

Freasdail Wind Farm Grid Connection: Reptile Mitigation



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The Vanishing Viper: Priorities for adder conservation. 9 October 2016, Cheddar.



Overview

- Caledonian Conservation Ltd
 - Who we are
 - What we do
- Project
- Survey
- Mitigation
- Results (to date)
- Conclusions



Who We Are

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

Freasdail Wind Farm Grid Connection: Reptile Mitigation



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Caledonian Conservation Ltd: what we do

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

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Caledonian Conservation Ltd: what we do

- Non-Governmental Organisations / Charities
 - Surveys
 - Conservation research
 - Conservation management
 - Public interpretation (TV/film, events, photos)
 - Advocacy / representation
 - Hosted Amphibian & Reptile Conservation Trust Scottish Officer & support project

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Scottish Natural Heritage Dualchas Nàdair na h-Alba

History

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Scottish Natural Heritage
Dualchas Nàdair na h-Alba
2008-2016
www.snh.gov.uk

COMMISSIONED REPORT

Commissioned Report No. - SNH use only
Great crested newt mitigation guidelines

For further information on this report please contact:

Name of SNH Project Manager - SNH use only
Scottish Natural Heritage
Great Crested Newt
2016-2017
2016-2017
Telephone: 01753 474444
Email: freasdail@snh.gov.uk - SNH use only

This report should be signed off:

Chris C. Foster, J & Whitehurst J (ARC) 2016 - Great crested newt mitigation
guidelines - Scottish Natural Heritage Commissioned Report No. - SNH use only

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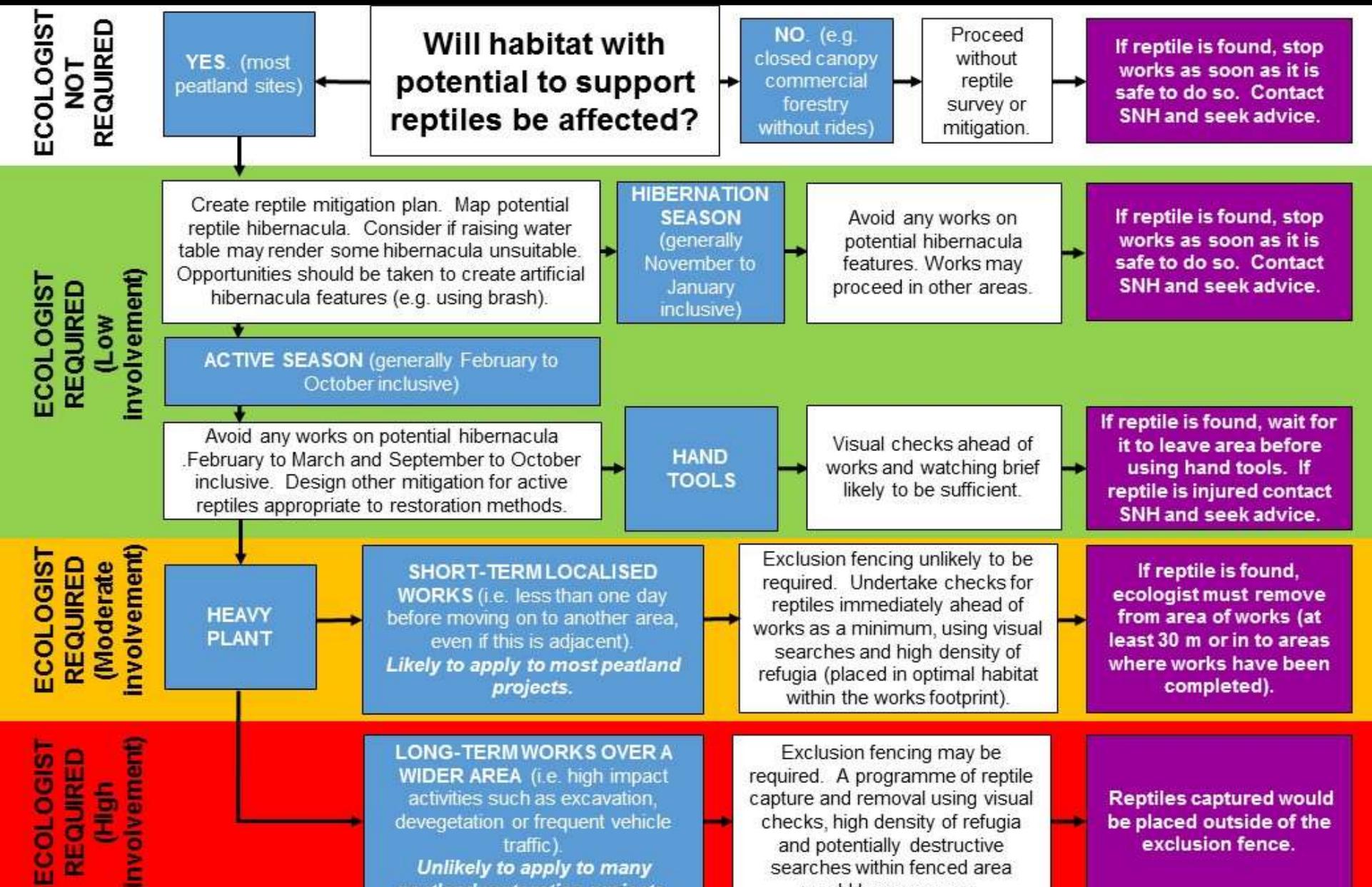
New revision to be published
Spring 2016

Revision by
Chris Cathrine (Caledonian
Conservation Ltd.)
Jim Foster (ARC)
Julian Whitehurst (The Sustainable
Development Company)

Commissioned by SNH



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The Amphibians & Reptiles of Scotland

