Reptiles in Scotland

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Director, Caledonian Conservation Ltd

22 August 2023, Forestry and Land Scotland, Online.

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Free download: http://www.glasgownaturalhistory.org.uk/books.html

The Amphibians & Reptiles of Scotland

Chris McInerny & Pete Minting

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amphibian and reptile conservation

UNIVERSITY of GLASGOW

Caledonian Conservation Ltd

Clyde Ecology Ltd

Paisley NATURAL HISTORY Society

direct ECOLOGY

ARG Clyde Amphibian and Reptile Group

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Photographs

- Amphibian & Reptile Conservation Trust: National Amphibian and Reptile Monitoring Programme

  https://monitoring.arc-trust.org
- Photographs used in this presentation are by Steven Allain, John Baker, Lee Brady, Julia Carey, Chris Dresh, Terry Elborn, Tracy Farrer, Fred Holmes, Paul Hudson, Tom Langton, Vaughn Matthews, Erik Paterson, Paul Stevens, John Wilkinson, Chris Cathrine / Caledonian Conservation Ltd.
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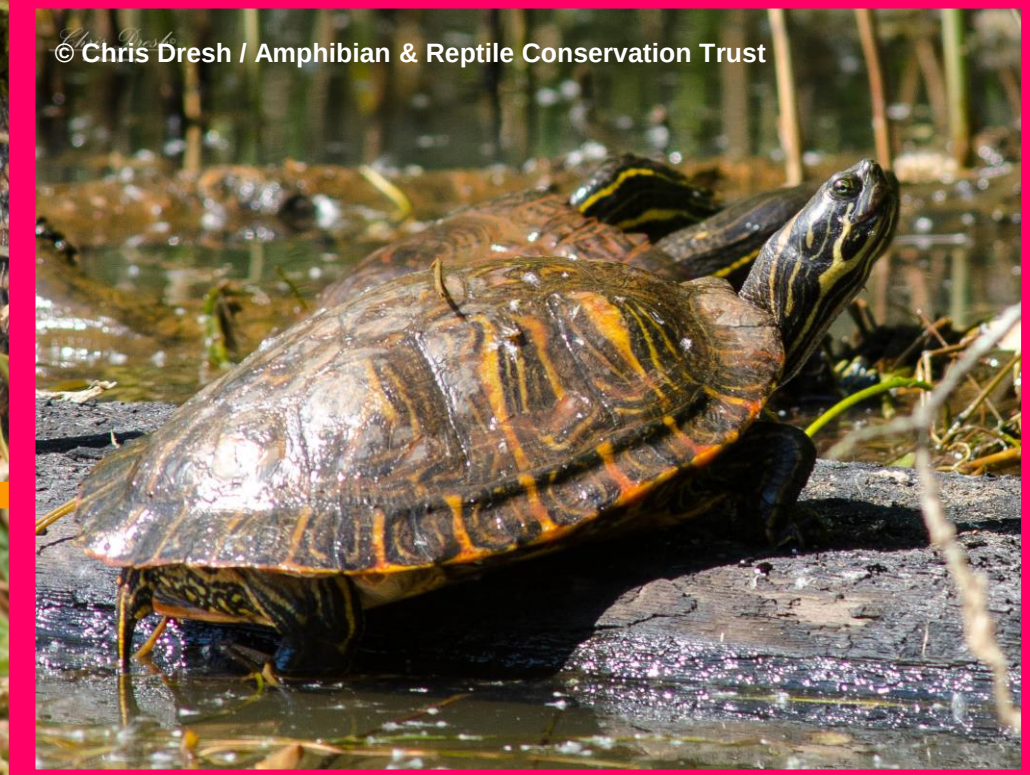

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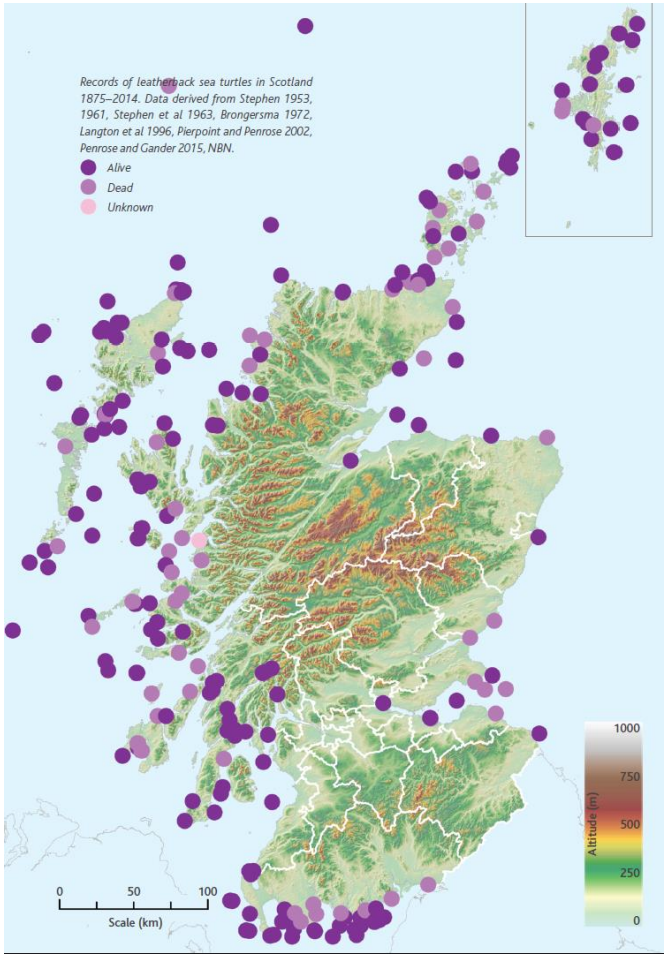
Leatherback Turtle



Protection

- All native reptiles protected from deliberate and reckless harm

- Sand lizard fully protected in UK (European Protected Species)

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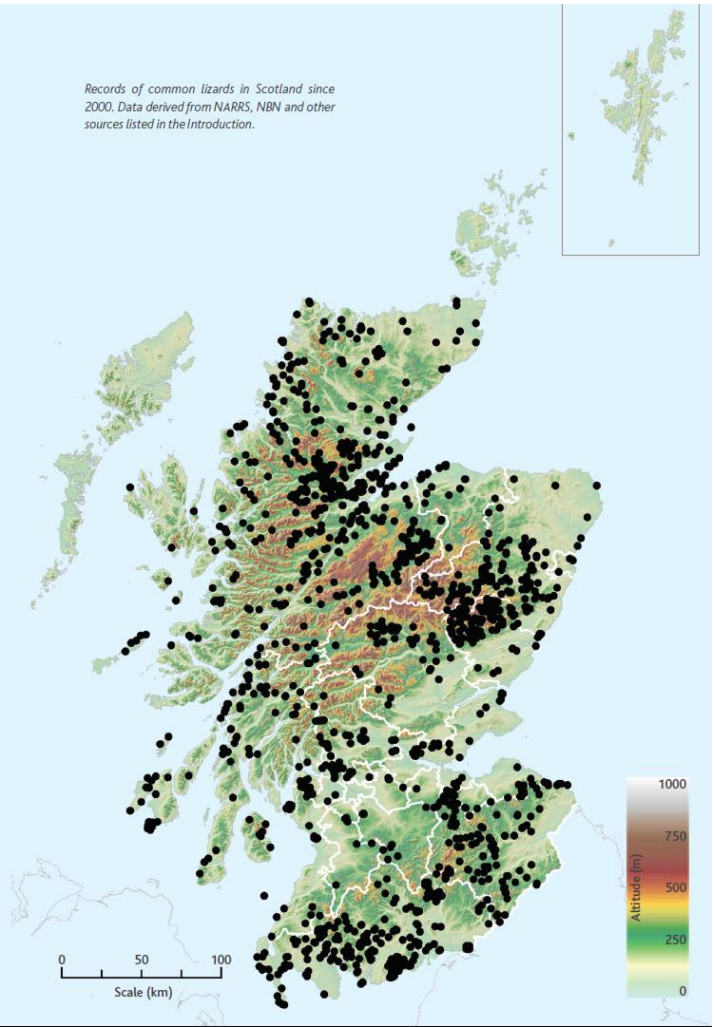
Common Lizard



The common (or viviparous) lizard

Common lizards occupy a range of habitat types and are variable in appearance. Body colour can range from a pale straw colouration through browns and greys, various shades of green, blue and also black (melanistic)! Patterns on the body can also range from hardly any at all through to speckles, blotches, bands and stripes.

