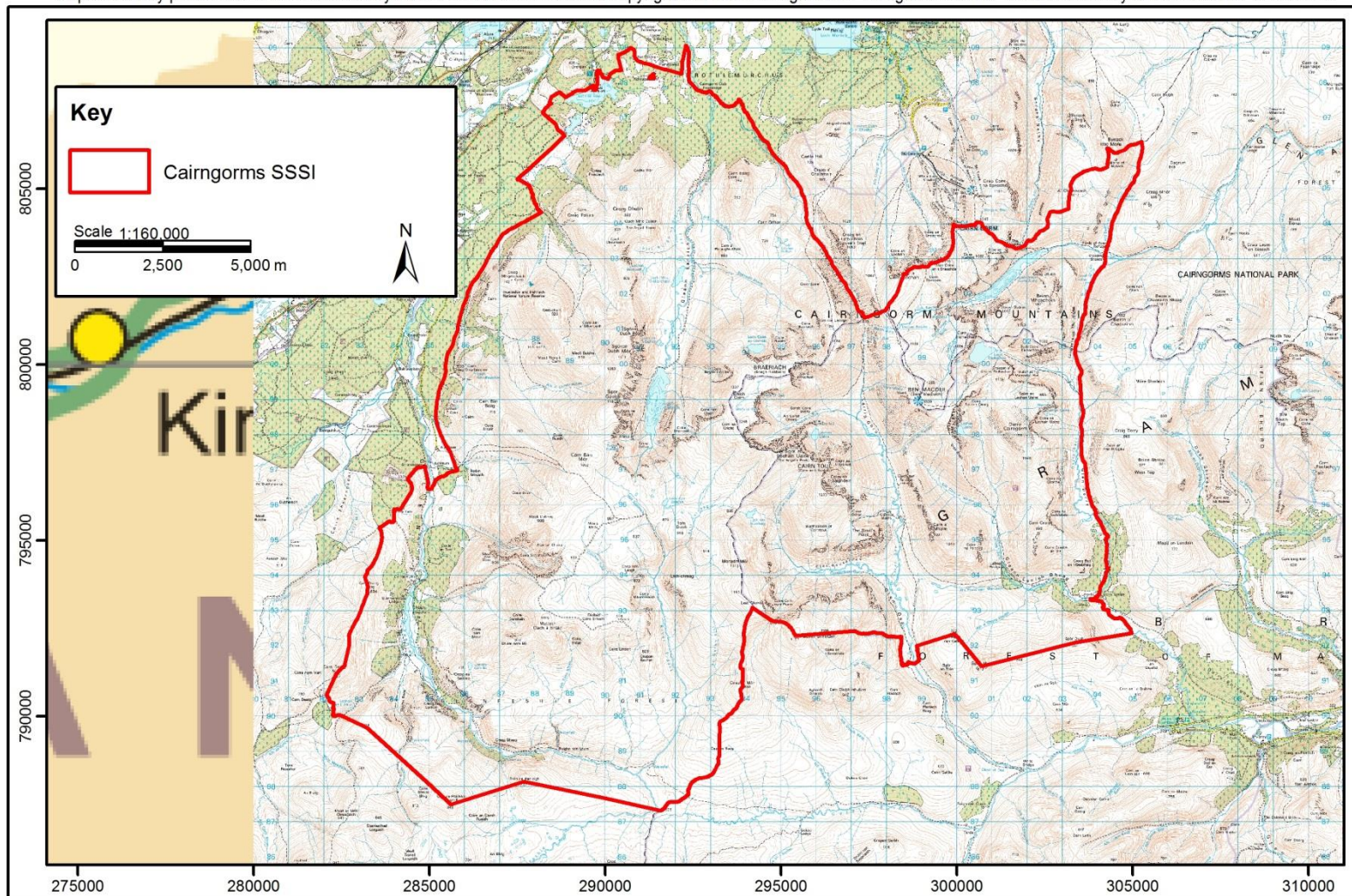
## Cairngorms 2013

## Cairngorms (292.3km<sup>2</sup>)

- 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

# Site Condition Monitoring

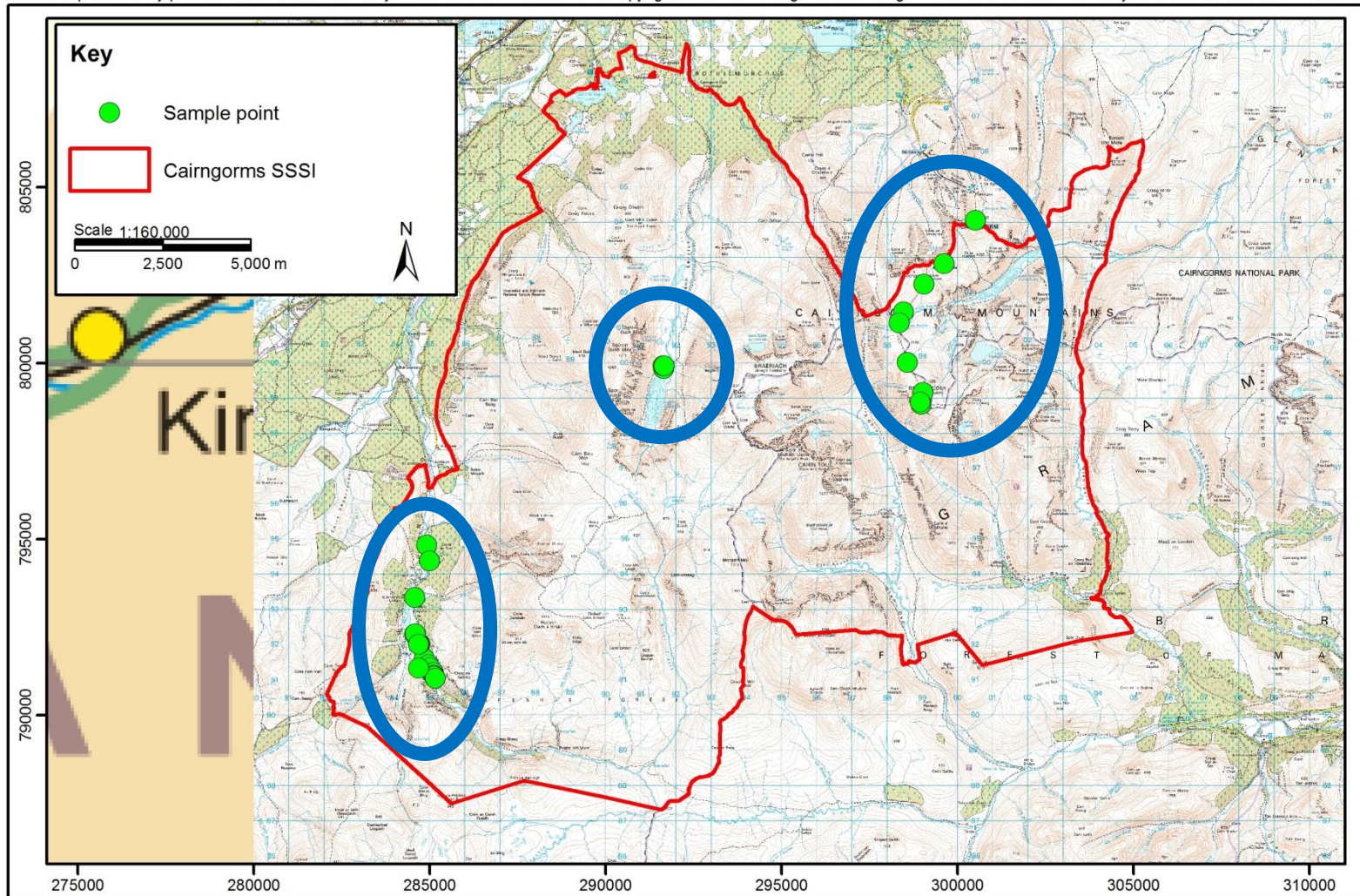
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## Cairngorms: Site