Chris McInerney & Pete Minting



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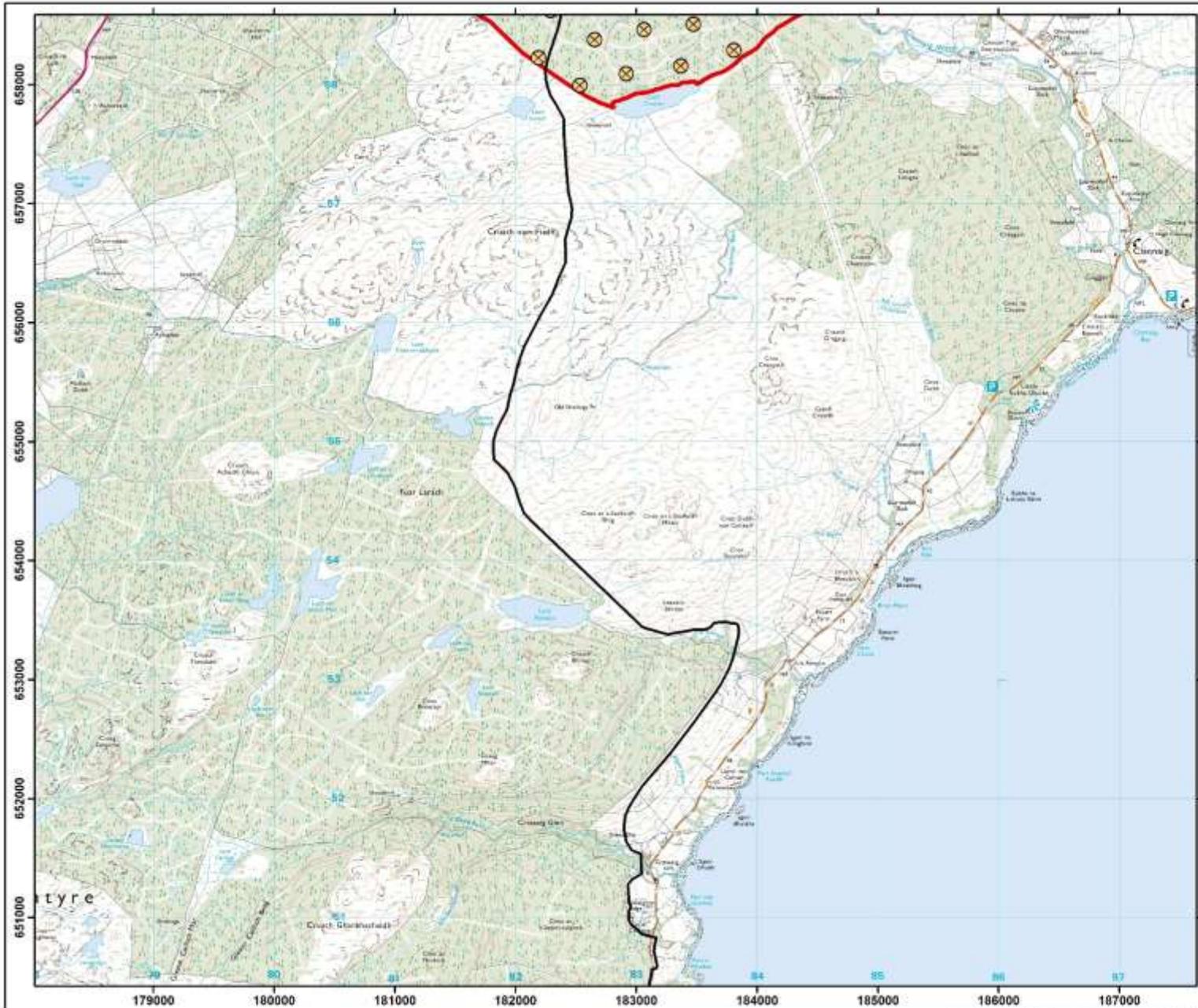


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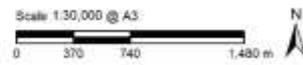
Project

- Client: Renewable Energy Systems (RES)
 - World leading independent renewable energy developer
- Location: Kintyre, Argyll & Bute
- Underground power line
- >10km long
- Connecting Freasdail Wind Farm to grid



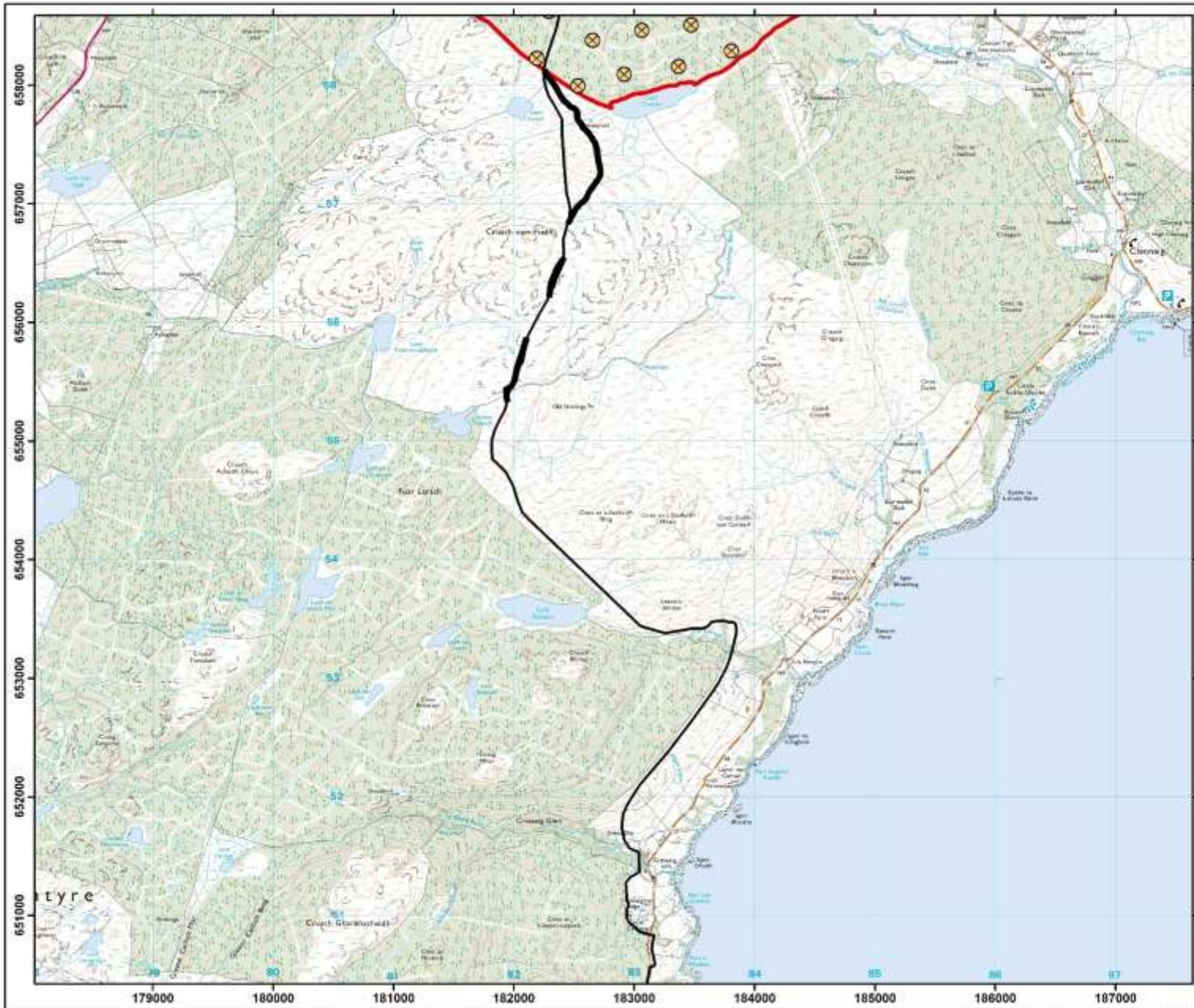
Key

— Cable route



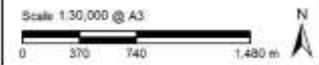
Cable Route

**Freasdale Grid Connection
Reptile Mitigation**



Key

— Cable route



Cable Route

**Freasdale Grid Connection
Reptile Mitigation**



Survey: Habitat Assessment

- Foraging Habitat
- Potential Hibernaculum Features
- 100m buffer of working area
- Completed in 2015, with updates in 2016 to inform route deviations