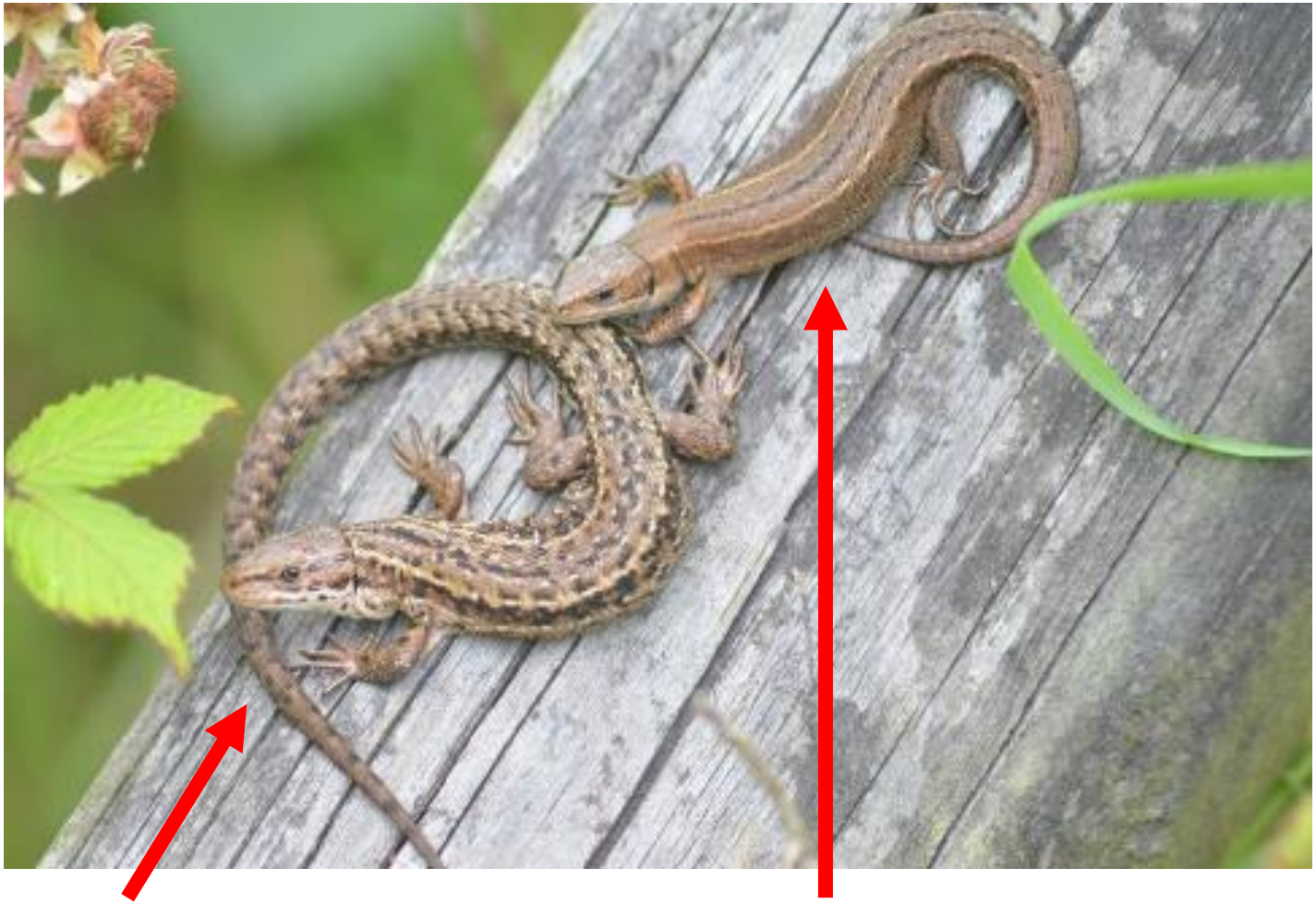
Common lizards can reach 15 to 16 cm in length.

Brown, green and melanistic common lizards compared.

A blue phase common lizard.

(Photos: Tracy Farrer)

Common Lizard



Male: Speckled back
Larger head
Longer tail
Penile bulge

Female: Striped back
Longer torso

(Photo: Tracy Farrer)

Common lizard

Males: speckled back & orange belly

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Common lizard

Males: speckled back

penile bulge

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Common lizard

Females: striped back

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Common lizard - juveniles

Initially almost black (born in egg membrane), soon become bronze

male (speckled)

female (striped)

start to develop adult markings

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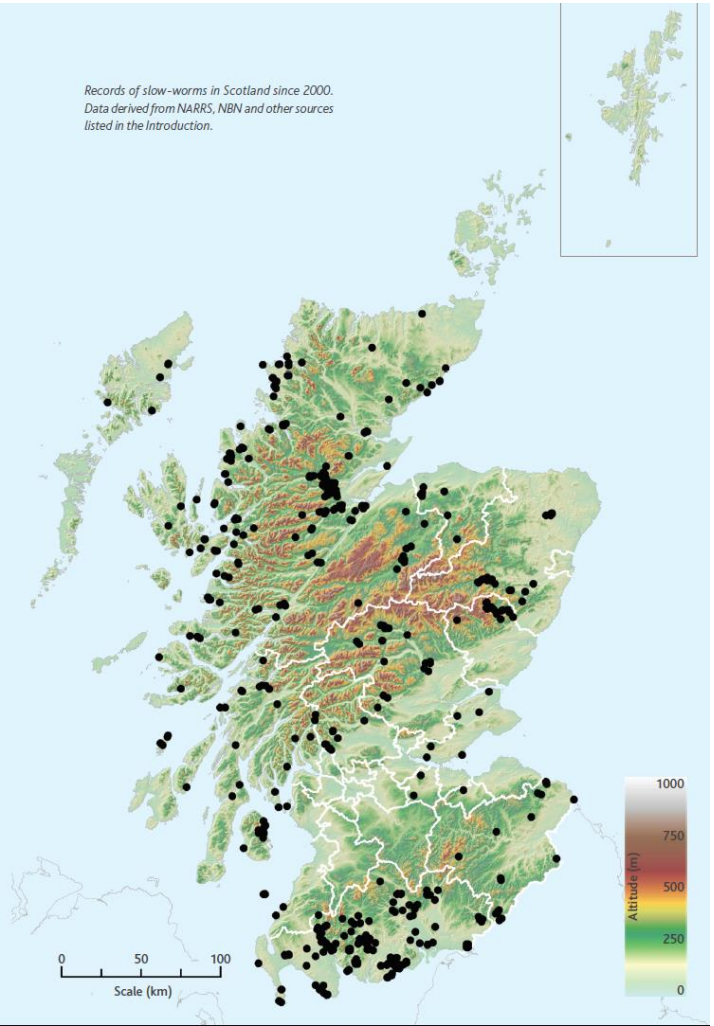
Slow-worm



The slow-worm

Slow-worms are legless lizards and are impossible to confuse with other UK lizards – they are often mistakenly identified as snakes!

Slow-worms have a more defined head and neck region and, unlike snakes, have eyelids. Colour ranges through greys and browns to tan, orange, red, copper and melanistic.

A mature slow-worm that has kept its original tail can reach 40-45 cm in length (or more).

Fred Holmes

Vaughn Matthews

Slow-worm

Males: have thick set necks and larger heads, typically grey or brown, lack distinct stripes, may have blue spots

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Slow-worm

Females: dark brown sides, often have vertebral stripe(s) extending full length of body and tail

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Slow-worm

Juveniles: dark sides and vertebral stripe

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Slow-worm

Juveniles: usually yellow/gold, but varies through ivory and pink!

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Sand Lizard

- Coll
- Introduced species
- 39 individuals from Dorset
- 1971
- Breeding & still there today!

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Sand lizard

Eyed markings (‘ocelli’)

Males: broad head green sides in breeding season

Females: bold eyed markings

Juveniles: tiny but distinct eyed markings

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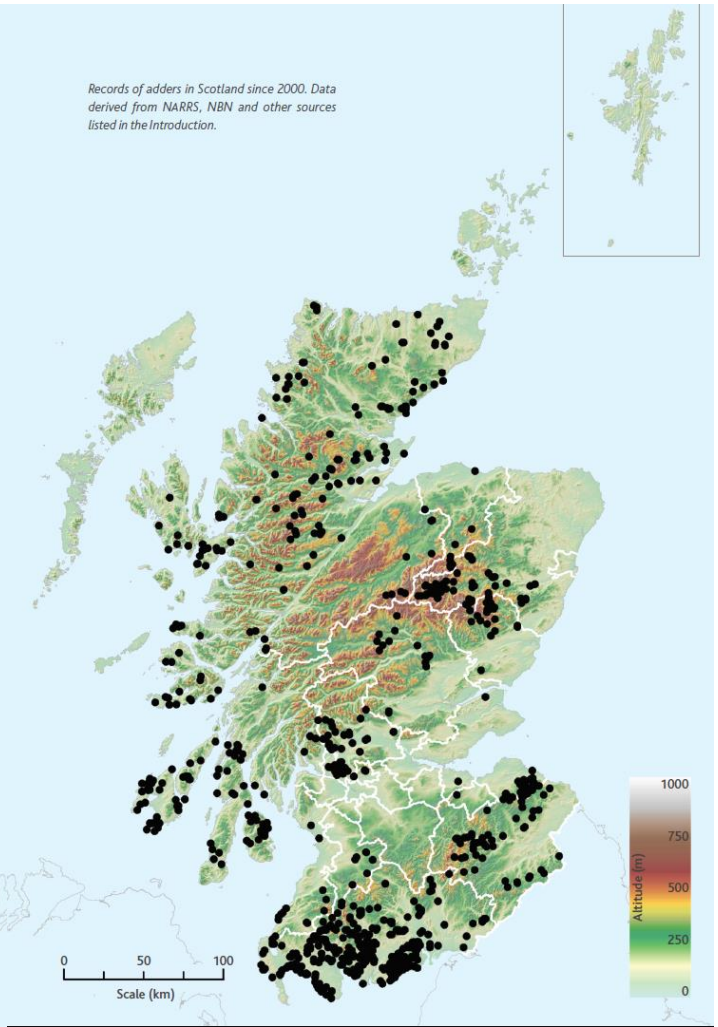
Adder



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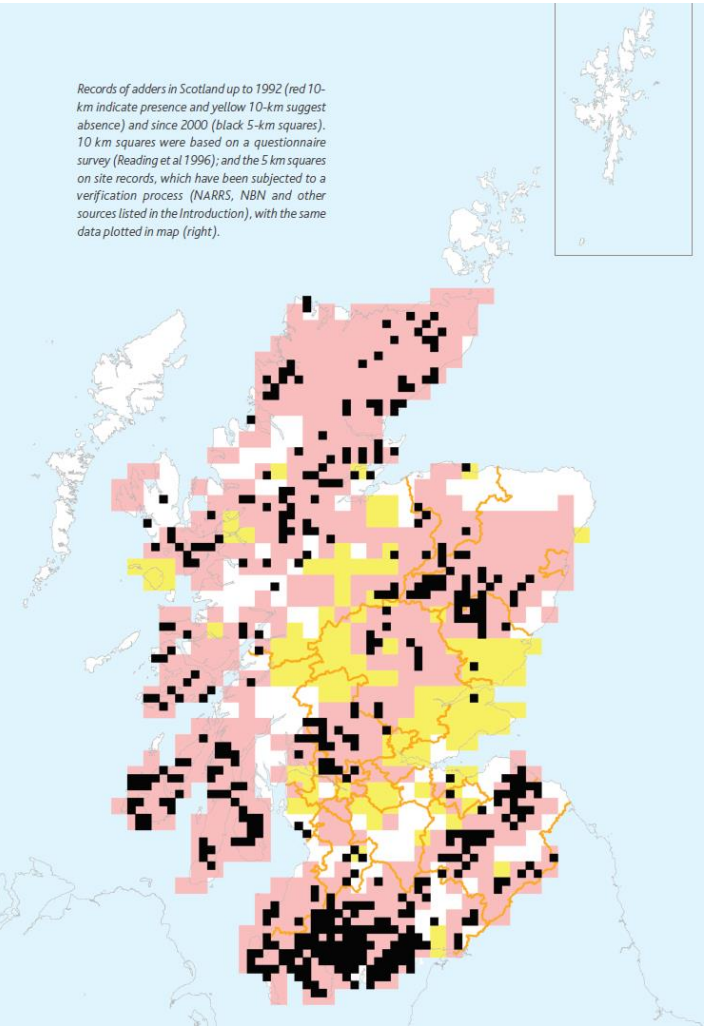
Adder



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Dr Norman Morrison: The Adder Man

- 1869-1949
- Shawbost, Lewis
- *Life Story of the Adder* (1924)
- Fellow Royal Zoological Society of Scotland
- Co-founded Scottish Police Federation
- https://scotlandsnature.blog/2013/08/02/the-adder-man-norman-morrison/

Adder

The distinctive zig-zag / diamond pattern down it's back is the key ID feature, and only snake in the UK with a vertical pupil.