# Site Condition Monitoring

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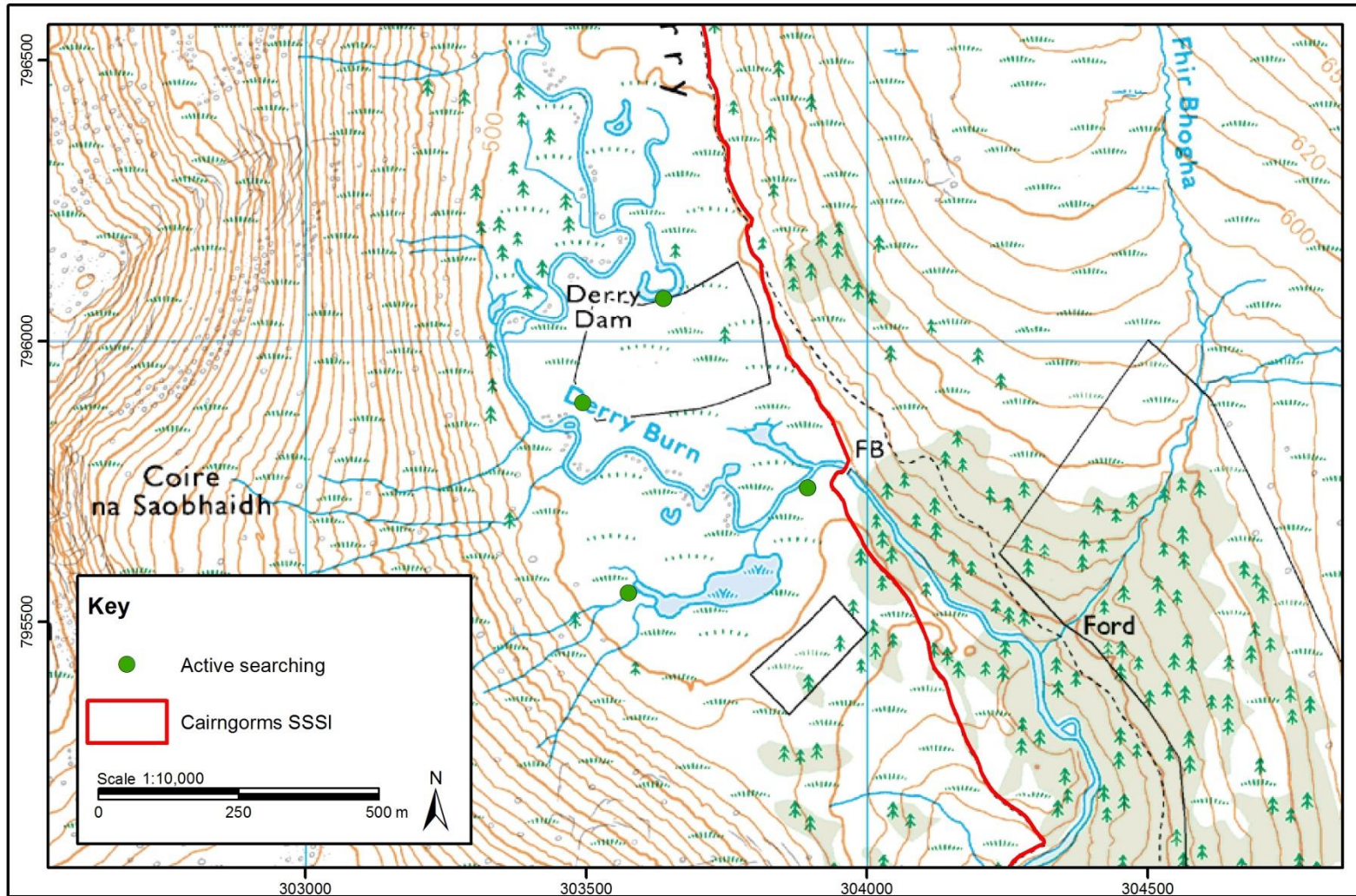


## Cairngorms: Sample Locations

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# Site Condition Monitoring



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## Cairngorms: Odonata Sample Locations



