

Tayside Biodiversity Partnership



# *Green Graveyard Initiative*

## Amphibians & Reptiles in Graveyards Survey



# Table of contents

<b>Introduction to the Project and Survey</b> .....	3
<b>Species Identification – Amphibians</b> .....	4
<b>Species Identification – Reptiles</b> .....	7
<b>Non-native Species – the Alpine Newt</b> .....	8
<b>Methods of Survey – Amphibians</b> .....	9
<b>Methods of Survey – Reptiles</b> .....	10
<b>Report your Sightings</b> .....	11
<b>Further Information</b> .....	12

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## Introduction to the Project and Survey

The Tayside Amphibian & Reptile Group (TayARG) helps safeguard amphibians and reptiles throughout Angus and Perth & Kinross. It is part of ARG UK and its volunteers work with the Tayside Biodiversity Partnership and the Friends of Angus Herpetofauna to help with gullypot checks and a variety of surveys, installing amphibian ladders, undertaking pond clearance tasks, and setting up exhibitions. [Tayside Amphibian and Reptile Group \(arguk.org\)](http://arguk.org); <https://www.facebook.com/TaysideAmphibiansReptileGroup>.

Fifteen years ago the Tayside Biodiversity Partnership launched its Green Graveyard Initiative to enhance and improve the biodiversity in what are invariably green islands surrounded by predominately urban or agricultural neighbourhoods.

<https://www.taysidebiodiversity.co.uk/wp-content/uploads/2015/02/GreenGraveYardIntro.pdf>

*Churchyard surveying (for lichens) © C A G Lloyd*



Saving Scotland's Amphibians & Reptiles is a new and ambitious Scotland-wide initiative being taken forward by Amphibian & Reptile Conservation (ARC). Together with TayARG and ARC, the Tayside Biodiversity Partnership is launching its Amphibians & Reptiles in Graveyards Survey to discover more about the distribution of these species in our graveyards and cemeteries. These spaces tend to be an important haven for a lot of our local wildlife as they are often fairly undisturbed and full of nooks and crannies such as log piles, compost heaps and stone walls suitable for amphibians and reptiles, plus short grass for our rare waxcap fungi, monuments and walls for rare lichens, buildings for swifts and mature trees for bats.

The key reasons for the declining population in many of our species are habitat loss and habitat fragmentation. The latter is often seen when long-established migration routes are cut through by roads, resulting in many amphibians dying on those roads. Surveying for reptiles and amphibians in graveyards allows us to monitor these species, see how they're responding to the challenges posed by urbanisation, and with the local authorities and local communities, introduce projects to safeguard the biodiversity of these important wildlife havens.

Slow-worms need shaded areas and are found in rough grassland, wooded edges and gardens. We suspect they will be found in some rural graveyards. Common frogs and Common toads are seen in graveyards, parks and gardens during spring breeding and migration, often in the proximity of damp areas, ditches and ponds. These areas should be inspected, looking both for the animals and their eggs.

Working in partnership with experts, land managers, local communities and volunteers will enable a better understanding of what species we are hosting in our graveyards and cemeteries. This in turn will help decide the best management needed to accommodate them and for everyone to continue enjoying these important – and often historic - green spaces. By introducing this pilot citizen science project in Tayside, we hope ARC and other organisations will ultimately take it forward across Scotland.

## Species Identification – Amphibians

There are seven types of amphibians in Scotland, however the ones that you're most likely to see are: Common frog, Common toad, Smooth newt and Palmate newt. These animals spend the breeding season in ponds, but they can also be easily spotted on land.

Toads and frogs can be spotted several kilometres away from water during the rest of the year, whilst newts – despite them too spending a good deal of time on land - tend to be more aquatic.