A short, stocky snake, 16-70 cm long.

Adder

Male: BLACK ZIGZAG, often grey background after sloughing. Reaching 55cm.

Female: BROWN ZIGZAG, normally brown background. Reaching 70cm.

Adder

Males: can be bronze/beige but always BLACK zigzag

Can be difficult to sex reliably!

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Adder

Females: always have BROWN zigzag, however dark

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Adder

Females: can be ginger, with BROWN zigzag

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Adder

Black (melanistic) adders not uncommon

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Adder

Juveniles tend to be ginger or reddish

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But not always!

Adder habitat

Adders can be found in many types of habitat, including:

- Heathland
- Moorland
- Coastal dunes
- Lowland bogs & mosses
- Roadside verges and railway embankments
- Persecution and disturbance is a problem for this species. Sites with limited public access, such as Ministry of Defence (MOD) land and nature reserves, can provide useful habitat for adders.

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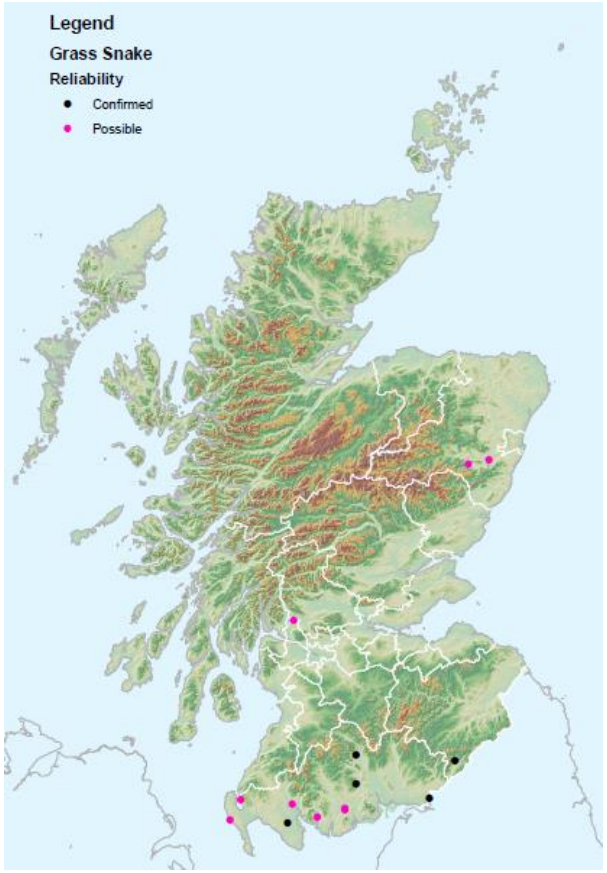
Grass Snake



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Revisiting grass snake distribution in Scotland

Grass snake
Anguis fragilis

Grass snake
Vipera berus

Grass snake
Natrix helvetica

The grass snake

Typically olive-green (sometimes more brown or greyish), 16-100 cm+. Large eyes with round pupils. Slender and active.

Grass snake

Green, grey or brown, usually yellow collar

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Grass snake

Males: smaller, thinner, but longer tails. Narrow heads with protruding eyes.

Females: get bigger, but shorter tapering tails. Broad arrow shaped heads, eyes recessed.

Grass snake

Eggs are usually laid in manure/compost; their texture is leathery.

Hatchling juveniles are exact replicas of adults!

Grass snake

Usually void foul-smelling liquid from anus if captured; sometimes feign death

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Grass snakes in Scotland

ARG Clyde Amphibian and Reptile Group

Caledonian Conservation Ltd

Future – what next?

Scottish Grass Snakes

Home | Part A : Survey Data | Part B : Habitat

Have you seen a Grass snake in Scotland?

Please **fill in our simple online recording form** and help us learn the distribution of Scotland's largest terrestrial reptile.

Until 2010, it was generally believed that wild grass snakes (*Natrix natrix*) do not occur in Scotland. However, three confirmed records were made in Dumfries & Galloway between 2009 and 2010, and there are other unconfirmed but possible records from elsewhere in Scotland. Research has since shown that grass snakes are present in Scotland, but we do not know if they are recent arrivals or their current range.

Grass snakes are charismatic, but shy animals, but may be seen particularly in areas with water bodies where they can hunt amphibians. Although harmless, they are the UK's largest snake (females may grow longer than 1 metre) and can be easily identified by the pale neck collar.

Your sighting reports will go to Chris Cathrine, Director of Caledonian Conservation Ltd who is currently researching the Grass snake in Scotland. To find out more about the research, take a look at this :

Cathrine, C. 2012. *Scottish Grass Snake Distribution Research Poster.* Herp Workers' Meeting 2012.

Your records will also populate the ARG UK Record Pool database.

RECORD POOL
Amphibian and Reptile Groups of the UK
VOLUNTEERS WORKING FOR THE CONSERVATION OF AMPHIBIANS AND REPTILES

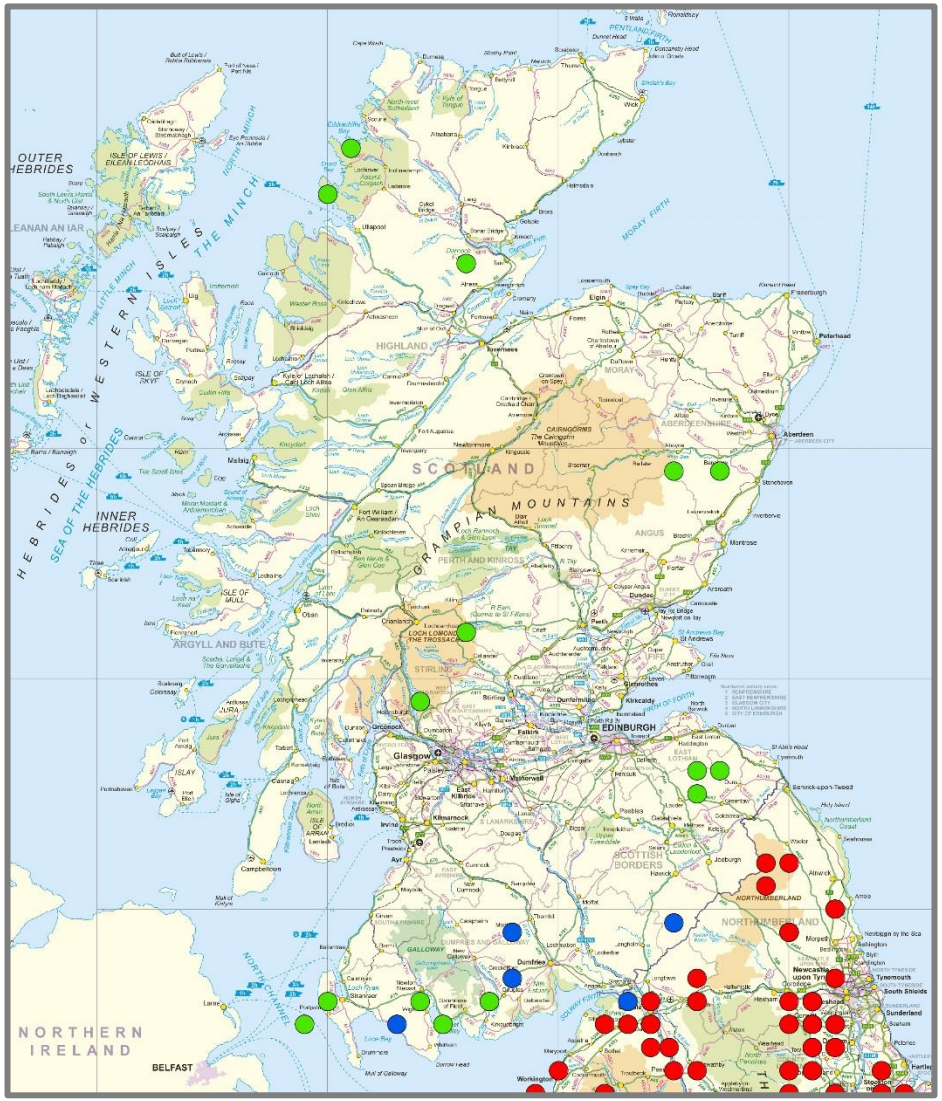
Photos © J Cranfield Herpetologic ltd 2012

Caledonian Conservation Ltd | ARG Clyde Amphibian and Reptile Group | Herpetologic

ARG UK — Amphibian and Reptile Groups of the UK
VOLUNTEERS WORKING FOR THE CONSERVATION OF AMPHIBIANS AND REPTILES