# Site Condition Monitoring



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

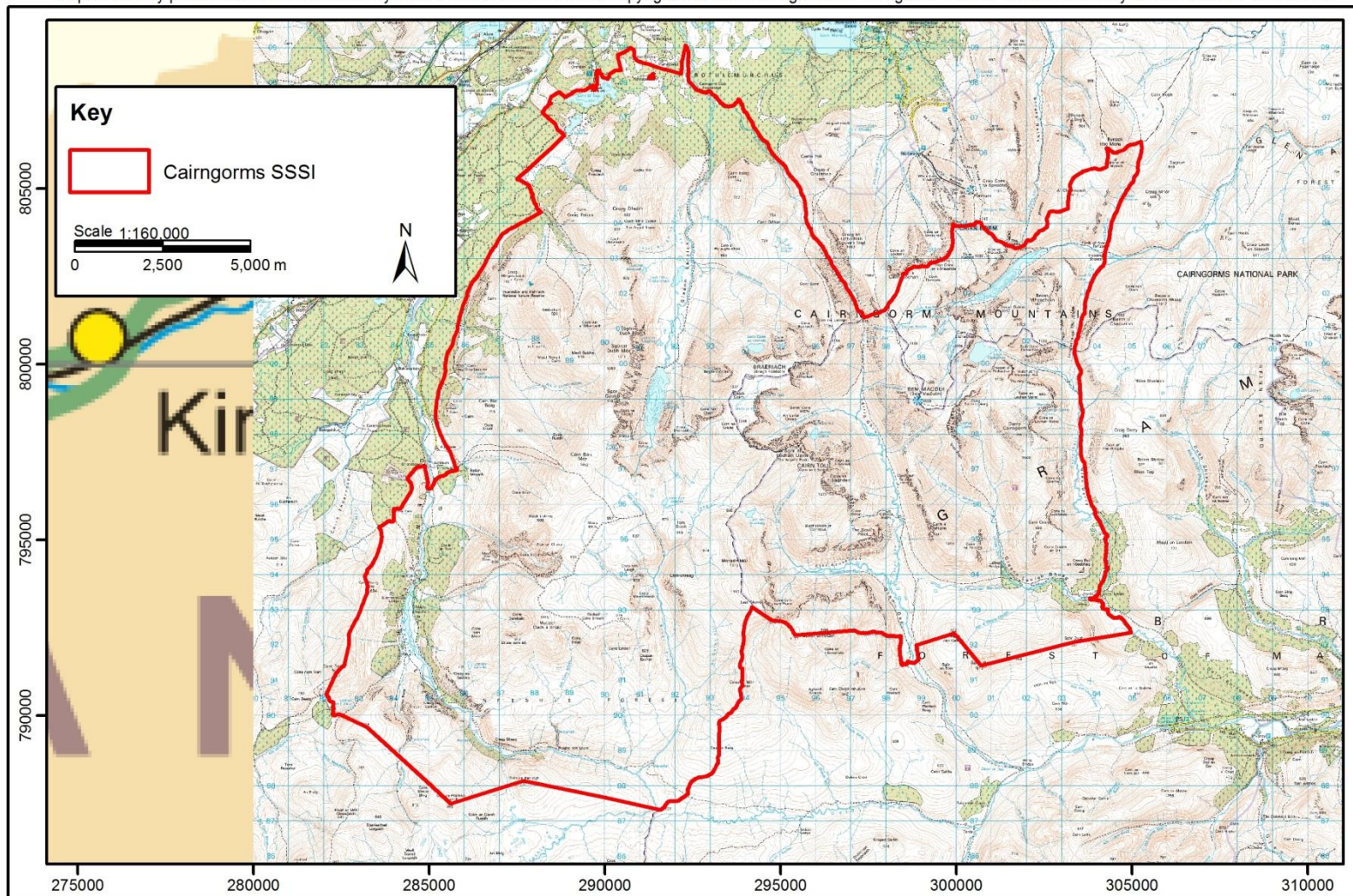
Possible Species	Cairngorms Sites 2013 SCM	Glen Derry 2014 SCM
<i>Aeshna caerulea</i> (azure hawkler)*		
<i>Aeshna juncea</i> (common hawkler)	X b	X b
<i>Coenagrion hastulatum</i> (northern damselfly)		
<i>Cordulegaster boltonii</i> (golden-ringed dragonfly)	X	X
<i>Enallagma cyathigerum</i> (common blue 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)		
<b>Total</b>	<b>9/6b</b>	<b>5/3b</b>

X = present; b = evidence of breeding

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

# Site Condition Monitoring

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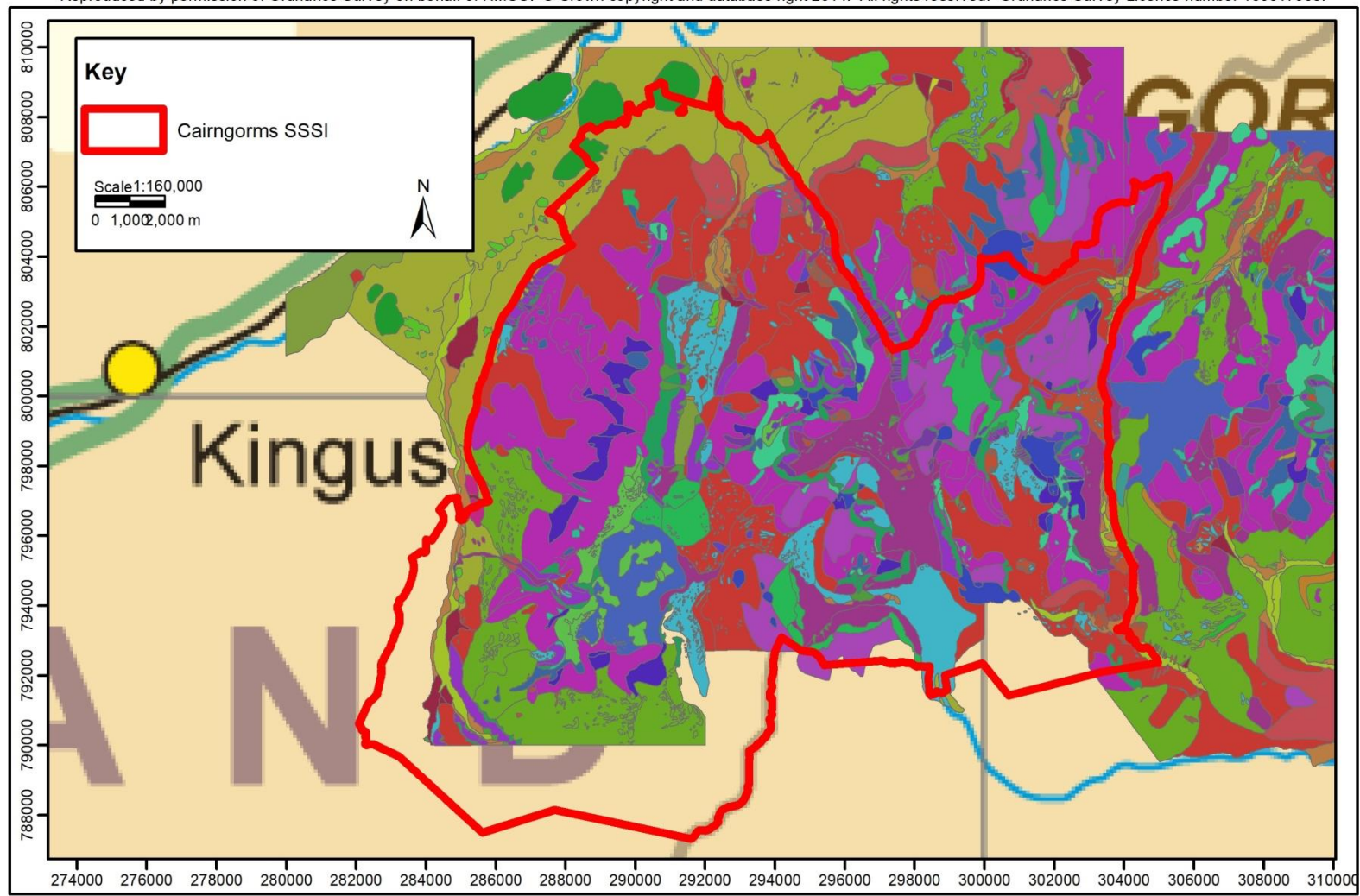


