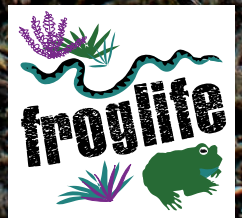




surveying for reptiles

Tips, techniques and skills to help you survey
for reptiles



‘Surveying for Reptiles’

is a handy guide which summarises key ID features of common reptile species, and provides you with important tips, techniques and skills to help you survey for these amazing creatures.

Cover image:
Adder /Silviu Petrovan

Froglife is a registered charity in England & Wales (no.1093372) and in Scotland (no. SC041854). Froglife is concerned with the protection and conservation of native amphibians and reptiles and the habitats they depend on.

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Surveying for Froglife

Why should I survey?

It's great fun and gets you outdoors among nature!

On top of that good survey data allows Froglife to:

- verify presence or likely absence;
- monitor distribution and population change;
- inform site management;
- monitor for non-native species;
- monitor for spread of disease and/or evidence of persecution;
- contribute data to local biological recording centres.

Where should I send my survey data?

- Survey data can be recorded using our paper survey forms or via Froglife's Dragon Finder app (search for 'Dragon Finder' in the App Store or Google Play).
- Alternatively you can send your data directly to Froglife.

We pass all of our data to local biological record centres.

Remember - surveys with 'zero' or likely absence results are still useful data to us!

This booklet contains two survey forms. If you require more forms please visit:

www.froglife.org/info-advice/wildlife-spotting

Send your forms to:

Froglife, 1 Loxley, Werrington, Peterborough, PE1 4BW

Species identification

These pages cover the native UK reptile species in their adult form.

For non-native species, information on eggs and larvae, or further help with identification please visit:

www.froglife.org/amphibians-and-reptiles

or download the new version of our free Dragon Finder app, available on iPhone and Android.



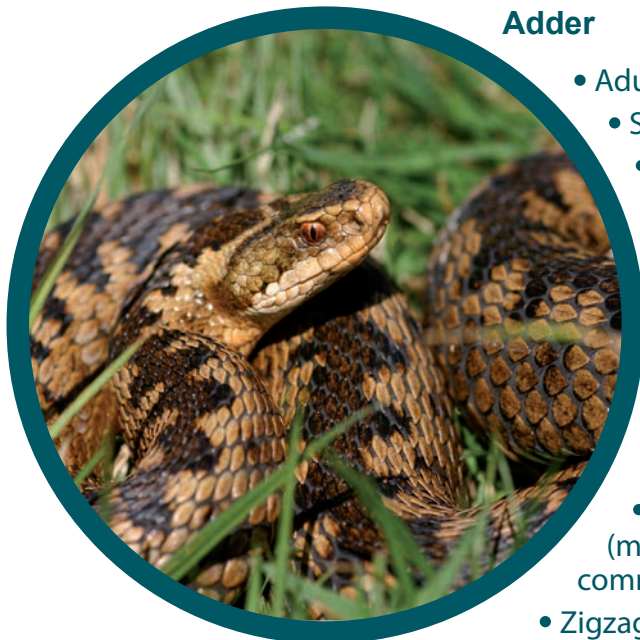
Snakes

Smooth Snake



- Adults 60-70 cm in length. Females often bigger than males.
- Slender body.
- Usually grey or brown in colour with a paler belly.
- Usually have two rows of dark spots down the back and a heart-shaped crown on the head.
- Dark line runs along the side of the head, through the eye.
- Circular pupils.

Adder



- Adults 60-80 cm in length.
- Stocky body.
- Males generally grey with black markings.
- Females generally light brown with dark brown markings.
- Very young individuals reddish-brown but zigzag pattern still visible.
- Completely black (melanistic) adders quite common in some areas.
- Zigzag pattern down centre of the back and a 'V' or 'X' shaped marking on the head.
- Reddish iris with vertical pupil.

Grass Snake



- Adults up to 150 cm in length.
- Grey-green in colour with a cream, yellow or light green belly.
- Distinctive yellow and black collar behind the head. Dark markings along the side and belly.
- Circular pupil.

Lizards

Common Lizard



- Adults up to 15 cm in length (including tail).
- Males have a larger head and slimmer body than females, and prominent swelling at the base of the tail.
- Usually a shade of brown but colour variants include yellow, green and black.
- Pattern of spots and/or stripes down the back.
- Males have a yellow/orange belly with black spots. Females have a pale, un-spotted belly.
- Often mistaken for newts.

Lizards have scaly, rather than smooth skin and move away very quickly when disturbed.