Developed by Aye-aye Design

www.scottishgrasssnakes.org



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

Chris Cathrine
chris.cathrine@caledonianconservation.co.uk

www.caledonianconservation.co.uk

Enter your records at:
www.scottishgrasssnakes.org

RECORD POOL
Online Recording for UK Amphibian and Reptile Conservation

Common Slider

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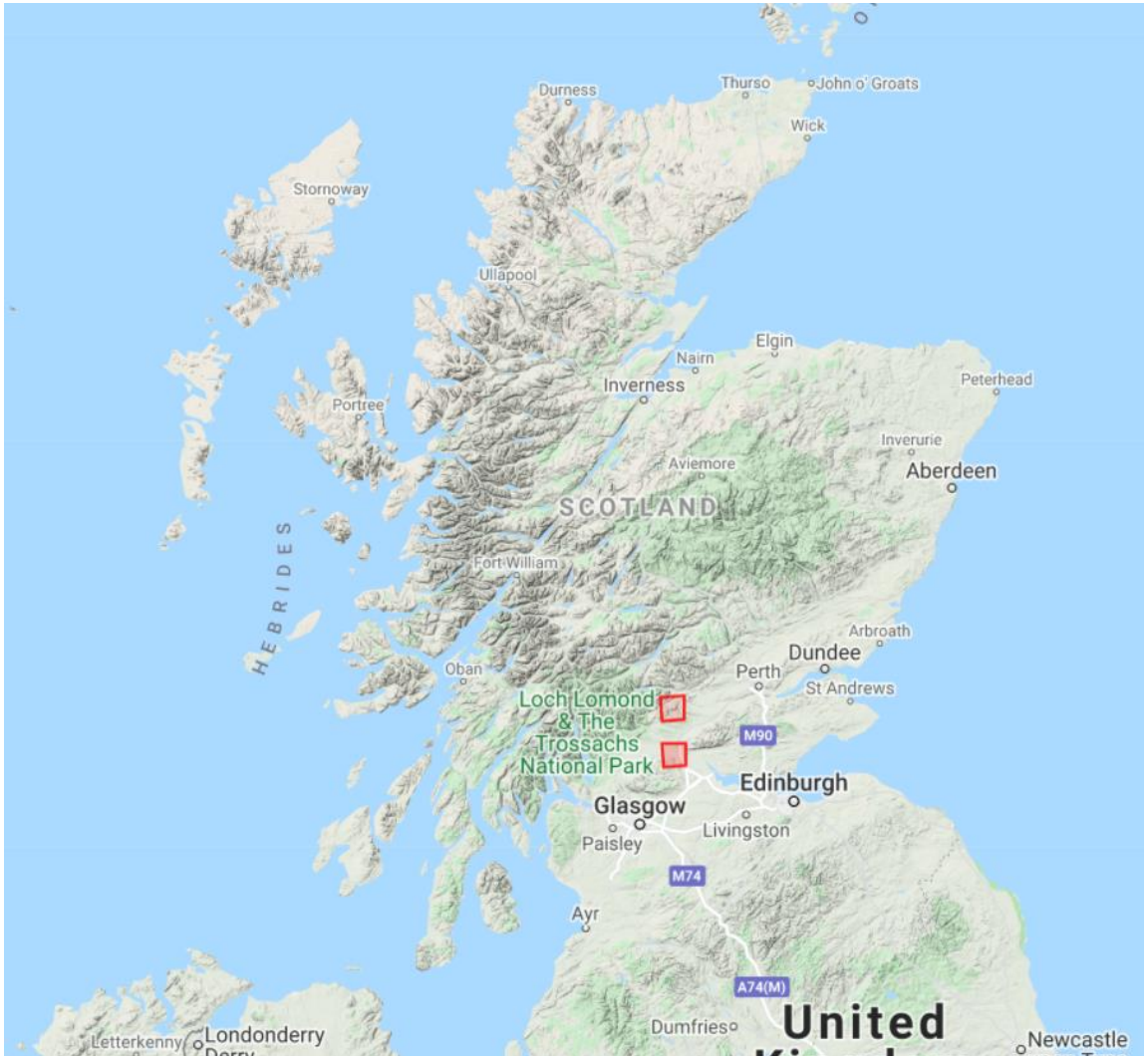
Common Slider



Common Slider

Details

- Non-native
- *Trachemys scripta*
  - *elegans* (red-eared)
  - *scripta* (yellow-bellied)
  - *troostii* (Cumberland)
- Native to Mexico and south-eastern and central USA.
- Unable to breed in Scotland due to low temperatures, although highly invasive in warmer countries.
- Lives up to 40 years.

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Chinese Pond Turtle

Chinese Pond Turtle

Details

- Non-native
- *Mauremys reevesii*
- Native to China, Taiwan, the Korean Peninsula (excluding Jeju Island).
- Endangered and trade restricted under CITES.
- Unable to breed in Scotland due to low temperatures.
- Lives over 20 years.

CITIZENS,

WE NEED YOU!

…to contribute to Hadlow College's National

'Turtle Tally' Citizen Science Project

Help us collect data on introduced turtle and terrapin species:

Easy online survey, open all year round, available for you to submit your turtle sightings!

Check out our website at: **www.TurtleTally.co.uk**

for more information and links to the survey.

NATIONAL CENTRE FOR REPTILE WELFARE

UNIVERSITY CENTRE HADLOW

BHS

Threats

- Development

Threats

- Development

Threats

- Development

Threats

- Development
- Aforestation

Threats

- Development
- Aforestation

Threats

- Development
- Aforestation
- Muirburn

Ross & Cromart y News

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Threats

- Development
- Aforestation
- Muirburn
- Persecution

Threats

- Development
- Aforestation
- Muirburn
- Persecution
- Roads

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Reptile Surveys

Reptiles in Scotland

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Amphibian and Reptile Groups of the United Kingdom
Advice Note 10
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Reptile Survey and Mitigation Guidance for Peatland Habitats
Version 1, April 2018

Contents

Cathrine, C. 2018. *ARG UK Advice Note 10: Reptile Survey and Mitigation Guidance for Peatland Habitats.* Amphibian and Reptile Groups of the United Kingdom.

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Natural England Technical Information Note TIN102

Reptile mitigation guidelines

England's six native species of reptile all have legal protection. They sometimes occur on land subject to development threats. If development proceeds there may be adverse consequences for the reptiles, as well as breaches of the legislation. Mitigation can reduce and compensate for development impacts, and can minimise the risks of committing an offence. Recent evidence shows that in many cases, carefully planned and implemented mitigation can offset the negative impacts of development. This note draws together existing guidance, recent research findings and field observations to produce a single set of standards for good practice in reptile mitigation. It has been prepared for ecological consultants and will be useful to developers, Natural England staff, local planning authorities and volunteers.

Background

All of our reptile species have suffered declines, to varying extents across the country. For the widespread species, most populations of which occur outside protected sites, development without adequate mitigation continues to be a significant reason for this decline.

Natural England urges developers and their ecological advisers to use mitigation not only to meet legal requirements, but also to assist in conserving these frequently neglected animals.

All reptile species are now on the national Biodiversity Action Plan (BAP) priority list, and local authorities and other public bodies have a legal duty to take their conservation into account.

Scope

This guidance covers the six native species of terrestrial reptiles in England:

- slow-worm *Anguis fragilis*;
- common lizard *Lacerta (Zootoca) vivipara*;
- sand lizard *L. agilis*;
- grass snake *Natrix natrix*;
- adder *Vipera berus*; and
- smooth snake *Coronella austriaca*.

Common lizard

In terms of status, these species may be divided into two groups:

The "rare species"

- sand lizard; and
- smooth snake.

The "widespread species"

- slow-worm;
- common lizard;
- grass snake; and
- adder.

Despite the term "widespread" some species are highly depleted locally and "widespread" does not mean ubiquitous or common.

First edition 9 September 2011
www.naturalengland.org.uk

NATURAL ENGLAND

Natural England. 2011. *Reptile Mitigation Guidelines.* Natural England, Peterborough.

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NATURAL ENGLAND

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Natural England. 2011. *Reptile Mitigation Guidelines.* Natural England, Peterborough.

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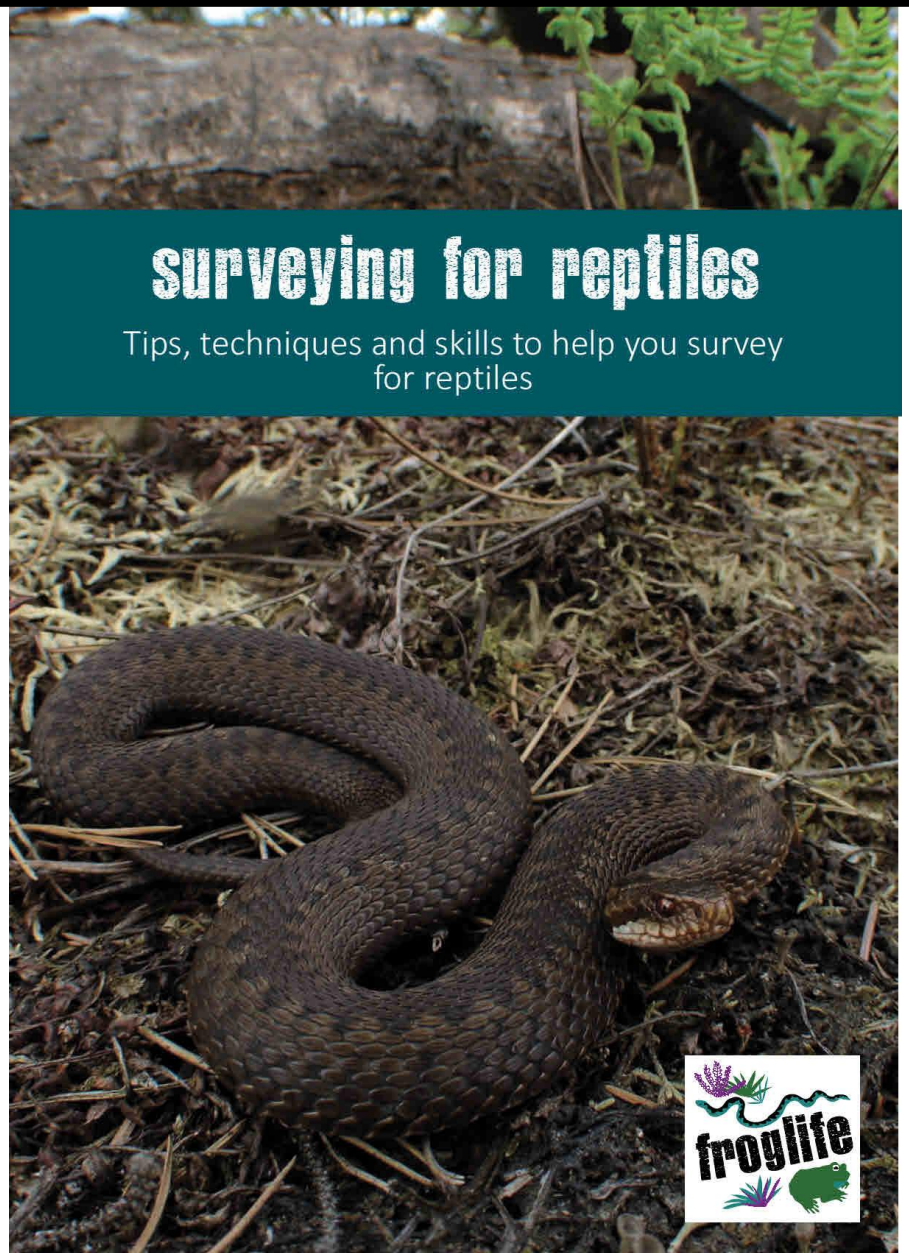