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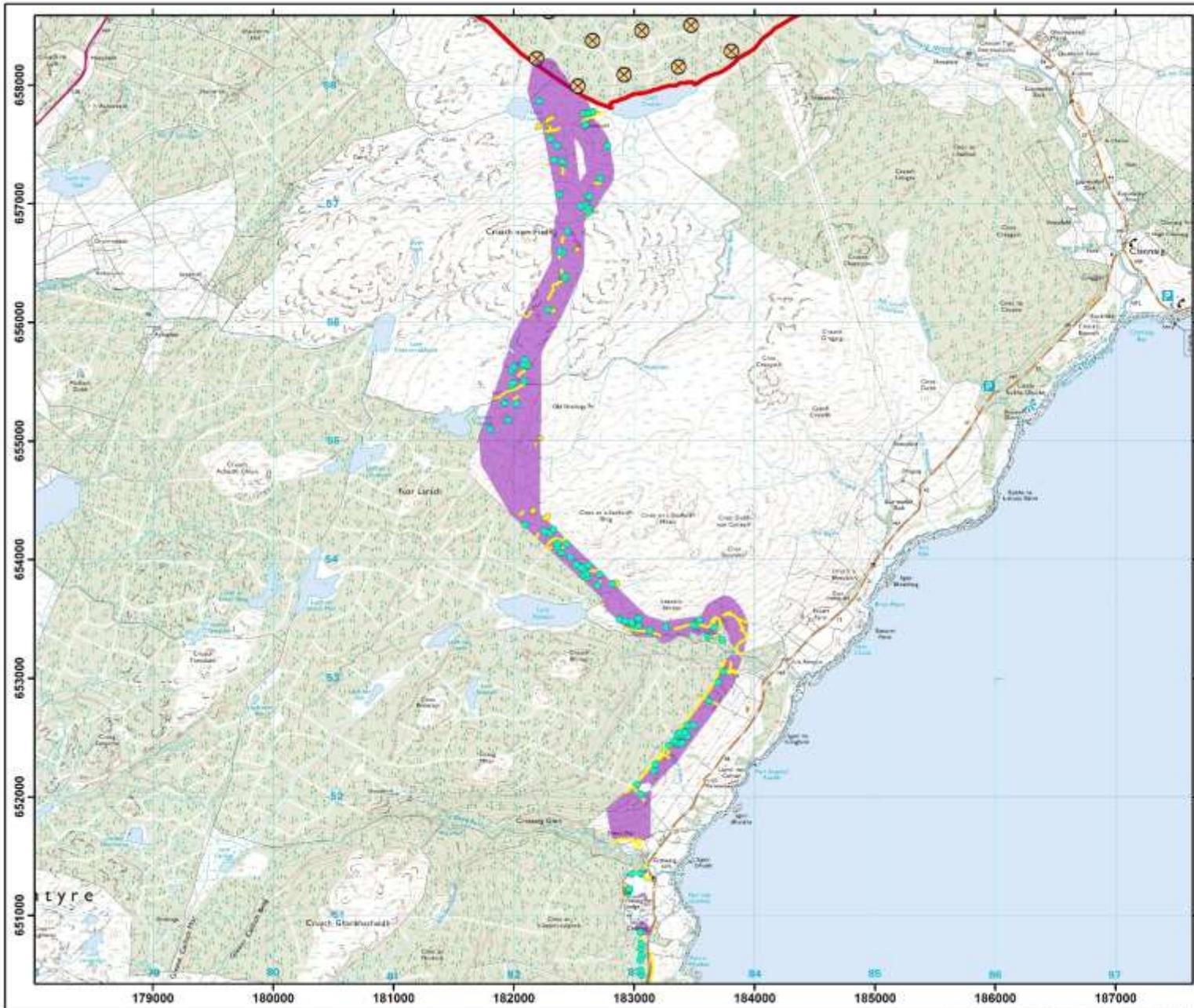


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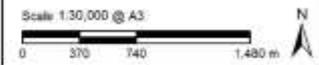


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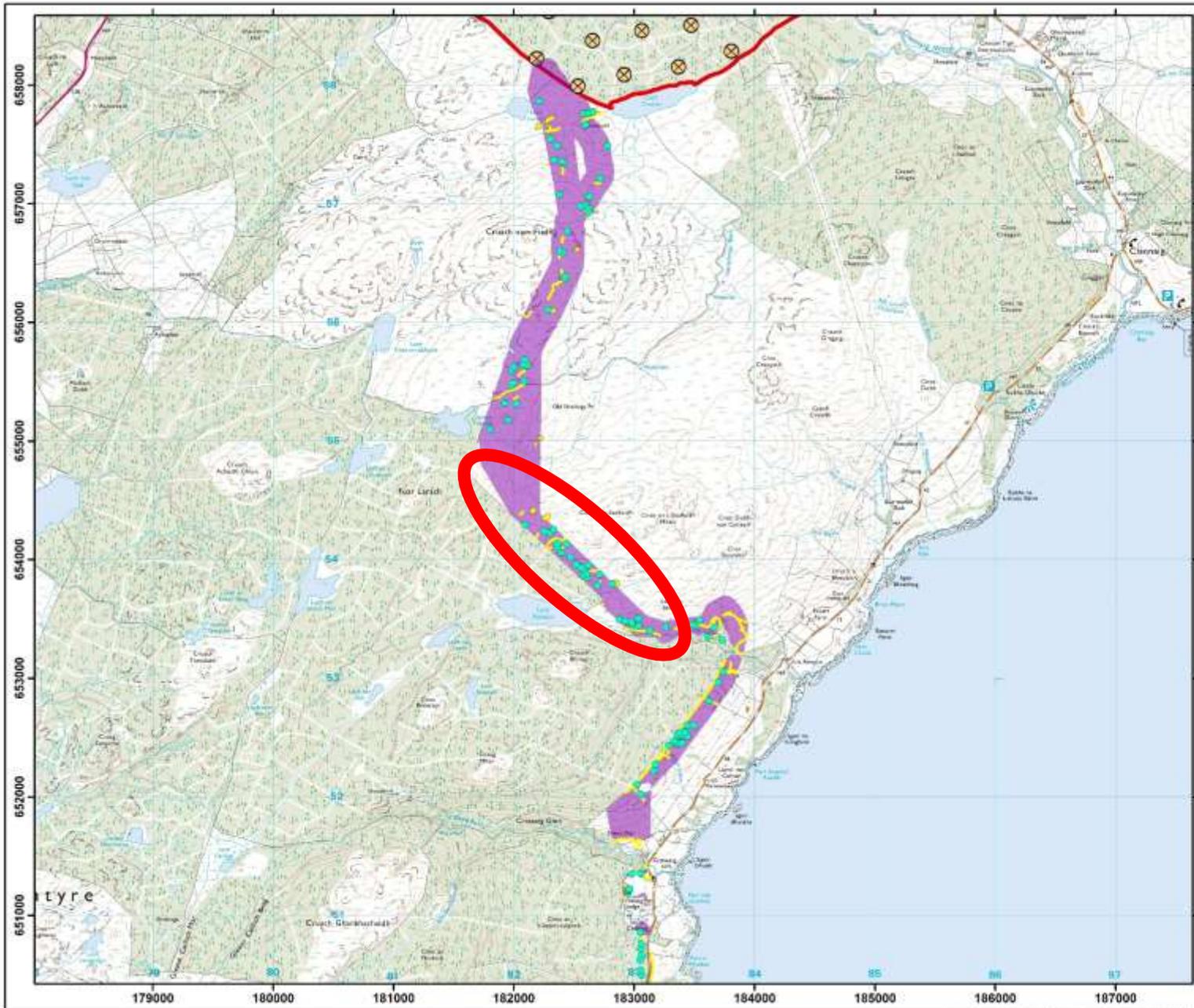