*If surveying a location where Great crested newts are known or suspected to occur, a survey licence is required to carry out the survey. If a Great crested newt is spotted or captured while surveying without a licence, the surveying activity must stop.*



### Common frog (*Rana temporaria*)

**Breeding season:**

Mid-February – April (but they can still be spotted as late as October, when they hibernate)

**Where:**

Frogs will stick to ponds during the mating season. They can still be found on land during the rest of the year, but they're not as tolerant to dry condition as toads are, so look for shaded and moist areas.

**Length:**

Up to 9 cm (males) and 13 cm (females)

**Appearance:**

Skin Usually shades of olive green or brown (but can also be yellow, pink, red, lime-green, cream or black.

Dark patches on the back, stripes on the hind legs

**Pupil:**

Oval, horizontal

**Eggs:**

Grouped in jelly clumps

**Spawn season:**

January-March



## Common toad (*Bufo bufo*)

### Breeding season:

Mid-March – April (but they can still be spotted as late as October, when they hibernate)

### Where:

They can be found around ponds during the mating season, but they tend to live away from water during the rest of the year

### Length:

Up to 8 cm (males) and 13 cm (females)

### Appearance:

Skin usually brown or olive-brown but may be darker.

Belly usually pale with dark speckles. Skin is warty and relatively dry.

### Pupil:

Oval, horizontal

### Eggs:

Two strings of jelly

### Spawn Season:

March-April



*Photo by James Lindsey / CC BY*



*Photo by Ian Kirk / CC BY*

## Smooth newt (*Lissotriton vulgaris*)

### Breeding season:

Mid-April – June (but they can still be spotted as late as October, when they hibernate)

### Where:

They spend the breeding season in ponds, but may be found on land outside the breeding season.

### Length:

Up to 10 cm

### Skin:

Shades of grey or brown

### Belly:

Yellow or orange, usually with black spots and or blotches

### Throat:

Spotted

### Eggs:

Brown, greyish in colour; surrounded by jelly. Eggs are deposited individually and wrapped in leaves.

### Spawn season:

March-June



*Newt egg by Gilles San Martin / CC BY*

**Palmate newt (*Lissotriton helveticus*)**  
 (This is the most common newt species in Scotland)

**Breeding season:**

Mid-April – June (but they can still be spotted as late as October, when they hibernate)

**Where:**

They spend the breeding season in ponds, but can be found on land outside the breeding season.

**Length:**

Up to 9cm

**Skin:**

Smooth brown, green or grey.

**Belly:**

Yellow belly, often with dark dots.

**Throat:**

Unspotted pink or yellow throat.

**Eggs:**

Brown, greyish in colour; surrounded by jelly.

Eggs are deposited individually and wrapped in leaves.

**Spawn season:**

March-June



[Lissotriton helveticus](#) by Alexandre Roux / [CC BY](#)



[Newt egg](#) by Gilles San Martin / [CC BY](#)



[Triturus cristatus: Great Crested Newt](#) by Todd Pierson / [CC BY](#)



[Six day old newt egg](#) by Stéphanie Bret / [CC BY](#)

**Great crested newt (*Triturus cristatus*)**

**Breeding season:**

Mid-April – June (but they can still be spotted as late as October, when they hibernate)

**Where:**

They spend the breeding season in ponds but can be found on land outside the breeding season.

**Length:**

Up to 17 cm

**Skin:**

Dark brown or black.

**Belly:**

Bright orange with black blotches.

**Throat:**

Blotched, orange.

**Eggs:**

Pearl-like, white colour. Eggs are deposited individually and wrapped in leaves. They're bigger than Smooth and Palmate newt eggs

**Extra:**

In spring males develop a crest along their back and a white strip along their tail

**Spawn season:**

March-June



## Species Identification – Reptiles

There are three species of reptiles in Scotland: the Common lizard, the Slow-worm and Adder. These animals are unable to autonomously regulate their body temperature and they rely on the external environment to do so. For this reason they tend to stay in sunny, south-facing areas, with plenty of vegetation that provide them with shelter.