Froglife. 2015. *Surveying for reptiles. Tips, techniques and skills to help you survey for reptiles.* Froglife, Peterborough.

www.froglife.org

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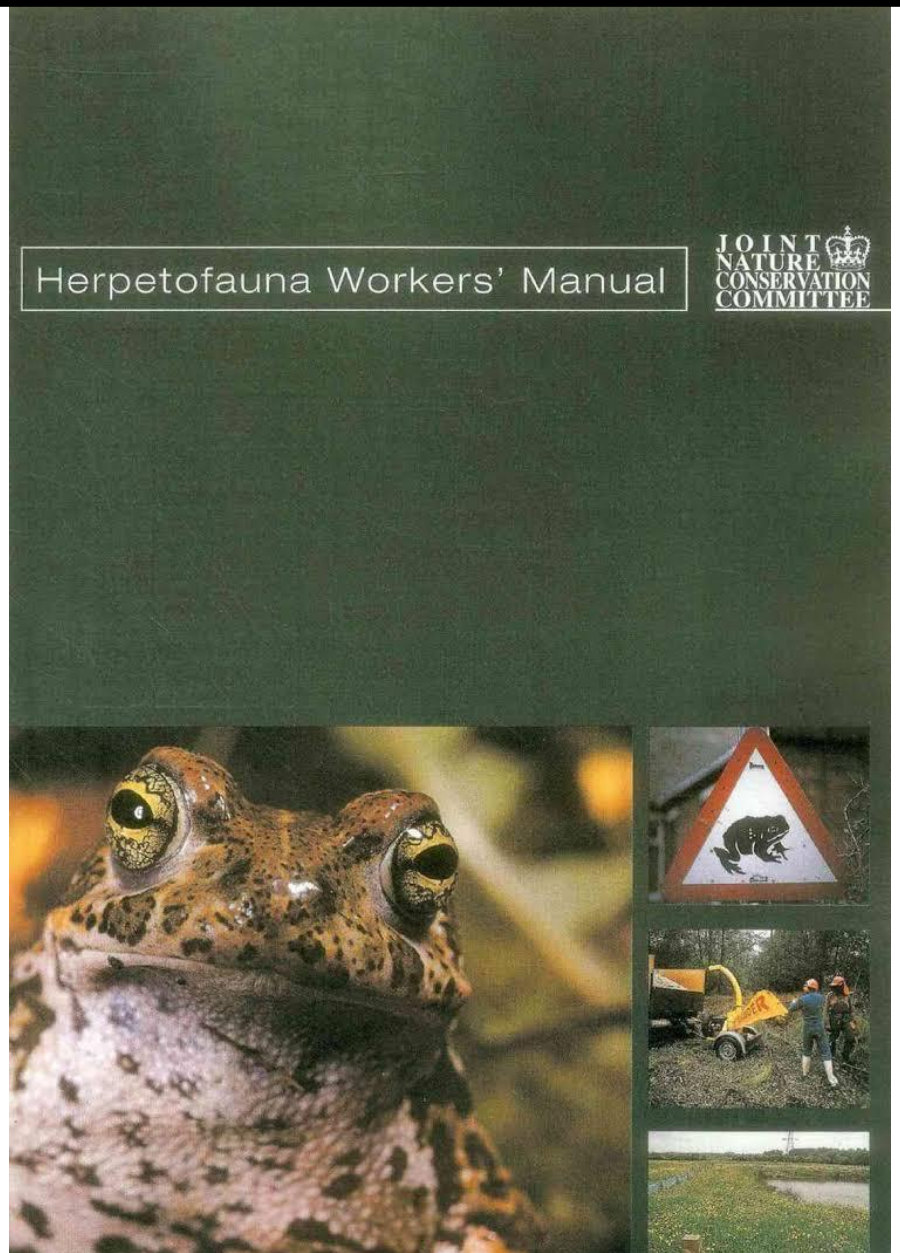

Gent, T. & Gibson, S. 2003. *Herpetofauna Workers Manual.* Joint Nature Conservation Committee, Peterborough.

www.jncc.gov.uk

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Froglife Advice Sheet 10

REPTILE SURVEY

An introduction to planning, conducting and interpreting surveys for snake and lizard conservation

WHY SURVEY FOR REPTILES?

All of Britain's six native species of snakes and lizards are declining to some degree, and conservation measures to counter this trend are dependent on reliable and up to date information on their distribution. Unfortunately, in many areas details about where snakes and lizards are found are severely lacking for several reasons:

- reptiles are relatively challenging animals to find as they tend to be secretive, camouflaged, occur in comparatively low numbers on a given site, and may be inactive for long periods during winter or hot, dry summers
- the number of people actively interested in native reptiles has been comparatively low
- there has been a lack of easily available and workable guidance on how to survey reptiles.

In recent years there has been increasing interest in conservation of snakes and lizards, and a growing need for more specific guidelines on how to survey for them. Information on the local abundance and distribution of reptiles can be used for the following:

- help protect sites from damage or destruction
- compiling lists of important local sites (Key Reptile Sites)
- assisting with habitat management plans
- learning about the importance of different land use types and management methods
- assisting with enquiries about where reptiles are found
- generating records of reptile occurrence to send to local record centres and herp groups
- compiling local and regional atlases
- adding to the national database to help determine more widespread trends
- helping to determine trends in status.

This leaflet is aimed primarily at surveys for the four widespread reptile species (adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Lacerta vivipara* and slow-worm *Anguis fragilis*), but much of it also applies to the sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca*.

PLANNING A REPTILE SURVEY

1. Decide the kind of information you want to obtain as a result of the survey. Your reason for conducting the survey will probably be to achieve one or more of the three following objectives:

- to determine the presence or likely absence of reptiles on a site you know little about (*presence/absence survey*)
- to determine the distribution of reptiles within a site, and/or obtain a basic idea of their relative abundance (*detailed survey*)
- to measure apparent changes in abundance of reptiles on a site (*monitoring*).

The methods you choose to employ will depend upon which of these questions you are trying to answer (as well as more practical considerations such as how much time you have to do it in.)

2. Obtain permission (preferably in writing) from the landowner, tenant or manager and make sure they are aware of the activities you will carry out. If surveying on a nature reserve, special permits or consents may be required. Licences may be required if the sand lizard or smooth snake are present on the site and the survey involves disturbing them (e.g. by placing refuges - see *Reptile surveys and the law*).

Produced by:

FROGlife

3. Do some research to find out whether there are any recent or historical records for the site

Froglife. 1999. *Advice Sheet 10. Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation.* Froglife, Peterborough.

Reptile Survey & Mitigation for Peatland Habitats: Guidance & Practice

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- Guidance was prepared between 2015 and 2016 – Scotland only
- Revised by ARG UK between 2017 and 2018 – UK and Ireland
- Published by ARG UK in spring 2018
- Peatland focus

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Background

- Published by ARG UK

- Supported by Froglife, The Herpetological Society of Ireland, Amphibian & Reptile Conservation Trust

Background

John Baker (Amphibian & Reptile Groups of the UK), Mark Barber (Amphibian & Reptile Groups of the UK), Caledonian Conservation Ltd, Stephen Corcoran, Jon Cranfield (Herpetologic Ltd), Roger Downie (Froglife), Forest Enterprise Scotland, Jim Foster (Amphibian & Reptile Conservation Trust), Rob Gandola (Herpetological Society of Ireland), Carolyn Gillen (Caledonian Conservation Ltd), Nigel Hand (Central Ecology), Angela Julian (Amphibian & Reptile Groups of the UK), Steve Langham (Amphibian & Reptile Groups of the UK), Chris Monk (Amphibian & Reptile Groups of the UK), Andrew McBride (SNH), John McKinnell (SNH), Pete Minting (Amphibian & Reptile Conservation Trust), Glenn Norris (Caledonian Conservation Ltd), Silviu Petrovan (Froglife), David Pickett (SNH), Trevor Rose (Friends of Angus Herpetofauna), Scott Shanks (Buglife – The Invertebrate Conservation Trust),Julie Smith (Caledonian Conservation Ltd)

Reptiles on Peatlands

- Aimed at site managers
- Overview of reptile ecology, with specific details relevant to peatland
- Review of population densities
- Habitat use

Reptiles on Peatlands

- Aimed at site managers
- Overview of reptile ecology, with specific details relevant to peatland
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- Habitat use **– crucially hibernacula**