- Key**
- Potential hibernacula features
 - Potential linear hibernacula
 - Potential hibernacula patches
 - Suitable reptile habitat

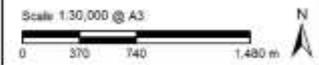


Reptile Habitat

**Freasdale Grid Connection
Reptile Mitigation**



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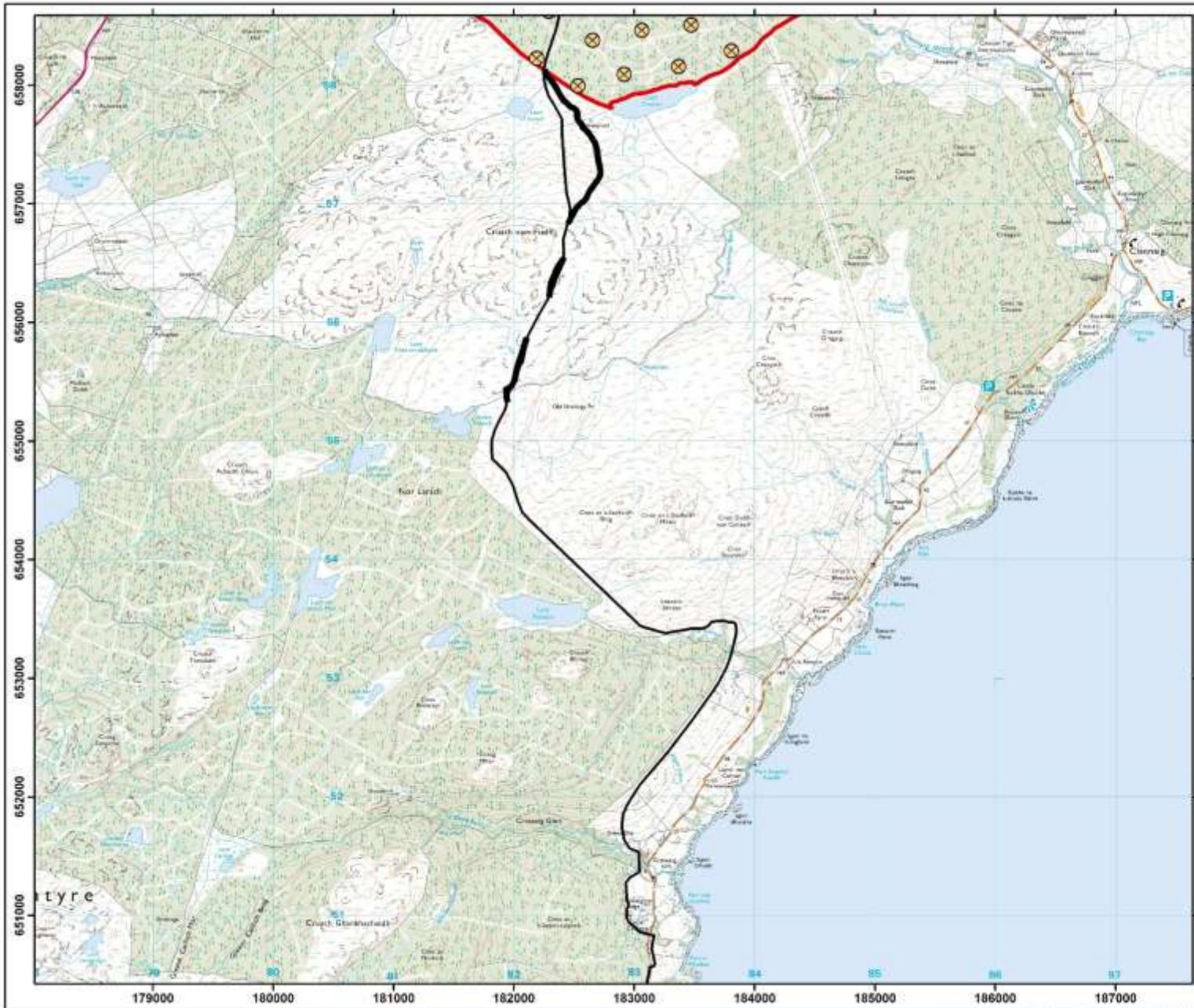
Reptile Habitat

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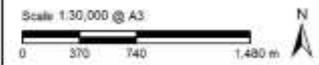


Survey: Presence?

- Know adders and common lizards are present, with suitable habitat for slow-worms (which are known from the local area historically)
- Relatively low very short-term impact: transient works
- Focus on mitigation