Slow-worms are often mistaken for snakes, but they're actually lizards, harmless and not venomous. The Adder is indeed venomous, however it's the hardest to spot of the three and tends to hide in the undergrowth. Its venom is relatively mild and only dangerous to the very young, ill or old. If you see one, leave it alone and let it move away quietly.

### Common (Viviparous) lizard (*Zootoca vivipara*)

**Season:**

March – October

**Where:**

Wide range of habitats. They prefer damp areas and grass tussocks, but they can be found anywhere there's sun and shelter-providing vegetation

**Length:**

15 cm (tail included)

**Skin:**

Generally shades of browns, but it may also be yellow, green and black. They often have stripes or spots on the back.

**Eyes:** Contrary to snakes, they have eyelids and circular pupils

**Extra:** Can shed its tail



### Slow-worm (*Anguis fragilis*)

**Season:**

March – October

**Where:**

Dense, grassy vegetation in the sun. They have a preference for compost heaps and a dislike for very humid or very dry areas.

**Length:**

40-50 cm

**Skin:**

Shades of brown and grey; females may have a black line along the back.  
Contrary to snakes, they have no scales, and have a "shiny" appearance.

**Eyes:**

Contrary to snakes, they have eyelids and circular pupils

**Extra:** Can shed its tail



## **Adder (*Vipera berus*) (venomous)**

**Season:**

March – October

**Where:**

Open, dry and sunny grassland, heathland or moorland.

**Length:**

60 - 80 cm

**Skin:**

From grey-white to shades of browns.

They have scales and distinctive “zig-zag”

black or brown stripe on the back.

**Eyes:**

Red eyes and vertical split pupils



## **Non-native Species – the Alpine Newt**

Alpine Newt sightings are rare in Scotland, but not unheard of. Being a non-native species, it is illegal to release them in the wild under the Wildlife and Countryside Act 1981. If an Alpine newt is accidentally caught, it must be either ethically euthanised or rehomed in captivity.

Contact ARC for further advice.

### **Alpine newt (*Ichthyosaura alpestris*)**



**Season:**

Mid-April – June

**Length:**

Up to 11 cm

**Skin:**

Dark colour, often with blue tinges and a marbled pattern

**Belly:**

Bright orange

**Throat:**

Unspotted orange

**Extra:**

During the breeding season males develop a yellow crest with black spot



## Methods of Survey – Amphibians

*Although amphibians are most likely to be found near ponds (where they lay their eggs), they can hibernate in tussocky grass or tucked into log or stone piles. Walls and table/chest tombs also give them excellent shelter. If you are looking for amphibians and there is a pond nearby, start your inspection from there if possible. If there's no pond, do not despair! Amphibians do not spend their whole time in water, so carefully explore any long grass in the graveyard, the larger monuments or any stone walls.*

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### *Terrestrial inspection*

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On land amphibians need moisture and shelter, so look for:

- Shaded and moist areas (stonewalls, damp grassy areas, piles of dead leaves, deadwood, etc.)
- Nooks and crannies that can provide shelter

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### *Visual search of a pond and its surrounding area*

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Inspect the water body and the surrounding area looking for:

- Amphibians in water
- Amphibians under refugia (large stones, logs, etc.)
- Newt eggs on submerged plants\* (April-May)
- Spawns – clumps for frogs, strings for toads (March-April)



\*Newts fold their eggs in the leaves of submerged plants to protect their eggs from predators. Pay attention to the vegetation.

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## Netting in pond

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If there's a lot of vegetation covering the water surface, netting may help in inspecting the pond. If any Great Crested Newts are present, it is vital to contact NatureScot before any surveying begins as a license will be required.