Reptile Survey & Mitigation for Peatland Habitats: Guidance & Practice

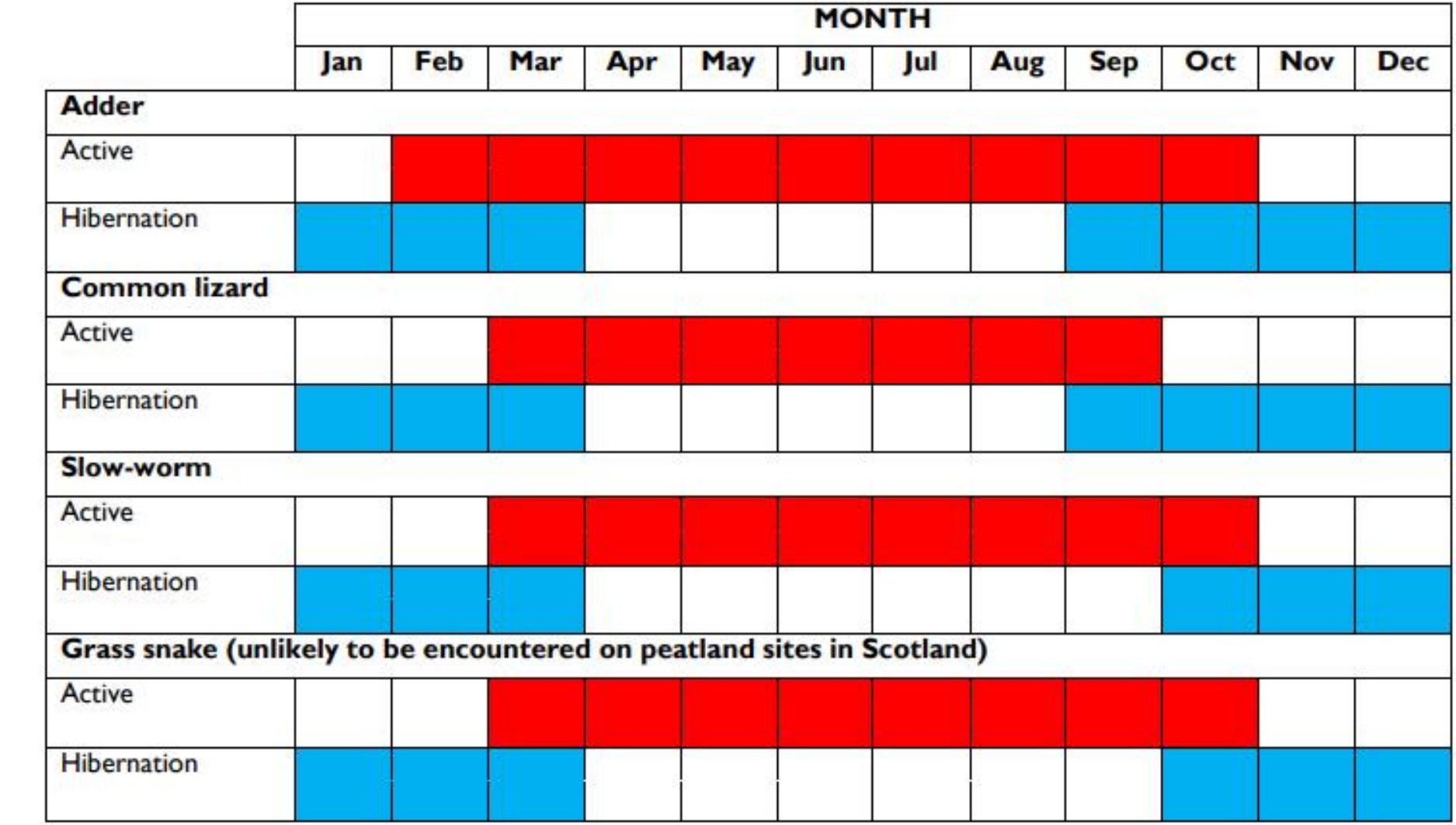

Figure 1. Chart showing active and hibernation periods for reptiles that occur in Scotland. (Note that these vary depending on weather conditions, and differ elsewhere in the UK. Therefore, they should be considered to be indicative only.)

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Reptile Survey

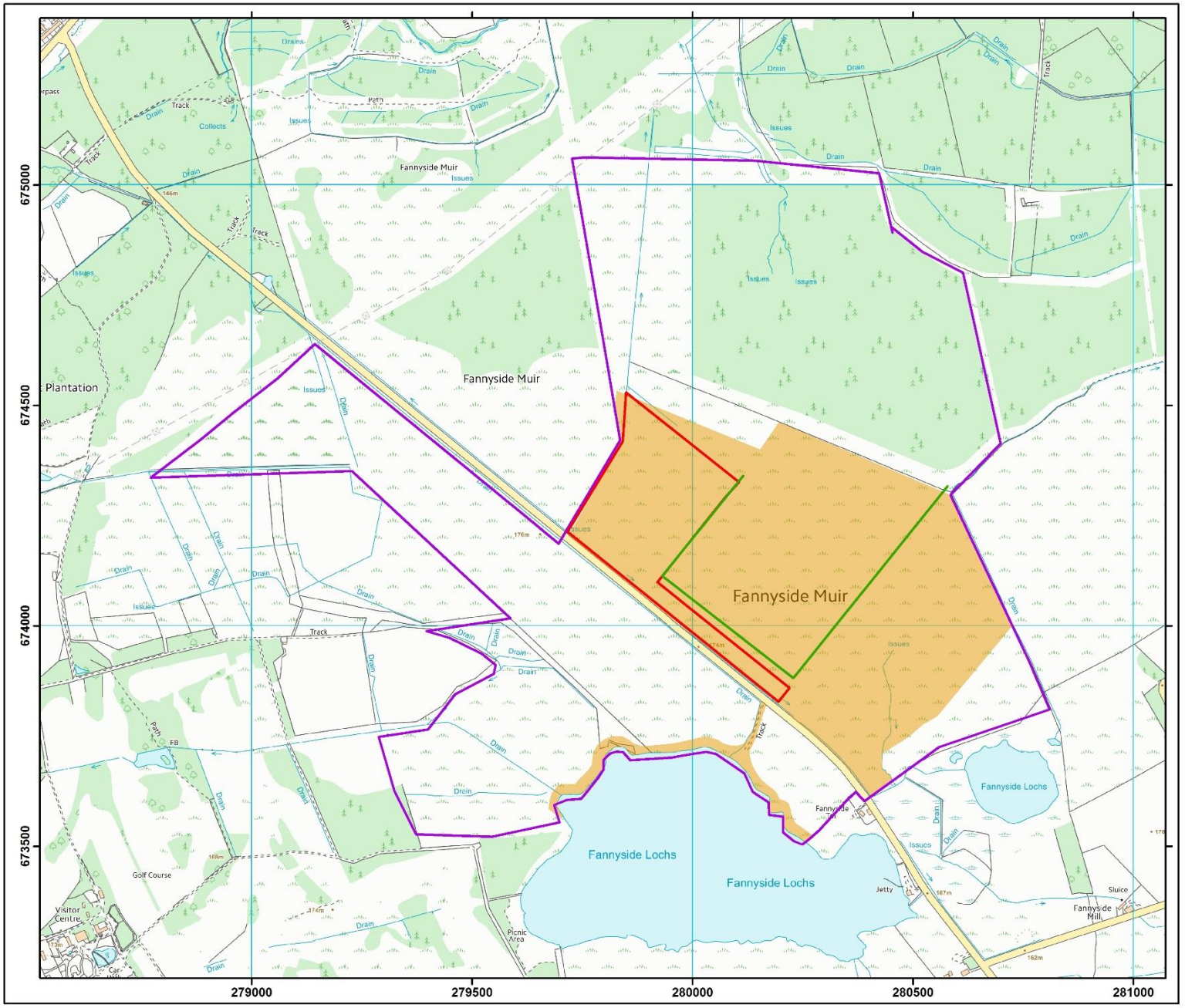
- Desk study
- Habitat assessment / mapping
- Presence

Reptile Survey: Habitat Assessment

- Foraging Habitat
- Potential Hibernaculum Features

Reptile Survey: Habitat Assessment

- Foraging Habitat
- Potential Hibernaculum Features
- Use aerial photography and/or LiDAR data if available
- Site visit



buglife Scotland

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Key

- Railway bund
- Suitable reptile habitat
- Area to be cross-tracked
- Project area

Scale 1:8,000 @ A3

0 100 200 400 m

N

Figure 1
Suitable Reptile Habitat

Fannyside Muir
Reptile Construction Method Statement

Reptile Survey: Presence

- Artificial refugia and visual search combination
- Artificial refugia left for ideally four weeks prior to checks, but two weeks minimum
- Seven survey visits minimum
- Weather: 9-18ºC, no rain, wind < Force 4

Reptile Survey: Presence

- Artificial refugia
- Roofing felt, coroline, corrugated iron
- Size: 50 cm x 30 cm

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Reptile Survey: Presence

- Artificial refugia
- **Roofing felt**, coroline, corrugated iron
- Size: 50 cm x 30 cm **– fits in rucksack**

Reptile Survey: Presence

- Artificial refugia
- **Roofing felt**, coroline, corrugated iron
- Size: 50 cm x 30 cm **– fits in rucksack**
- Minimum density one per 1,000m^2 in suitable habitat (higher density preferable)