Key
 — Cable route



Cable Route
Freasdale Grid Connection
Reptile Mitigation



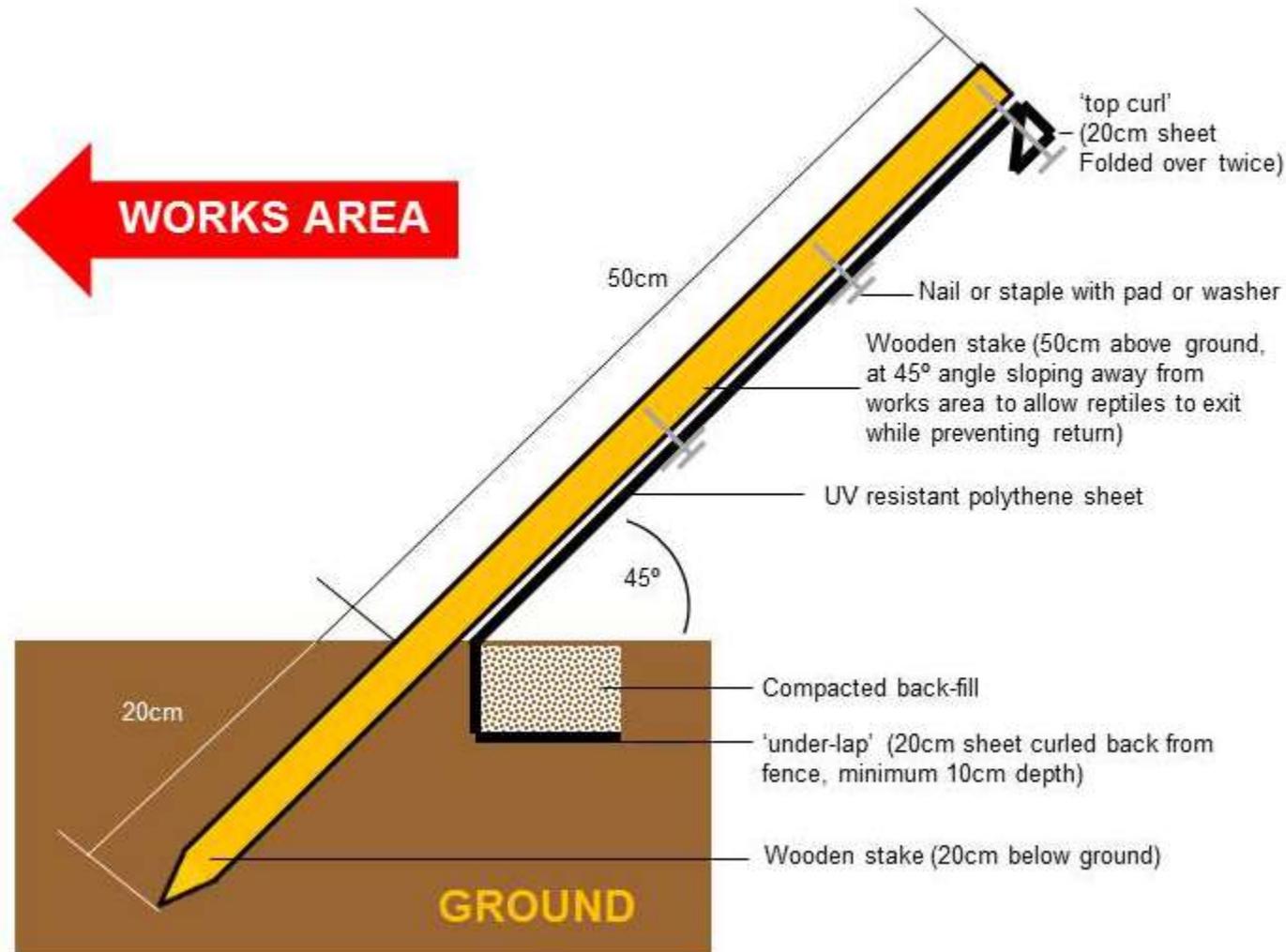
Mitigation: Wind Farm

- Survey: habitat mapping & presence
- One-way exclusion fencing
- Reduced vehicle speed in reptile areas
- ECoW Checks before ground-breaking
- Longer-term construction impacts