Sand Lizard



- Adults up to 20 cm in length (including tail).
- Short-legged and stocky with a short, deep head.
- Colour is variable: shades of grey and brown.
- Dark band down centre of back (may contain dark or light blotches). Usually two strong stripes down the back.
- Dark spots, ocelli (marking that resembles an eye) or mottling on sides.
- Males develop bright green flanks during the breeding season.

Slow Worm



- Adults up to 50 cm in length.
- Juveniles very thin and around 4 cm in length.
- Shiny, smooth skin.
- Males: usually grey or brown in colour. May have bright blue spots.
- Females: usually golden brown on top and darker on sides and belly. Often have a dark stripe running along back.
- Juveniles: black or dark brown belly. Gold, silver or copper sides. Often have a dark stripe running along back.
- Visible eyelid.

• May be confused with snakes: unlike snakes they can blink, have a flat forked tongue and can drop their tails if attacked



When to look for reptiles

Reptiles are ectothermic. This means they require an external 'boost' to their body temperature to become fully active.

Reptiles achieve this effect by positioning themselves in places of increased warmth. This can involve 'basking' on a heat-gathering surface in the sunshine (in the open or amongst some vegetation) or under objects (refugia) that absorb heat.

Much of this behaviour occurs during the morning and late afternoon but potentially at any time of the day depending on season and weather patterns. This presents us with an opportunity to lead to their discovery.



When to look

The best survey timing will vary with location, weather patterns and species, but generally reptiles are active from March to October. The best time to survey is a mixture of time of year, time of day and weather conditions.

Time of year: peak months are April and May. In March you may spot emerging animals near hibernation sites if conditions are suitable. Late August to late September can be useful for seeing juvenile animals. July and early August are generally less useful months for surveying due to the days being hotter (even reptiles can get too hot and seek shade).

Time of day: peak times are April and May during morning hours (between 8.30am - 11.00am) and 4.00pm - 6.30pm in the afternoon. In March try looking during the warmer parts of the day (midday). In late June, when the weather is generally warmer, reptiles may be found earlier in the morning and later in the afternoon.

Weather conditions: peak air temperature is between 9-20°C. Bright sunshine is favourable on cooler days and hazy or intermittent sunshine is favourable when warmer.

Rain or wind is unsuitable. Also weather sequence is important: a hot spell after several days of cold weather, or showery weather after a prolonged dry period are favourable.

Where to look for reptiles

Good reptile habitat generally has open aspect areas, is well drained and south facing, is mostly sunny, sheltered and relatively undisturbed. Typical habitats that have these qualities include:

1. Grasslands
2. Heathland and Moorland
3. Chalk downland
4. Open woodland - coppiced with rides and glades
5. Young forest plantations
6. Sand dunes
7. Disused corners/edges of allotments
8. 'Brownfields' (disused previously developed land subject to natural colonisation of plants)
9. Golf courses
10. Road and rail verges/embankments
11. Private gardens

Reptiles can also be found in damp areas such as wet heaths and bogs. Grass Snakes in particular will favour wetland areas for finding prey.



Reptile hotspots

Within an area of suitable habitat you will need to focus in on key areas or 'hotspots' that will be attractive to reptiles. These hotspots offer good potential for basking with a south facing sunny aspect and cover. Examples include:

- Embankments and mounds, hollows and other slopes
- Logs, brash piles, posts, rock piles, metal objects
- Stony areas with crevices e.g. dry stone walls, cliffs, rocky outcrops
- Sun traps on open ground within denser vegetation
- Base of hedges and tree lines
- Paths cut or trodden through denser vegetation or woodland
- Edge of woodland/scrub/bramble patches and grassy areas especially if 'tussocky' grassland
- Cover items (refugia) such as stones, wood or 'rubbish' items that animals may warm up underneath
- Habitat piles e.g. compost heaps, logpiles, cut grass



Log pile



Refugia (tin)

How to look for reptiles

You will use two main techniques for surveying reptiles:

Walkabout search and Refugia/tilting

Ideally, plan to combine walkabout and refugia search techniques where possible along a survey route (called a transect) across your site.

For best results you will need to visit your survey site to plan your survey – locate hotspots and then map your transect route and where you might place any refugia. Think about connectivity of habitat and how animals may use areas.



Walkabout search

This involves walking through likely habitat areas focussing attention upon local hotspots that reptiles might use to warm up.