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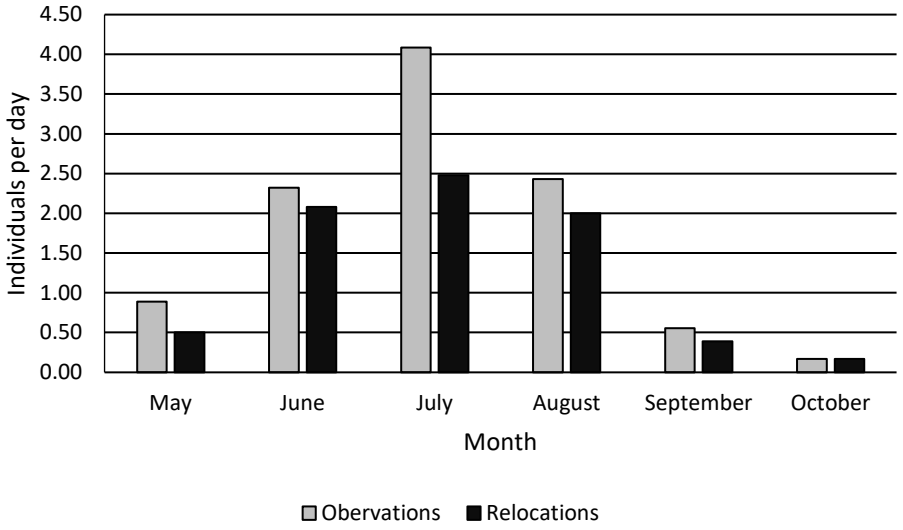
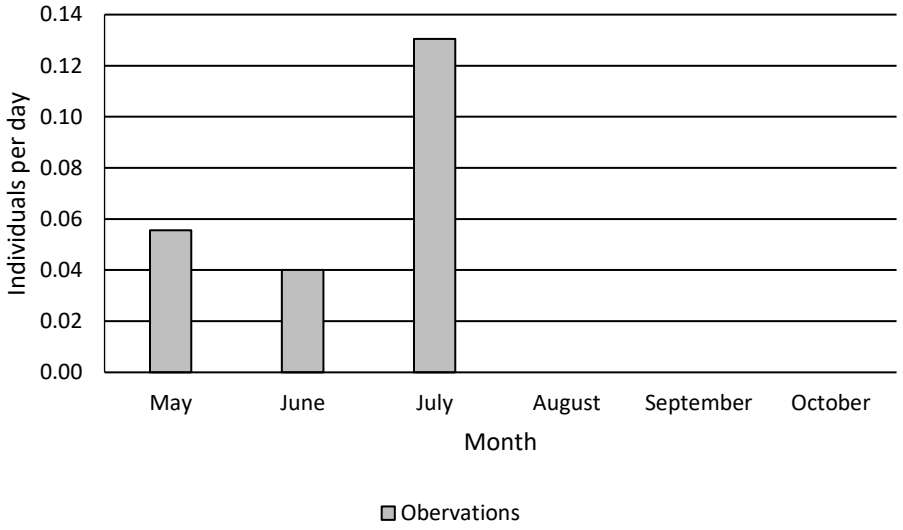
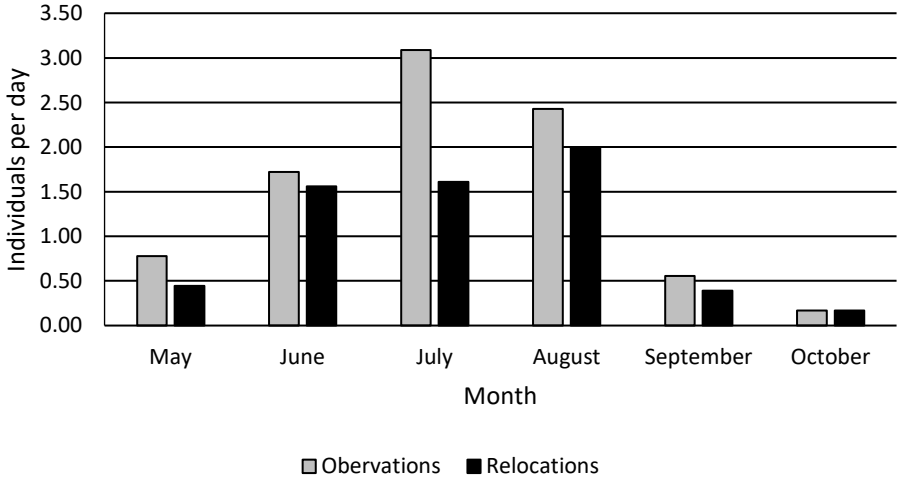
Reptiles observed and relocated per day of effort



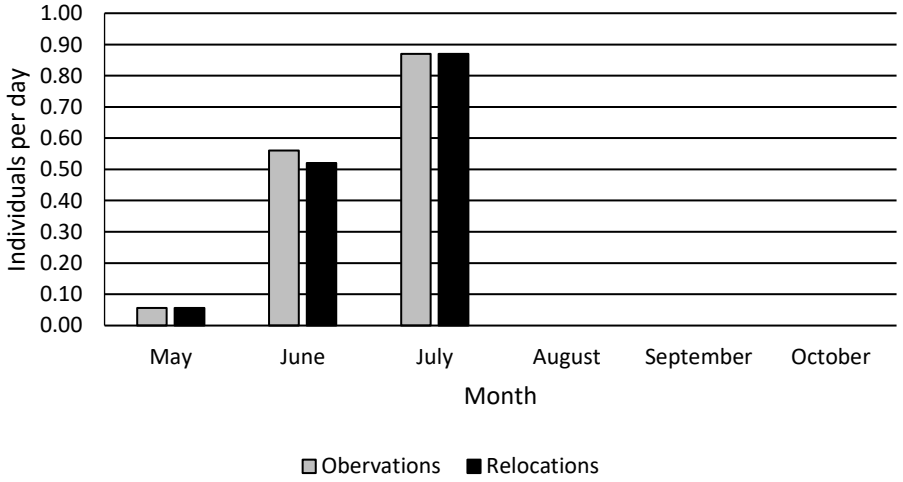
Adders observed per day of effort



Common lizards observed and relocated per day of effort



Slow-worms observed and relocated per day of effort



Reptile Survey: Presence

- Adders:
  - Don’t appear to use artificial refugia as often, particularly low density populations
  - Less detectable after May (England), but perhaps later in Scotland (June/July)

Reptile Survey: Presence

- Adders:
  - Don’t appear to use artificial refugia as often, particularly low density populations
  - Less detectable after May (England), but perhaps later in Scotland (June/July)
  - **Assume present if other reptiles found**

Reptile Mitigation

- Site specific mitigation plans

Reptile Survey & Mitigation for Peatland Habitats: Guidance & Practice

LIFE13 BIO / UK / 000428

Fannyside Muir Construction Method Statement:

Reptile Mitigation

Ref: CC0300/CMS1

27th July 2015

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Reptile Mitigation

- Site specific mitigation plans
- Consult experienced reptile ecologist
- Main focus is to avoid harm (legal requirement)
- Change one of the following:
  - Timing
  - Location
  - Method

Reptile Mitigation

- Timing
  - Foraging habitat: complete works during hibernation period
  - Hibernacula: complete works during active period

	MONTH											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Active												
Hibernation												

Figure 3. Chart showing general indicative active and hibernation periods for reptiles in Scotland for the purpose of planning work on peatland sites. Red indicates peak period, and amber indicates a period where this behaviour is less likely but may reasonably be expected to occur depending on weather. (Note that these do vary depending on species, weather conditions, and differ elsewhere in the UK.)

Reptile Mitigation

- Hibernacula
  - Avoid (30 m buffer but check for basking reptiles within 100 m)
  - Complete works during active period