Freasdail Wind Farm Grid Connection: Reptile Mitigation

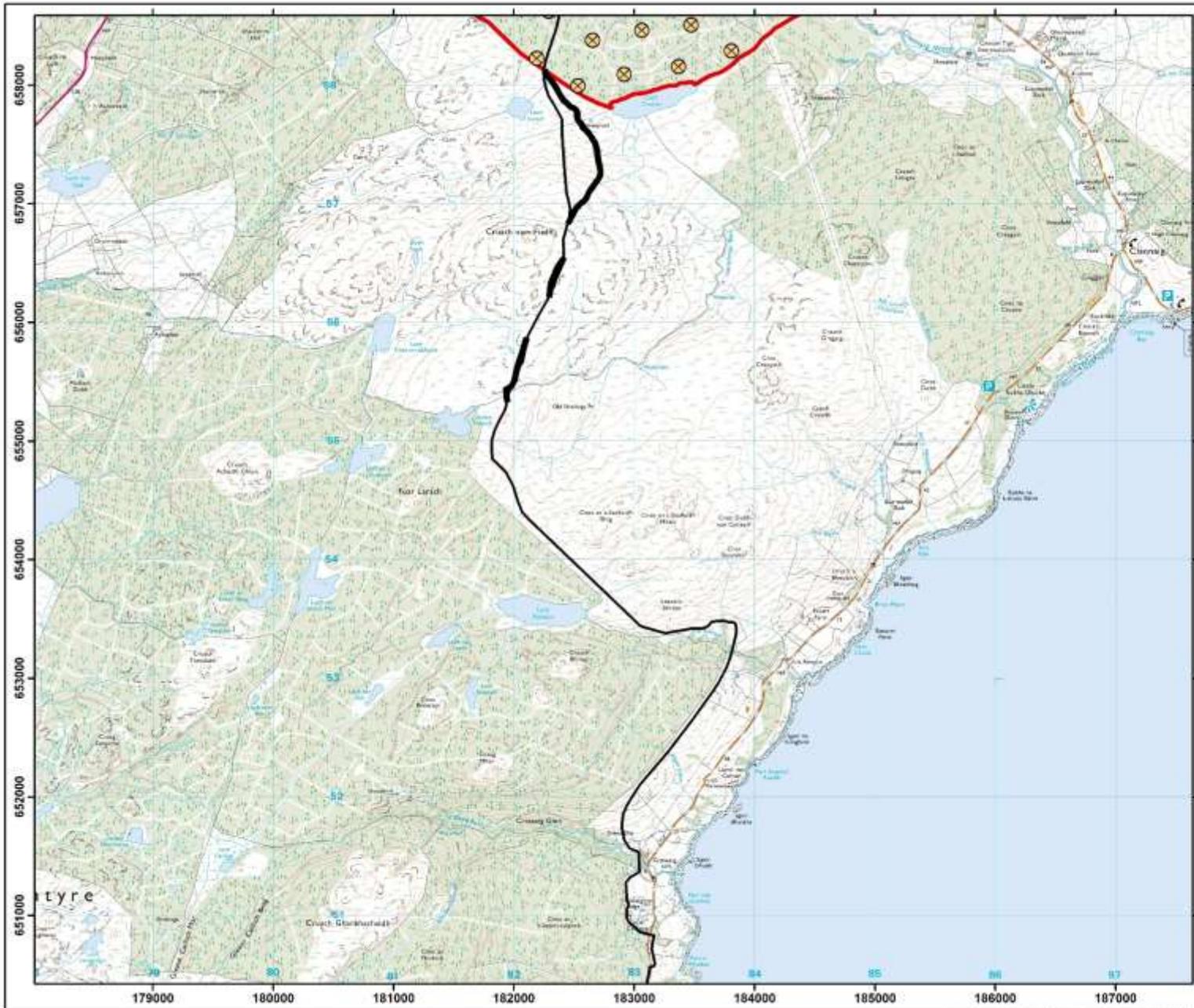


One-way reptile exclusion fencing

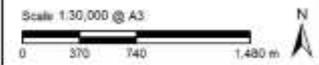


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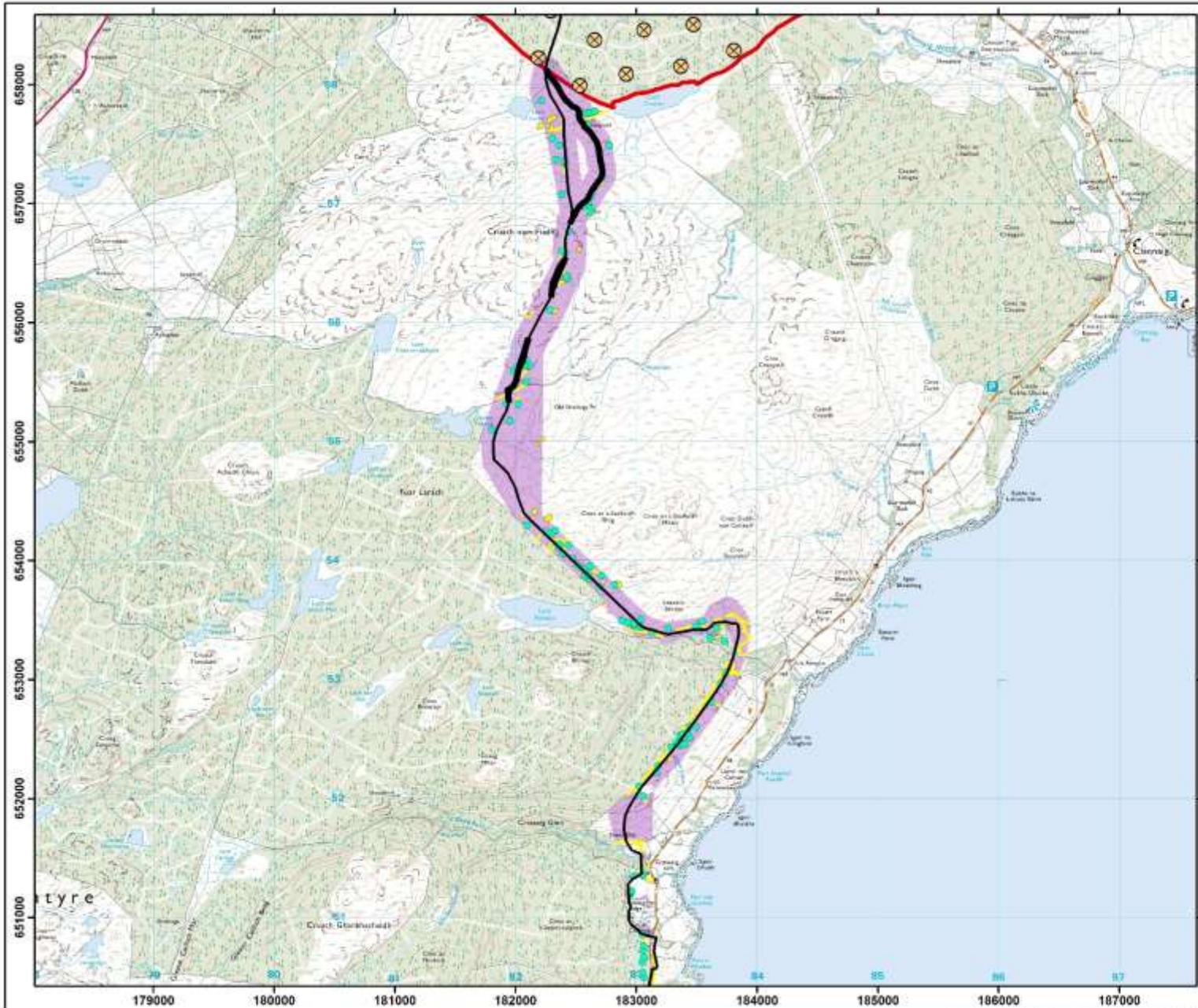


Key
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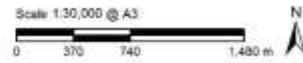
Cable Route

**Freasdale Grid Connection
 Reptile Mitigation**



Key

-  Cable route
-  Potential hibernacula features
-  Potential linear hibernacula
-  Potential hibernacula patches
-  Suitable reptile habitat



Reptile Habitat

**Freasdale Grid Connection
Reptile Mitigation**



Mitigation: Grid Connection

- >10km of exclusion fencing not practical:
 - Installation impact larger than construction impact
 - Would create huge barrier to reptiles & other species



Mitigation: Grid Connection

- Construction activities:
 - Excavation of trench
 - Laying of cable ducts
 - Reinstatement in same day
 - <200m per day



Mitigation: Grid Connection

- Microsite to avoid potential hibernacula
- Timing:
 - No destruction of potential hibernacula
September to April (if lost should be replaced)
 - Relocation of reptiles during the active
season (March to October)



Mitigation: Grid Connection

- Experienced reptile ecologist as ECoW to complete checks immediately prior to works in active season. Relocate reptiles >30m from work
- Visual searches
- Artificial refugia:
 - Roofing felt 50cm x 30cm (transport on foot over long distances on difficult terrain)
 - High density (1 per 20m² / 500 per ha)
- ECoW ensure hibernacula avoided during hibernation season



Results (to date)

- Artificial refugia were placed >2 weeks before works commenced in an area

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Results (to date)

- Artificial refugia were placed >2 weeks before works commenced in an area
- Works commenced in reptile habitat on 10/05/16 and are ongoing

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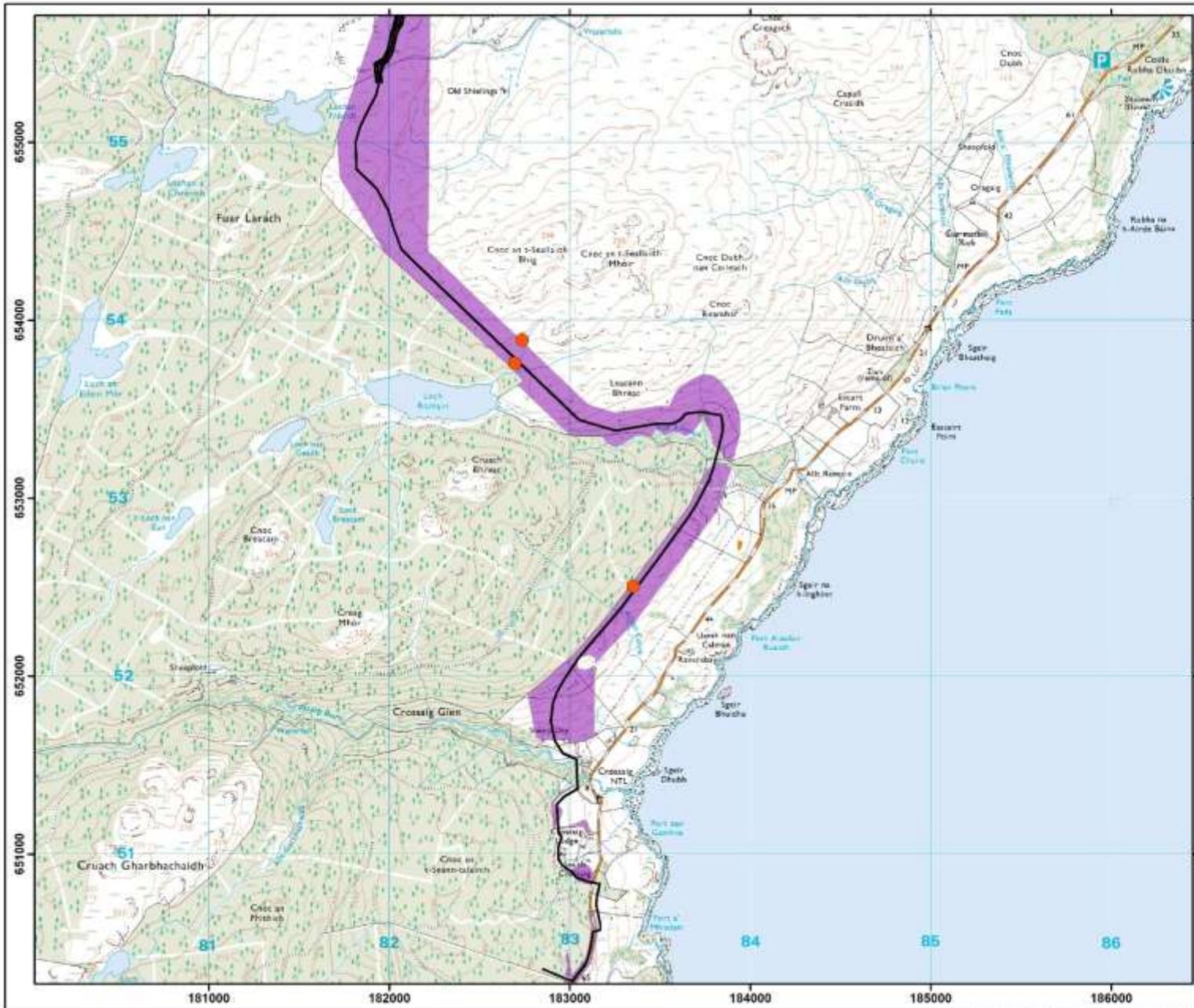