**Cairngorms: Site**

# Site Condition Monitoring



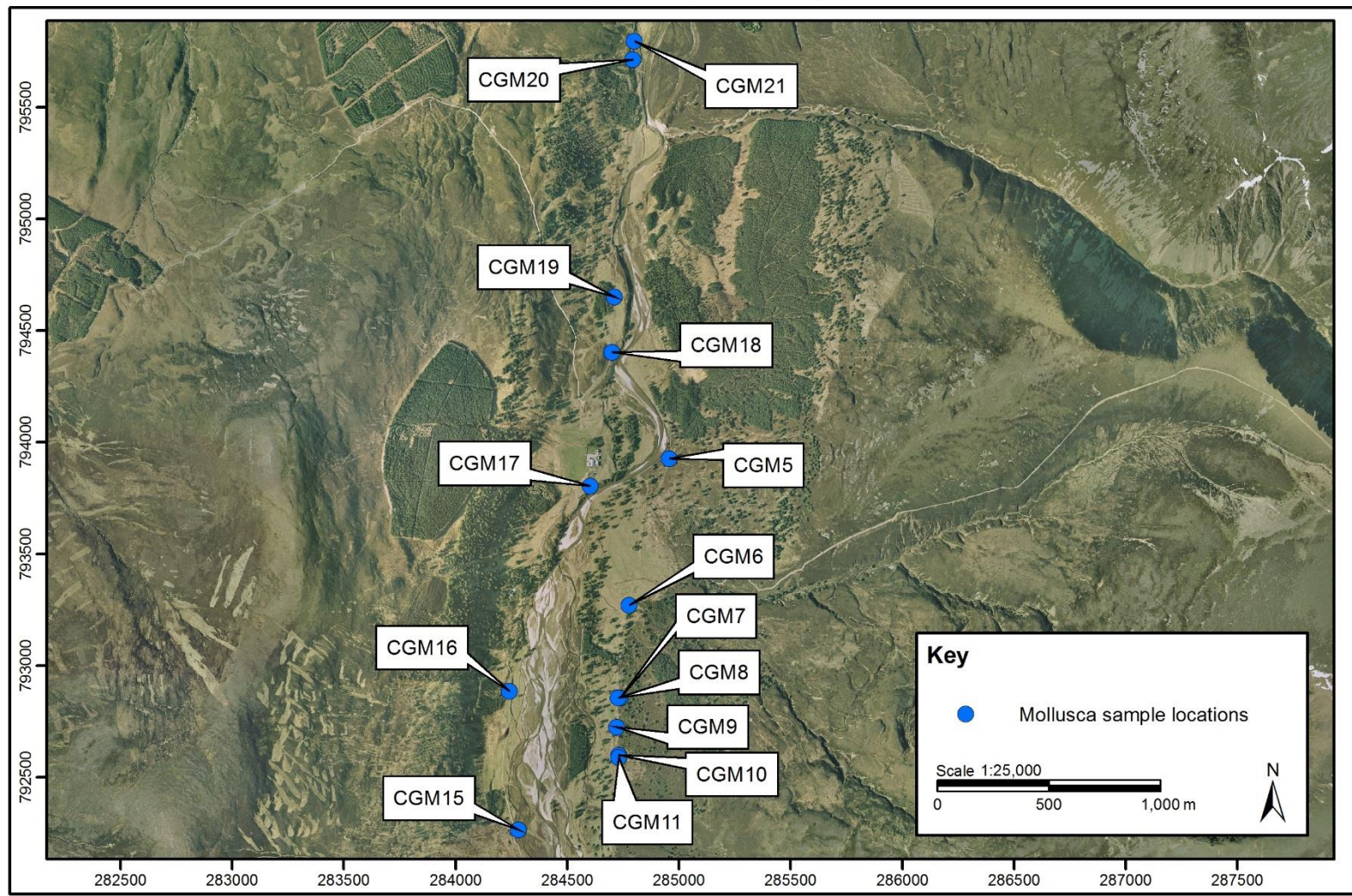
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## Cairngorms: Geology