Please read page 4 "Safety Around Ponds" in the Pooling our Ponds Welcome Pack -

[Pooling-our-Ponds-Welcome-Pack-FINAL-LB-CL-02-09-21-1.pdf](https://taysidebiodiversity.co.uk/Pooling-our-Ponds-Welcome-Pack-FINAL-LB-CL-02-09-21-1.pdf) ([taysidebiodiversity.co.uk](https://taysidebiodiversity.co.uk))

*Photo by Richard SutcliffeS / CC BY*

Using a net with a rigid frame follow these steps:

- Net from the bank of the pond
- Stop every two metres to sweep the net through vegetation at the pond edge
- Distress the animal as little as possible, and release into the water quickly
- Move 2 metres along the bank and repeat
- Froglife recommends 15 minutes of netting per 50 m of bank

*Warning: **Excessive** netting can stress animals, damage vegetation and stir up the silt.*

## Methods of Survey – Reptiles

*There are two main ways to survey for reptiles: walkabout search and artificial covering objects (ACOs). For optimal result, combine the two methods by planning a route ahead and placing several ACOs.*

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### Walkabout search

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- Identify a suitable area: reptiles need sunlight, grass and objects that provide them with cover
- Walk slowly avoiding sudden movements.
- Pay attention to objects that may provide a suitable surface for reptiles to sunbathe (like table tombs)

*© Trevor Rose*



- Carefully inspect artificial and natural refugia (ACOs, wooden planks, stones etc.)
- If you hear a rustle but cannot identify the animal, return to same spot about 10 minutes later

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*Artificial covering objects*

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Reptiles can't regulate their body temperature autonomously. Installing artificial cover objects that allows them to sunbathe and also provide them with shelter is a good way to attract and survey reptiles.

- Using materials like corrugated iron, or onduline roofing sheets, cut out a 50 cm – 1 m square. Alternatively you can also try using slate roofing tiles
- Position the ACO on grass in a south facing sunny position, away from paths or other locations where the reptiles may be disturbed
- Put down a sign stating "Reptile survey – please do not remove"
- Make note of the location of the ACO (you can use your mobile phone GPS)
- Come back to check the refugium after a few weeks



*Photo by Leo Reynolds / CC BY*

## Report your Sightings

Any sighting should be reported on the [Record Pool](#) App of the Amphibians and Reptiles Conservation Trust (ARC).

Whilst on site, the surveyor may temporarily make use of the form below, provided that any sightings are also uploaded on the ARC website at a later time.

*\*Egg, larvae, young, adult, dead*

Date	Time	Location	Stage*	Species	Quantity



## Further Information

- To find out more about the **Tayside Green Graveyard Initiative** check: <https://www.taysidebiodiversity.co.uk/2015/02/03/green-graveyards-initiative/>
- **Amphibians and Reptiles Handbook:** <https://www.arc-trust.org/Pages/Category/habitat-management>
  - TayARG (Tayside Amphibian & Reptile Group) - <https://groups.arguk.org/tayarg>
  - FAH (Friends of Angus Herpetofauna) - [Friends of Angus Herpetofauna \(FAH\) \(arguk.org\)](https://www.arguk.org/)
  - Amphibian and Reptile Conservation (ARC) - <https://www.arc-trust.org/>
  - ARG UK (Amphibians & Reptile Groups UK) - <https://www.arguk.org/>
  - ARC Monitoring Programme - <https://monitoring.arc-trust.org/>

### Identification Guides –

- Amphibians: <https://www.arc-trust.org/Handlers/Download.ashx?IDMF=efd86c09-5c47-4348-aeb4-02dd90027769>
- Reptiles: <https://www.arc-trust.org/Handlers/Download.ashx?IDMF=9493c965-0279-45d7-b271-015067ec87b5>
- Alien species to the UK: <https://www.arc-trust.org/Handlers/Download.ashx?IDMF=bb742bc6-2d7d-4dc5-bd59-03c3f8018eed>

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April 2022

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Websites: <https://groups.arguk.org/tayarg> and

<https://www.taysidebiodiversity.co.uk/get-involved/projects/projects-amphibians-and-reptiles/>

Facebook: @TaysideAmphibiansReptileGroup and @TaysideBiodiversity

*New Volunteers and members are always welcome (no experience necessary) – just contact TayARG*

Tayside Biodiversity Partnership



amphibian and reptile  
conservation