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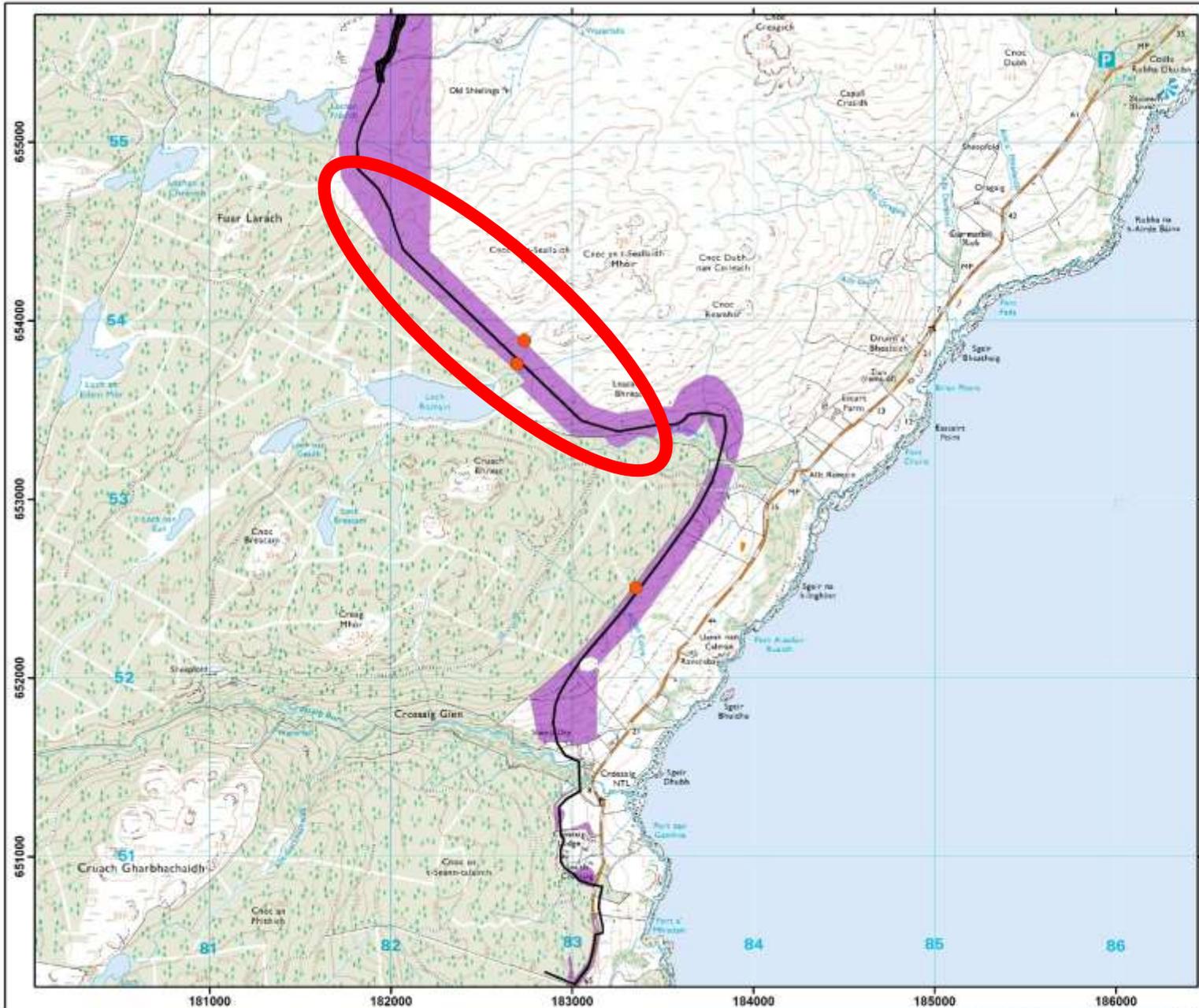


- Key**
- Adder
 - Cable route
 - Suitable reptile habitat



Adder

**Freasdail Grid Connection
Reptile Mitigation**



- Key**
- Adder
 - Cable route
 - Suitable reptile habitat



Adder

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Results (to date)

- Adders observed in area, but not affected

Results (to date)

- Adders observed in area, but not affected
- Common lizards:

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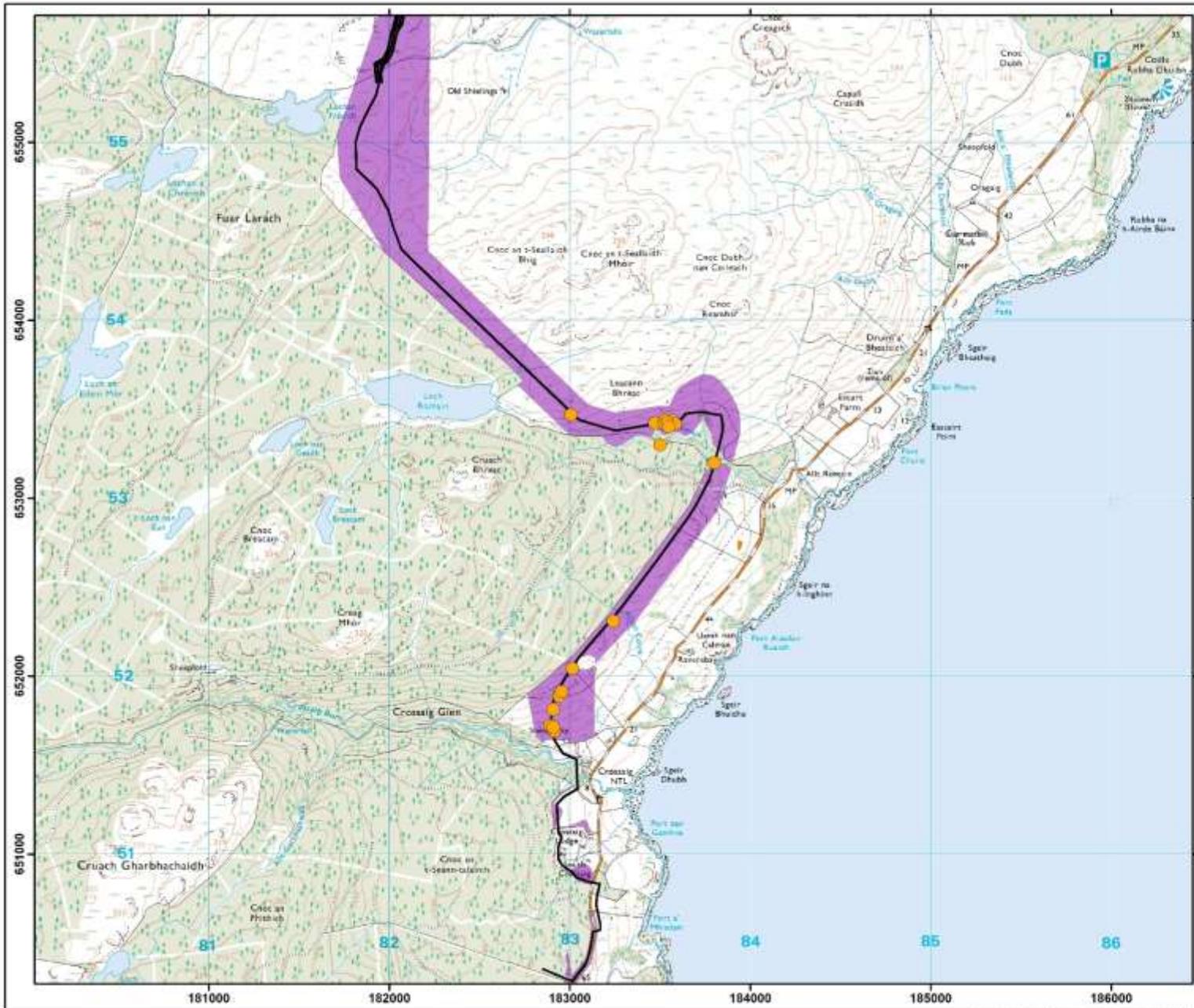