# Site Condition Monitoring

Aerial images provided by SNH. © GetMapping Plc 2014



## Cairngorms: NW Mollusc Sample Locations

# Site Condition Monitoring



**Rum 2015**

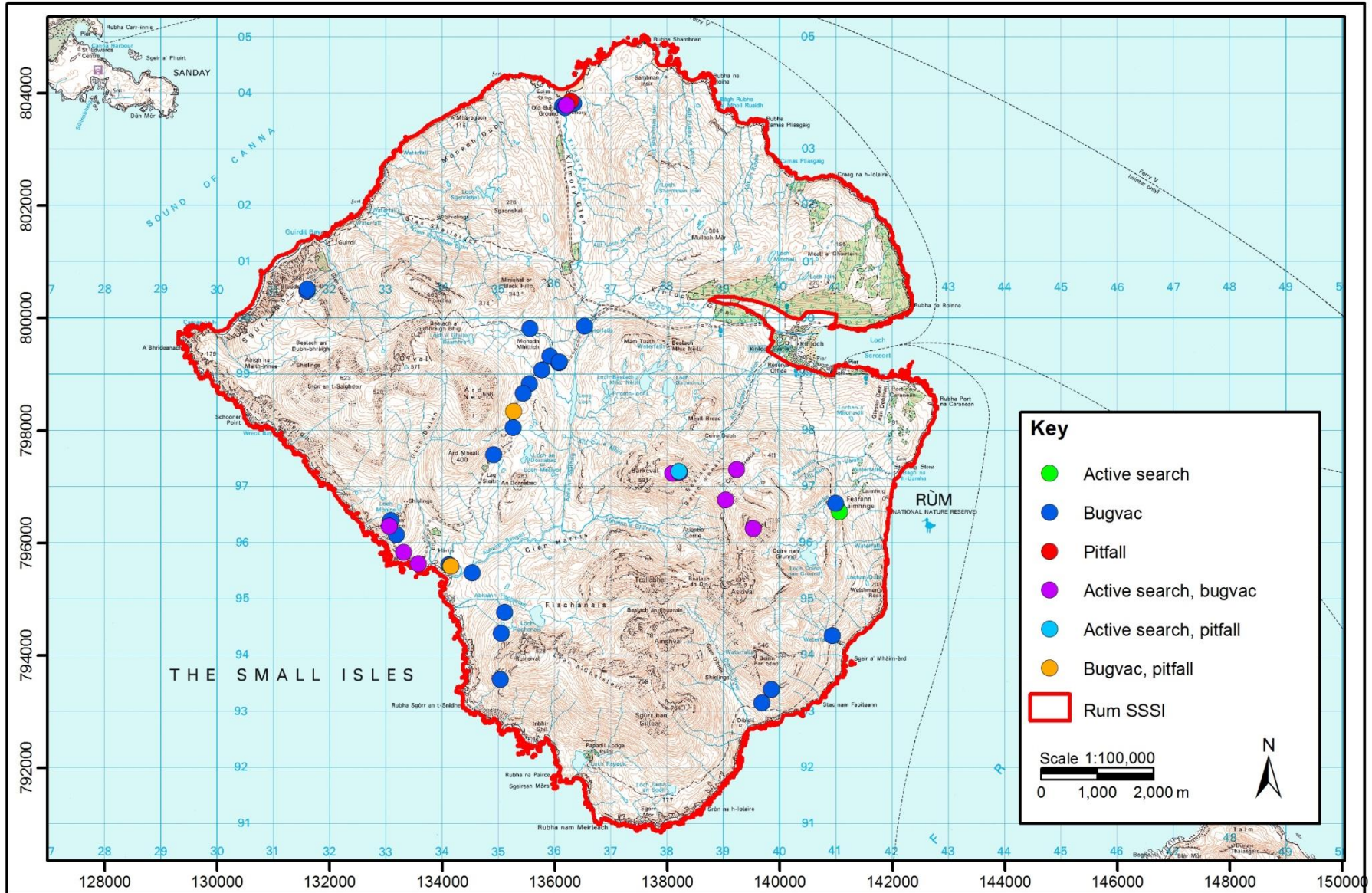
# Site Condition Monitoring



- 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.