Take the following approach:

- Walk slowly and tread lightly – reptiles have keen senses and are sensitive to vibrations.
- Keep the sun behind you looking into basking spots but beware of casting shadows.
- Scan by observing ahead (up to a few metres). Focus on potential basking spots.
- Be alert to sudden movements or rustles in the vegetation. (Lizards will dart away quickly and snakes will glide carefully away taking longer to do so)
- If you hear a rustle or glimpse a fleeing animal, return to same spot about 10 minutes later – animals may return to the same spot especially lizards and adders
- Do not chase animals through the undergrowth
- Inspect natural refugia – carefully look under old tin sheets, stones, wooden planks, carpet etc.
- Note any potential egg laying sites for reptiles for later monitoring. In October you may carefully examine these for remains of snake eggs.
- Look out for white/pale grey coloured discarded skins of reptiles, especially snakes. These are often found near rocks and other 'rough edges' that reptiles will rub against to help shed their skin.



Using refugia ("tinning")

Searches using artificial refugia (also called artificial cover objects or ACOs) increase the likelihood of discovering reptiles because they absorb and trap heat offering reptiles an excellent means to gain warmth, while also providing protection from predation and disturbance.





How big?

Cut your refugia to approx 50cm -1m square.

Where to put them?

- In a hotspot zone (see page 10). Remember vegetation height will change over the season. What looks a suitable basking site in March may be overgrown by tall vegetation by July.
- Ideally a south-facing, sunny position - the refugia need to be exposed to sunlight for at least part of the day.
- Place refugia on grass/light vegetation rather than bare ground – this will provide some humidity under the refugia. Partially conceal the refugia with vegetation – longer vegetation around the refugia offers reptiles a safe retreat if disturbed. It also helps to avoid discovery by people too.
- DO NOT place adjacent to paths or in places where undesired removal and disturbance of animals may result.

Record your refugia

- Mark each refugia with a number and the words 'Please do not remove – wildlife survey'.
- Map their location as accurately as possible.
- Let them 'bed down' for a few weeks before you begin to survey.

How many to use?

- This will depend on many factors such as likelihood of disturbance, size of survey site and ease of access.
- The more refugia laid in suitable habitat, the greater the chance of finding reptiles. Examining about 30 to 50 refugia together with transect walking will make for a good average length survey session of up to two hours.
- As a general guide place in groups of up to 10 sheets 2 to 5m apart along suitable habitat hotspots. A baseline density of 10 per hectare of habitat is recommended but higher densities will increase your chance of finding reptiles. You will need to prioritise locations as you may not have enough resources to cover a whole site in one go.
- Good reptile hotspots that are not suitable for refugia should be covered as part of the walkabout survey.

How to inspect them

- Ideally refugia should feel warm (not really hot) to touch to be attractive to reptiles
- Lift carefully from one corner to near vertical position – use a stick or bite proof glove if in a potential Adder area
- Do not grab or handle any animals
- Replace in exact location
- Remember, reptiles may use refugia during cool weather, as overnight shelter, or when hot as vegetation underneath will increase humidity.

How often to survey

If only one visit is possible then do so during May and use both a walkabout technique and refugia inspection if possible.

The recommended minimum number is seven visits. Each survey session should be planned to take less than 2 hours. A suggested pattern is:

VISIT 1-2: Mid-March - early April

VISIT 3-4: April - May

VISIT 5-6: Late May -end June

VISIT 7: Late Aug - Late Sept

**Walkabout & Inspection of placed refugia:
March - June and September**



Personal safety

- Carry out a site risk assessment for the site you plan to survey.
- Identify additional hazards associated with the site.
- Do not carry out a survey if you feel unsafe to do so.
- Always gain permission of the landowner to survey.
- Provide a plan of where survey refugia have been placed.
- Try to survey with another person and let others know where and when you are surveying.

Legality

The Wildlife and Countryside Act 1981 makes it an offence to intentionally kill or injure any of our native snakes and lizards.

The sand lizard and smooth snake receive additional protection: for these species it is unlawful to capture or possess them, or to damage or obstruct access to places they use for shelter or protection, or to disturb them whilst in such a place. Therefore, for these species, a licence is required for surveys using refugia where these animals might be found. Observation without handling is not licensable.

Local by-laws for nature reserves (notable national nature reserves) may impose further restrictions for surveys.

Other information

Safeguard the environment - CHECK, CLEAN and DRY:

Precautions should be taken to avoid the potential spread of disease between reptile and amphibian populations and the spread of non-native plants and animals.

- CHECK all equipment to remove fragments, seeds and live organisms
- CLEAN and wash all equipment thoroughly after every pond visit
- DRY all equipment as some pathogens can survive for several days or even weeks in damp conditions.