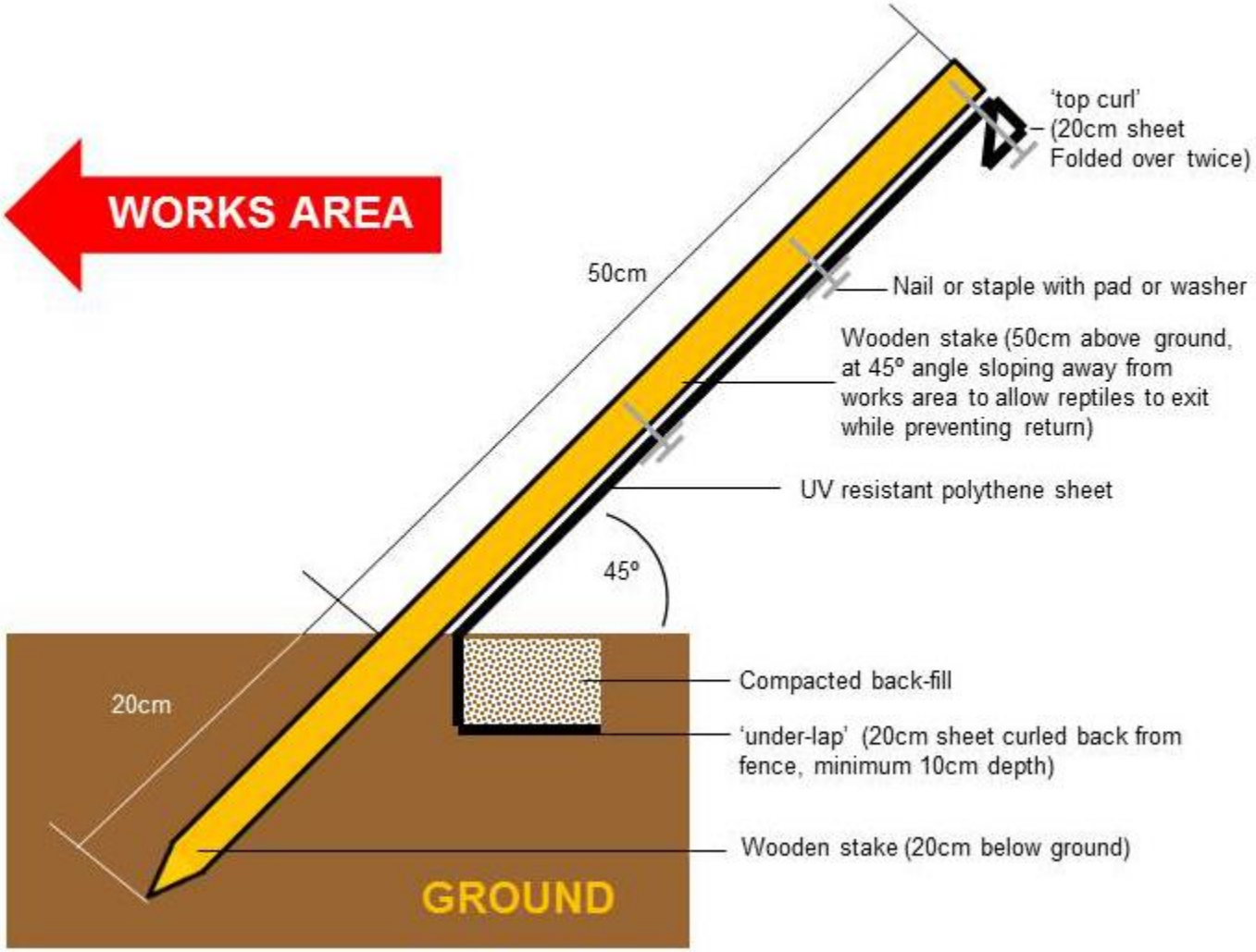
Reptile Mitigation

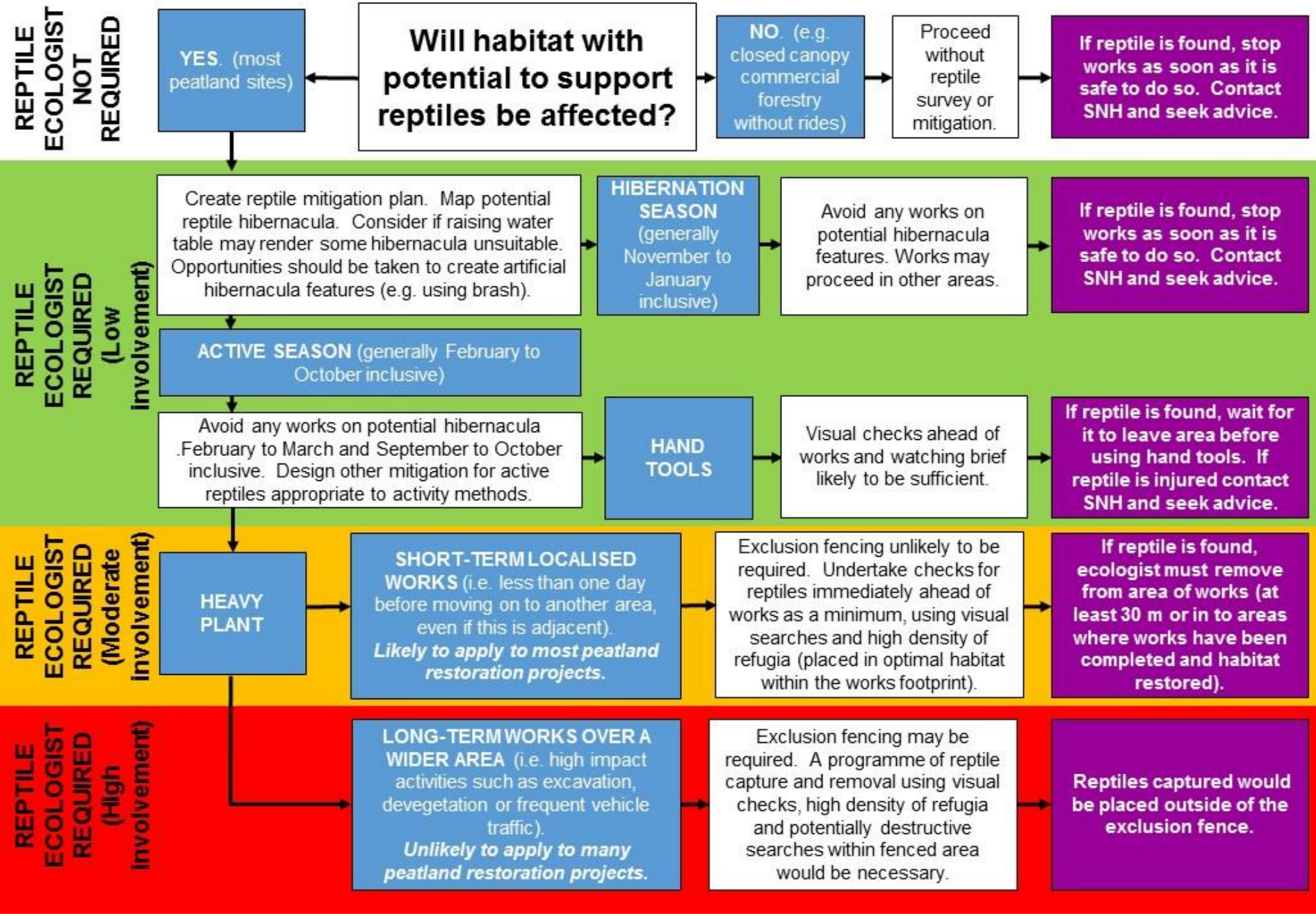
- Hibernacula
  - Avoid (30 m buffer but check for basking reptiles within 100 m)
  - Complete works during active period
  - **Best practice to replace lost hibernacula**
  - Specifications and references are given

Reptile Mitigation

- Avoiding harm during active season
  - Avoid works in suitable habitat during the active season (ie during hibernation)
  - Localised short-term activities:
    - Ecological Clerk of Works (ECoW)
    - Remove reptiles from harm's way
    - Visual searches
    - High density artificial refugia (one per $20m^2$)
  - Habitat lost or high disturbance over longer period: exclusion and removal

One-way reptile exclusion fencing




REPTILE ECOLOGIST NOT REQUIRED
YES. (most peatland sites)
Will habitat with potential to support reptiles be affected?
NO. (e.g. closed canopy commercial forestry without rides)
Proceed without reptile survey or mitigation.
If reptile is found, stop works as soon as it is safe to do so. Contact SNH and seek advice.
REPTILE ECOLOGIST REQUIRED (Low involvement)
Create reptile mitigation plan. Map potential reptile hibernacula. Consider if raising water table may render some hibernacula unsuitable. Opportunities should be taken to create artificial hibernacula features (e.g. using brash).
HIBERNATION SEASON (generally November to January inclusive)
Avoid any works on potential hibernacula features. Works may proceed in other areas.
If reptile is found, stop works as soon as it is safe to do so. Contact SNH and seek advice.
ACTIVE SEASON (generally February to October inclusive)
Avoid any works on potential hibernacula .February to March and September to October inclusive. Design other mitigation for active reptiles appropriate to activity methods.
HAND TOOLS
Visual checks ahead of works and watching brief likely to be sufficient.
If reptile is found, wait for it to leave area before using hand tools. If reptile is injured contact SNH and seek advice.
REPTILE ECOLOGIST REQUIRED (Moderate involvement)
HEAVY PLANT
SHORT-TERM LOCALISED WORKS (i.e. less than one day before moving on to another area, even if this is adjacent).
Likely to apply to most peatland restoration projects.
Exclusion fencing unlikely to be required. Undertake checks for reptiles immediately ahead of works as a minimum, using visual searches and high density of refugia (placed in optimal habitat within the works footprint).
If reptile is found, ecologist must remove from area of works (at least 30 m or in to areas where works have been completed and habitat restored).
REPTILE ECOLOGIST REQUIRED (High Involvement)
LONG-TERM WORKS OVER A WIDER AREA (i.e. high impact activities such as excavation, devegetation or frequent vehicle traffic).
Unlikely to apply to many peatland restoration projects.
Exclusion fencing may be required. A programme of reptile capture and removal using visual checks, high density of refugia and potentially destructive searches within fenced area would be necessary.
Reptiles captured would be placed outside of the exclusion fence.

Peatland Reptile Mitigation Summary Table

Works Activity	Season*	Action / Mitigation	Further Information
Site Design or Preparation of Site Management Plan.	General	Incorporate reptile ecology requirements in to site management plan, including maintaining or enhancing habitat such as hibernaculum features. Set reptile objectives.	Section 5 Section 7.5
Gathering baseline information for preparation of Mitigation Plan.	General	Data search for existing historic reptile records.	Section 5 Section 6
	Hibernation	Map potential hibernaculum features.	Section 5 Section 6
	Active	Map suitable habitat. Undertake presence survey if required using artificial refugia and visual transects.	Section 5 Section 6
Activities using hand tools.	Hibernation	Do not undertake works which could damage hibernacula.	Section 7.2
	Active	Visual check of work area immediately prior to activity. If reptiles present, do not complete works until they have left area.	Section 7.3
Activities using heavy plant – localised, short-term (including infrequent movements of heavy plant across suitable reptile habitat). ***Likely to apply to most peatland restoration projects.***	Hibernation	Do not undertake works which could damage hibernacula. Heavy plant must not move over hibernacula.	Section 7.2
	Active	Ecologist check for reptiles immediately before works using high density of artificial refugia (minimum density of one tile per 20 m^2 placed at least one week prior to works) and visual searches within works footprint (including access routes for heavy plant). Any reptiles found should be removed by the ecologist and relocated to suitable habitat at least 30 m from the area scheduled for works, or in areas where works have already been completed and habitat restored.	Section 7.3 Section 7.4
Activities using heavy plant – larger areas, long-term (including frequent movements of heavy plant using across suitable reptile habitat). ***Unlikely to apply to many peatland restoration projects.***	Hibernation	Do not undertake works which could damage hibernacula. Heavy plant must not move over hibernacula.	Section 7.2
	Active	May require use of barrier fencing to exclude reptiles from an area which will be subject to intensive destructive work or where a particular route will be used for frequent heavy plant movements over an extended period. Fence installation should be supervised by an ecologist. All reasonable effort should be made by an ecologist to remove reptiles from the fenced area, and to place these outside the fence. Destructive searches may be required. If the area will not be restored for reptile use after works are complete, translocation (under licence if appropriate) and/or creation of new areas of reptile habitat as compensation may be necessary.	Section 7.3 Section 7.4
Monitoring	General	Long-term monitoring of reptiles at peatland sites should also be considered. If habitat management is undertaken at a site, monitoring will help determine whether reptile mitigation has been successful, and can inform future projects. Monitoring can also help to identify negative population changes at an early stage, allowing them to be addressed.	Section 7.5

**Hibernation season = September to March inclusive; Active season = February to October inclusive. See Section 2 and Figures 1 and 3 for more information.*

Reptiles in Scotland

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