# Site Condition Monitoring

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# Non-native Species



## Alpine Newt

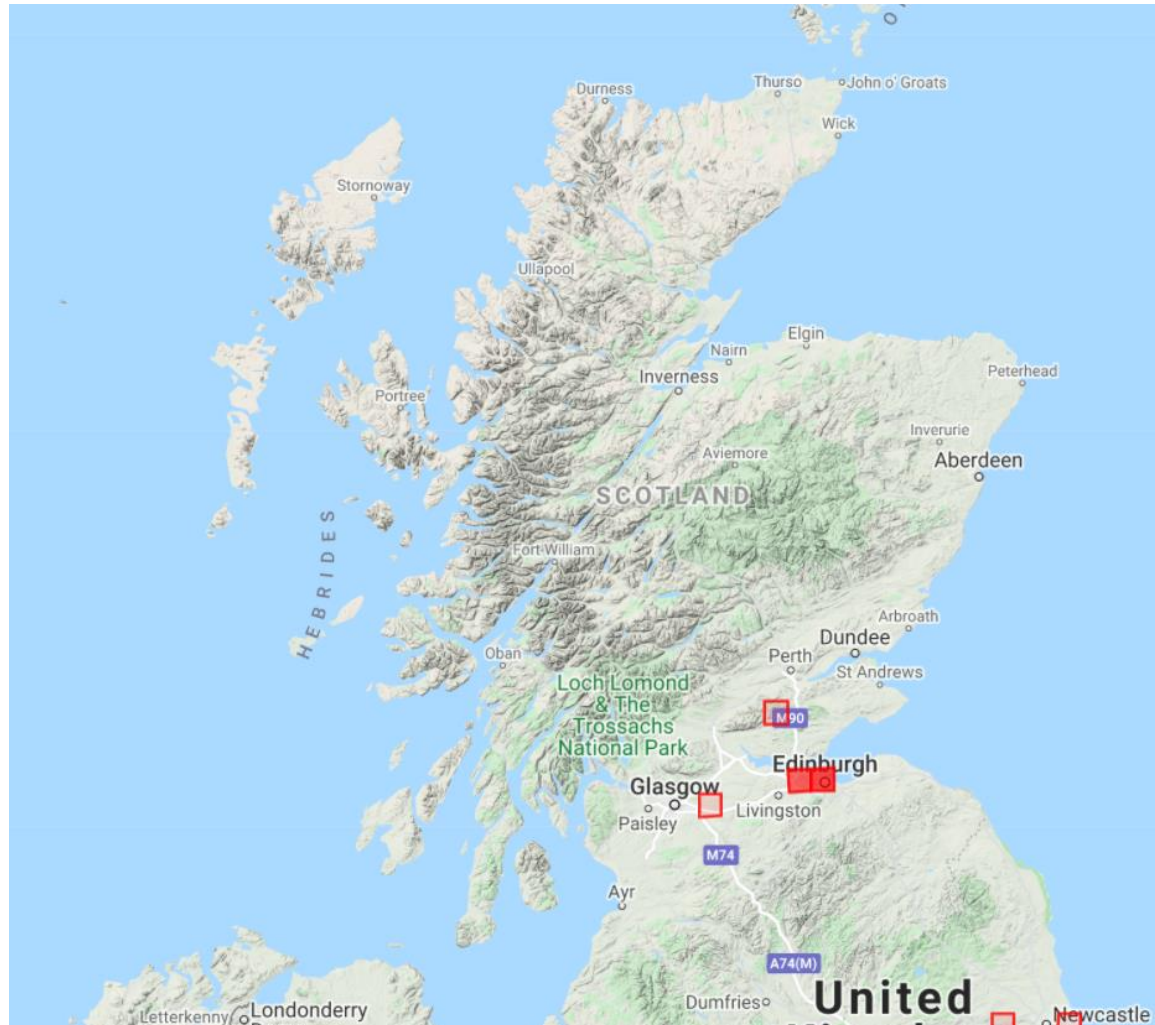




# Non-native Species



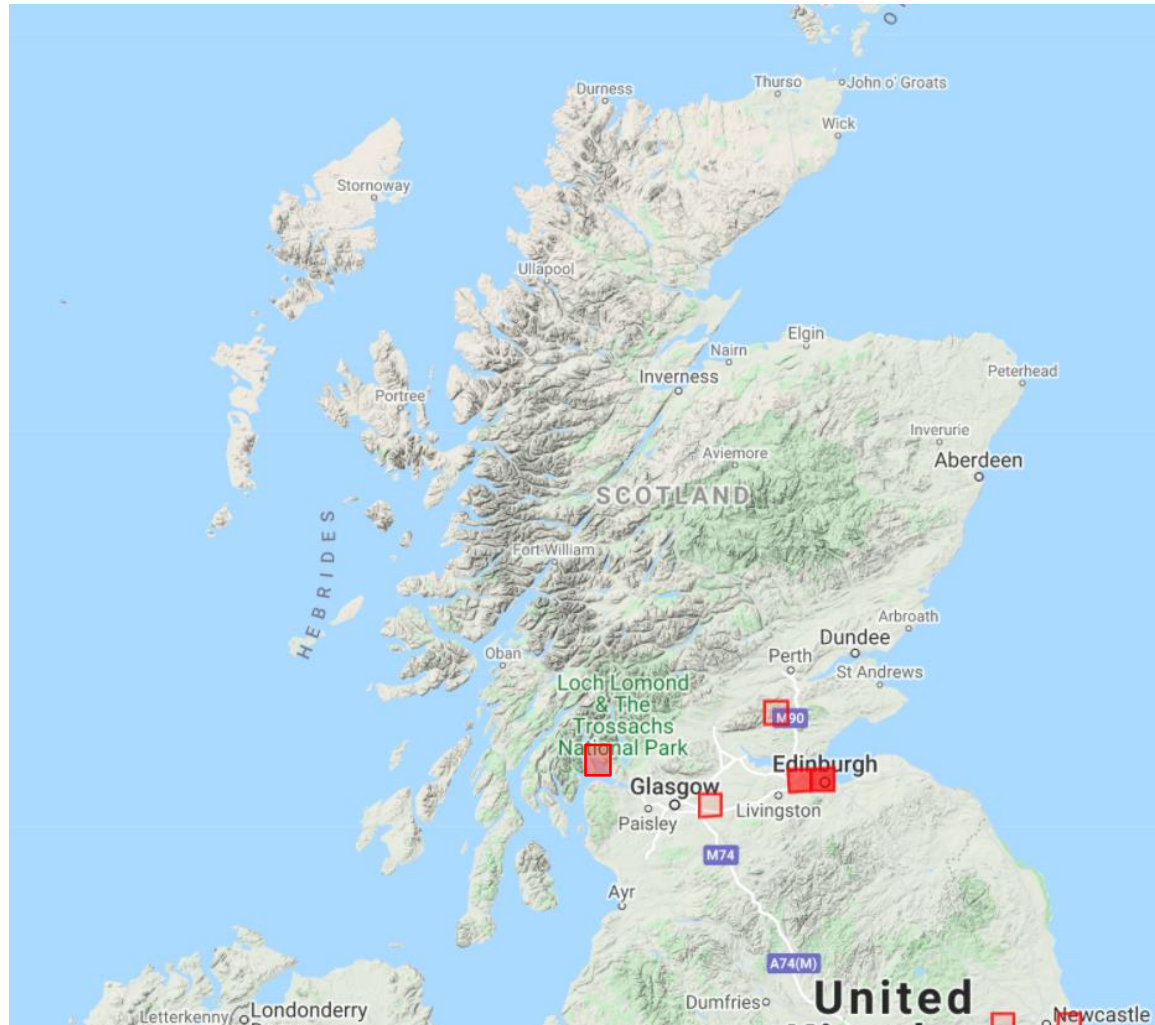
## Alpine Newt



# Non-native Species



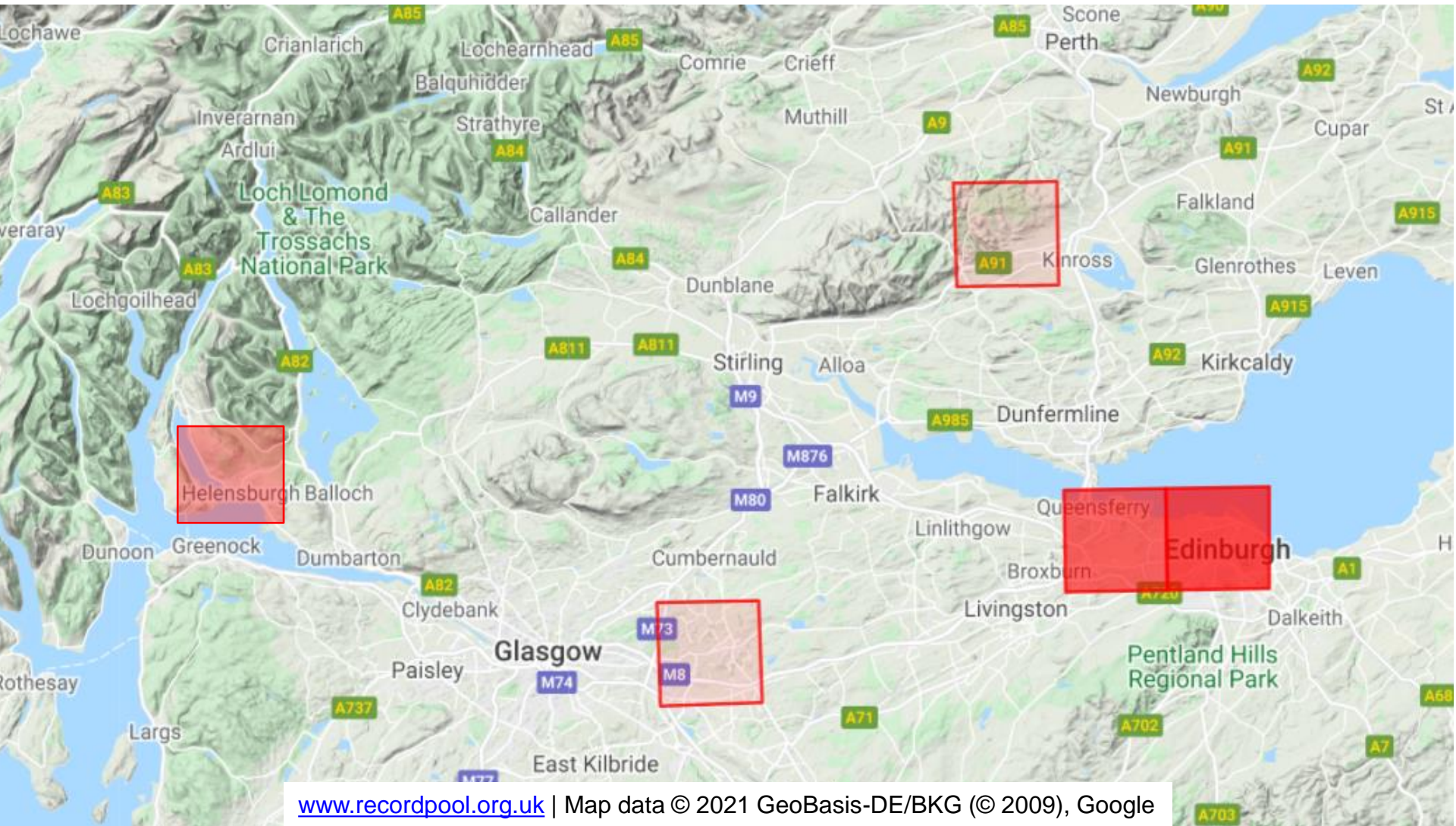
## Alpine Newt



# Non-native Species



## Alpine Newt



# Non-native Species



## Alpine Newt



# Non-native Species



## Alpine Newt

### Details

- *Ichthyosaura alpestris*
- Native to Central Europe
- Asymptomatic carrier of amphibian disease which can negatively affect native species
- Available to buy in the UK

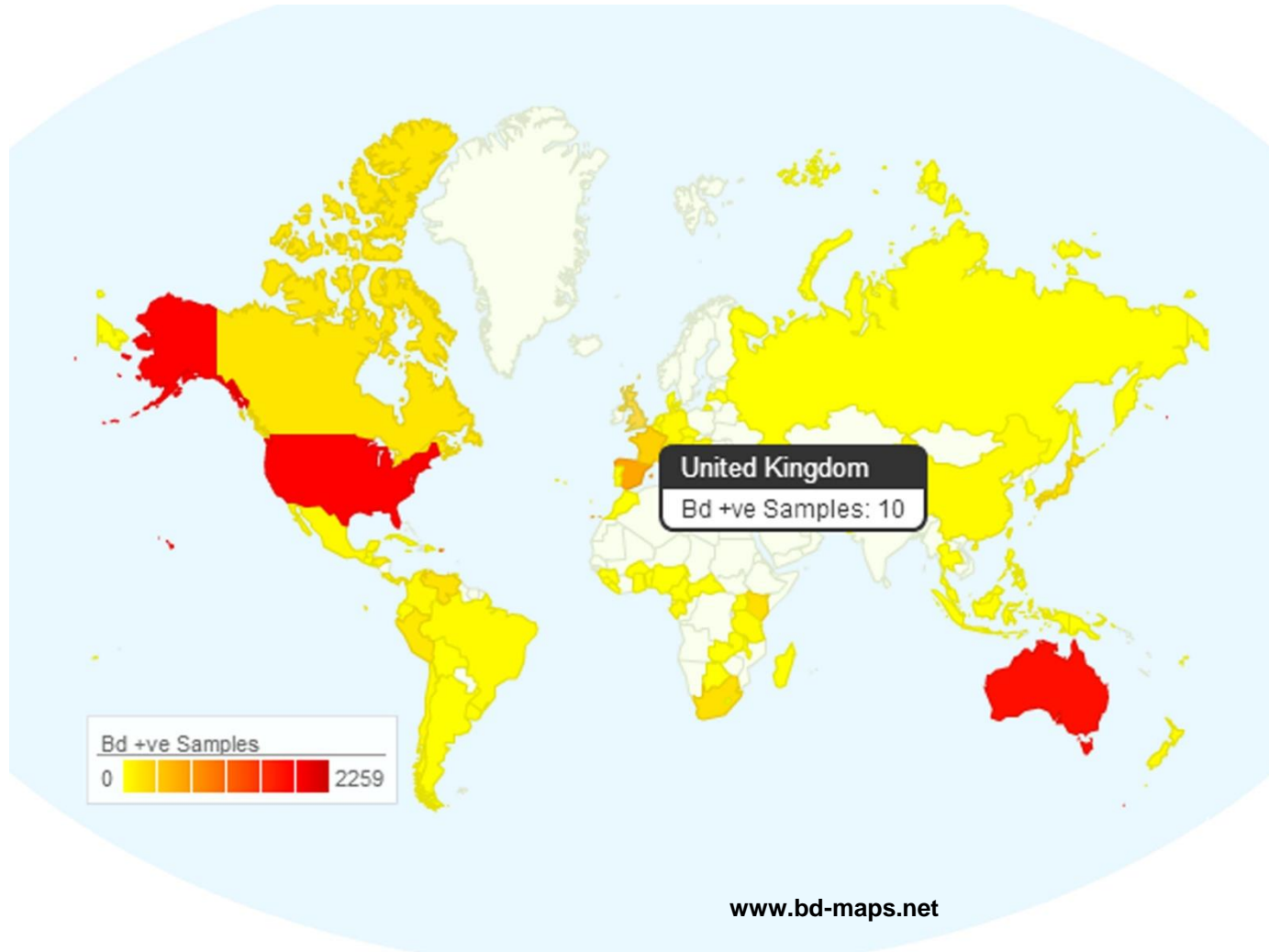


© Chris Cathrine

# Non-native Species



## Alpine Newt



## Alpine Newt

### Populations

Edinburgh (spreading)  
Newbridge (spreading)  
Helensburgh (contained?)  
Glenboig (new)  
Crook of Devon (new)

Appears to be moving along  
railway embankments

Risk of wide dispersal along  
Union Canal



## Conclusions

- Important to use the right data for the project:



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  - Species specific
  - Habitats
  - Landscape scale

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  - Species specific
  - Habitats
  - Landscape scale
- Be aware of permissions & data limitations.
- Confidentiality / sensitivity.
- Under-recorded groups.

**ABSENCE OF RECORDS DOES NOT  
DEMONSTRATE ABSENCE**

## Recording

- Never destroy historic data!
- Keep recording, with as much detail as possible:
  - What?
  - Where?
  - When?
  - Who?
- Photographs are super helpful!
- Share data.