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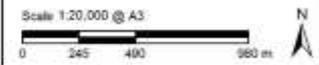


Freasdail Wind Farm Grid Connection: Reptile Mitigation





- Key**
- Slow-worm
 - Cable route
 - Suitable reptile habitat



Slow-worm

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Results (to date)

- Adders observed in area, but not affected
- Common lizards: 159 relocated up to 16/08/16
- Slow-worms: 31 relocated up to 16/08/16

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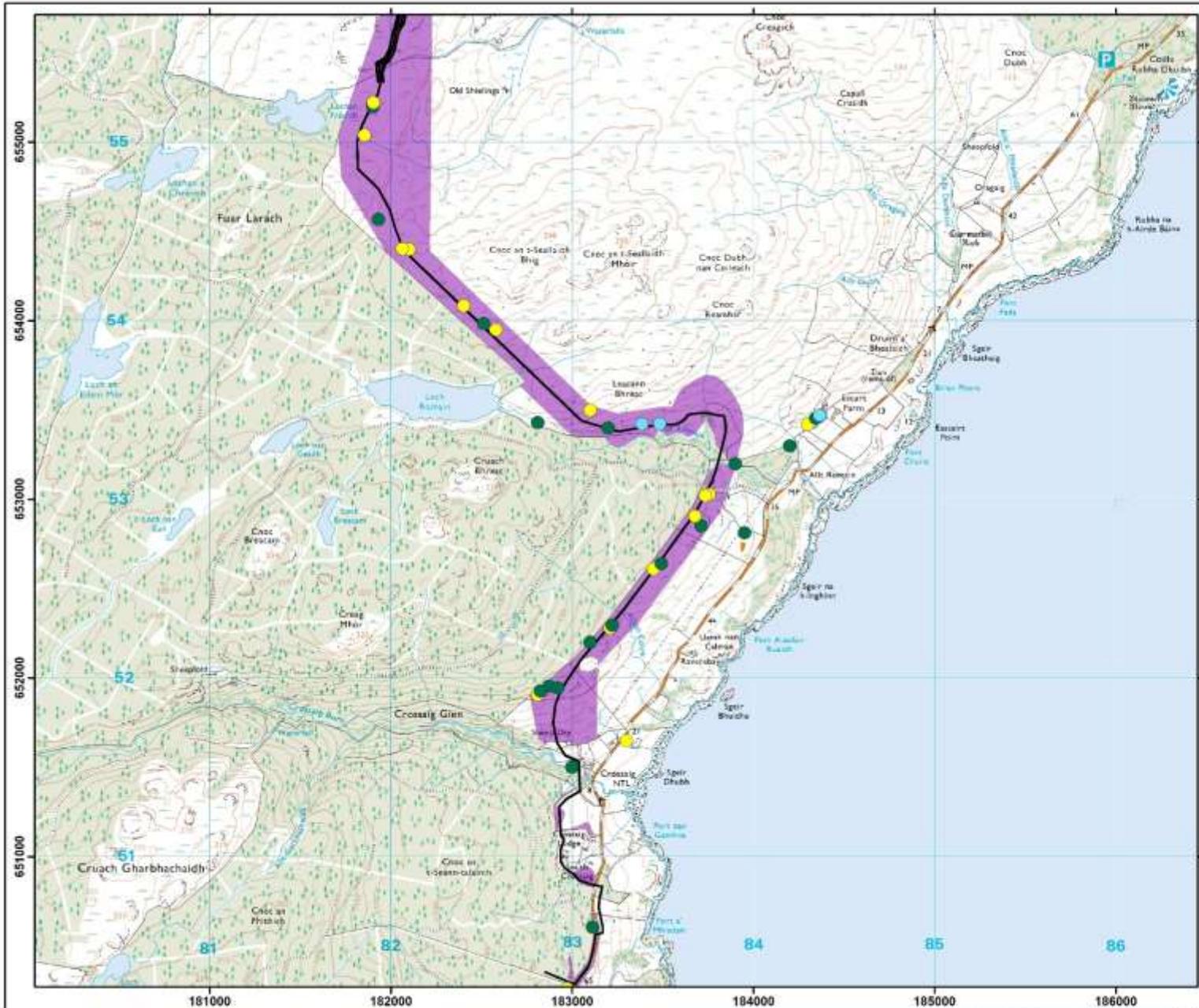


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- Key**
- Common Frog
 - Common Toad
 - Palmate Newt
 - Cable route
 - Suitable reptile habitat



Amphibians

**Freasdail Grid Connection
Reptile Mitigation**



Results (to date)

- Adders observed in area, but not affected
- Common lizards: 159 relocated up to 16/08/16
- Slow-worms: 31 relocated up to 16/08/16

- Many amphibians also relocated (common frog, common toad and palmate newt)



Results (to date)

- Adders observed in area, but not affected
- Common lizards: 159 relocated up to 16/08/16
- Slow-worms: 31 relocated up to 16/08/16

- Many amphibians also relocated (common frog, common toad and palmate newt)

- No evidence of harm or mortality

Conclusions

- Traditional mitigation (e.g. fencing) may not be practical for all projects
- Mapping habitat and avoiding key features appears to be effective mitigation to avoid impacts on adders at the Freasdail cable route
- Combination of visual searches and high density of artificial refugia effective to allow relocation of reptiles is effective mitigation at the Freasdail cable route



Conclusions

- Prevention is the best option (design & micro-siting to avoid habitat features)
- Relocation still necessary during active season



Conclusions

- Prevention is the best option (design & micro-siting to avoid habitat features)
- Relocation still necessary during active season
- **Need formal published guidance**

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