Please see Froglife's "Surveying for Amphibians" booklet for additional advice on surveying wetland sites and how to prevent the spread of non-native plants and diseases.



Using the survey form

What are we recording?

Site details: Site name, address, and grid reference if possible.

Survey conditions:

- Temperature (°C)
- Current weather and weather pattern of previous few days
- Water clarity (if known)

Setting: Urban, suburban or rural?

Other information: Use this section to make a note of other important features such as nearby rail tracks, presence of livestock (dogs too), evidence of vegetation management (i.e. mowing regime).

Species records:

- Identify the species and lifecycle stage if possible – this helps to determine if breeding is occurring.
- Tick to indicate presence or add numbers where possible – add a question mark if unsure.
- Note where seen – on log, along path, refugia etc

Notes: Use this section to record habitat features of interest. This could include adjacent land use, hibernation/egg laying sites, habitat condition, etc.

Fill in a new reptile survey recording form for every survey you complete. Do this *in situ*, or immediately after you survey – you will forget otherwise! Please send us all of your surveys even those where you found nothing.

This booklet contains three survey forms. If you require more survey forms please visit:

www.froglife.org/info-advice/wildlife-spotting

Send your forms to: Froglife, 1 Loxley, Werrington,
Peterborough PE4 5BW

Reptile Survey form



Recorder details	Site details
Name:	Name:
Address:	Address:
Telephone number:	
Email address:	Grid Reference:

Survey conditions:

Date: _____ Time: _____

Air Temperature: _____ Weather conditions: _____

Setting (please tick):					
Urban		Suburban		Rural	
Habitat Types Present (please tick):					
Woodland		Parkland		Scrub	
Grassland		Garden		Arable	
Brownfield		Marsh		Other	
Pond (<0.25 HA)		Pond (Up to 0.25 HA)		Pond (0.26-2.0 HA)	
				Lake (2.0 HA +)	

Other information:

Reptile Survey form



Recorder details	Site details
Name:	Name:
Address:	Address:
Telephone number:	
Email address:	Grid Reference:

Survey conditions:

Date: _____ Time: _____

Air Temperature: _____ Weather conditions: _____

Setting (please tick):					
Urban		Suburban		Rural	

Habitat Types Present (please tick):							
Woodland		Parkland		Scrub		Ditch/Stream	
Grassland		Garden		Arable		Heathland	
Brownfield		Marsh		Other			
Pond (<0.25 HA)		Pond (Up to 0.25 HA)		Pond (0.26-2.0 HA)		Lake (2.0 HA +)	

Other information:

Reptile Survey form



Recorder details	Site details
Name:	Name:
Address:	Address:
Telephone number:	
Email address:	Grid Reference:

Survey conditions:

Date: _____ Time: _____

Air Temperature: _____ Weather conditions: _____

Setting (please tick):					
Urban		Suburban		Rural	
Habitat Types Present (please tick):					
Woodland		Parkland		Scrub	
Grassland		Garden		Arable	
Brownfield		Marsh		Other	
Pond (<0.25 HA)		Pond (Up to 0.25 HA)		Pond (0.26-2.0 HA)	
				Lake (2.0 HA +)	

Other information:

Species	Adults			Juveniles	Eggs	Dead	Diseased	*Survey Methods
	Male	Female	Unknown					
Lizards								
Common Lizard								
Slow-Worm								
Other (please specify)								
Snakes								
Grass snake								
Adder								
Other (please specify)								

*Survey methods: Visual search (V), Netting (N), Torchng (T), Refugia (R). Refugia type: Natural (N), Tin (T), Onduline (O), Felt (F).

Notes:

Froglife is a UK wildlife charity committed to the conservation of amphibians and reptiles - working with people, enhancing lives together for a healthier planet.

Froglife

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If you would like to become a Froglife Friend please fill in this form, detach and post it to: Froglife, 1 Loxley, Werrington, Peterborough, Cambridgeshire, PE4 5BW

Name

Address

..... Postcode

Contact Tel.

Email

Level of Froglife Friendship:

☐ £18 - annual single Friendship

☐ £36 - annual joint or family Friendship

☐ £500 Friend for Life

☐ I am a UK taxpayer. Froglife (registered charity no. 1093372) can benefit from Gift Aid on my donation.

Signed Date

I would like to pay by: ☐ Cheque ☐ Card (see below)

Card No. (long number on front)

Start Date Expiry Date

Issue No. (if present) Security Code
(last three digits on reverse)

Name on card

Address (if different from above)

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