## Access Caledonian Conservation Ltd Data

← → ↻ <https://registry.nbnatlas.org/public/show/dp4> ☆ 📄 🗺️ 🔄 ⌵ 👤 ⋮

NATIONAL BIODIVERSITY NETWORK TRUST NBN FORUM NBN ATLAS 🔒 LOG IN

SEARCH 🔍 JOIN OR DONATE NBN ATLAS NEWS CONTACT US LOG IN CHOOSE NBN ATLAS

NBN atlas SPECIES LOCATIONS ▾ ANALYSE GET INVOLVED ▾ DATA AND PARTNERS ▾ ABOUT ▾ HELP

Home > Data partners > Caledonian Conservation

### Caledonian Conservation

#### Description

Providing a range of ecology and ornithology services for development and conservation in the UK

#### Resources

- [Caledonian Conservation Ltd Incidental Records 2014 onwards](#)  
Includes incidental biological records of a wide range of taxa collected from 2014 onwards.
- [Creag Riabhach Wind Farm: 2012-13 Ornithology and Protected Mammal Surveys](#)  
This dataset was gathered as part of a contract to undertake pre-construction ornithology and protected mammal surveys for Creag Riabhach Wind Farm in 2012-13. It provides the results of flight activity surveys, breeding bird surveys, and protected mammal surveys. Note that this dataset includes sensitive records of protected species and species of conservation concern...
- [Incidental herptile records 2005-16](#)  
Incidental records of herptile (reptile and amphibian) species recorded between 2005 and 2016.
- [Mains of Kinblethmont Solar Park Amphibian Records 2014](#)  
Amphibian species recorded during a Great Crested Newt (GCN) presence survey of a pond with suitable habitat for GCN. The GCN survey was carried out to inform the Ecological Appraisal for a potential solar park.
- [SNH Invertebrate Site Condition Monitoring 2013/14: Abernethy Forest SSSI](#)  
this dataset was gathered as part of a Scottish Natural Heritage contract in 2013/14. It provides the results of invertebrate surveys designed to inform Site Condition Monitoring at Abernethy Forest SSSI...
- [SNH Invertebrate Site Condition Monitoring 2013/14: Alvie SSSI](#)  
This dataset was gathered as part of a Scottish Natural Heritage contract in 2013/14. It provides the results of invertebrate surveys designed



8,093 records

#### Data access

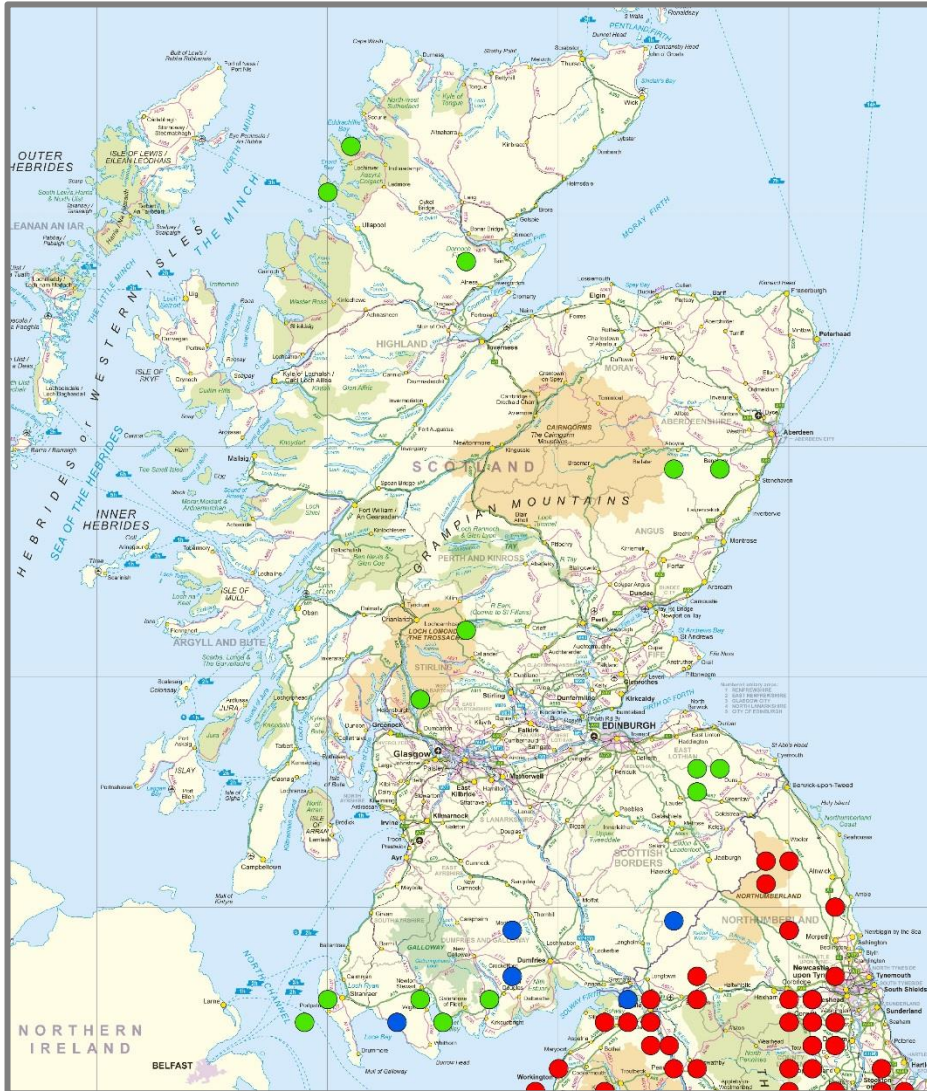
- View records
- Download usage stats
- Alert me about new records
- Alert me about annotations

100% records have verified identifications



<https://nbnatlas.org/>

# Grass Snakes in Scotland



## Provisional distribution of grass snakes (*Natrix* sp.) in Scotland

**Chris Cathrine**

[chris.cathrine@caledonianconservation.co.uk](mailto:chris.cathrine@caledonianconservation.co.uk)

[www.caledonianconservation.co.uk](http://www.caledonianconservation.co.uk)

Enter your records at:  
[www.scottishgrasssnakes.org](http://www.scottishgrasssnakes.org)





# How Biodiversity Data Benefits Conservation in Planning and Other Applications



**Chris Cathrine (Director)**

Caledonian Conservation Ltd

[chris.cathrine@caledonianconservation.co.uk](mailto:chris.cathrine@caledonianconservation.co.uk)

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