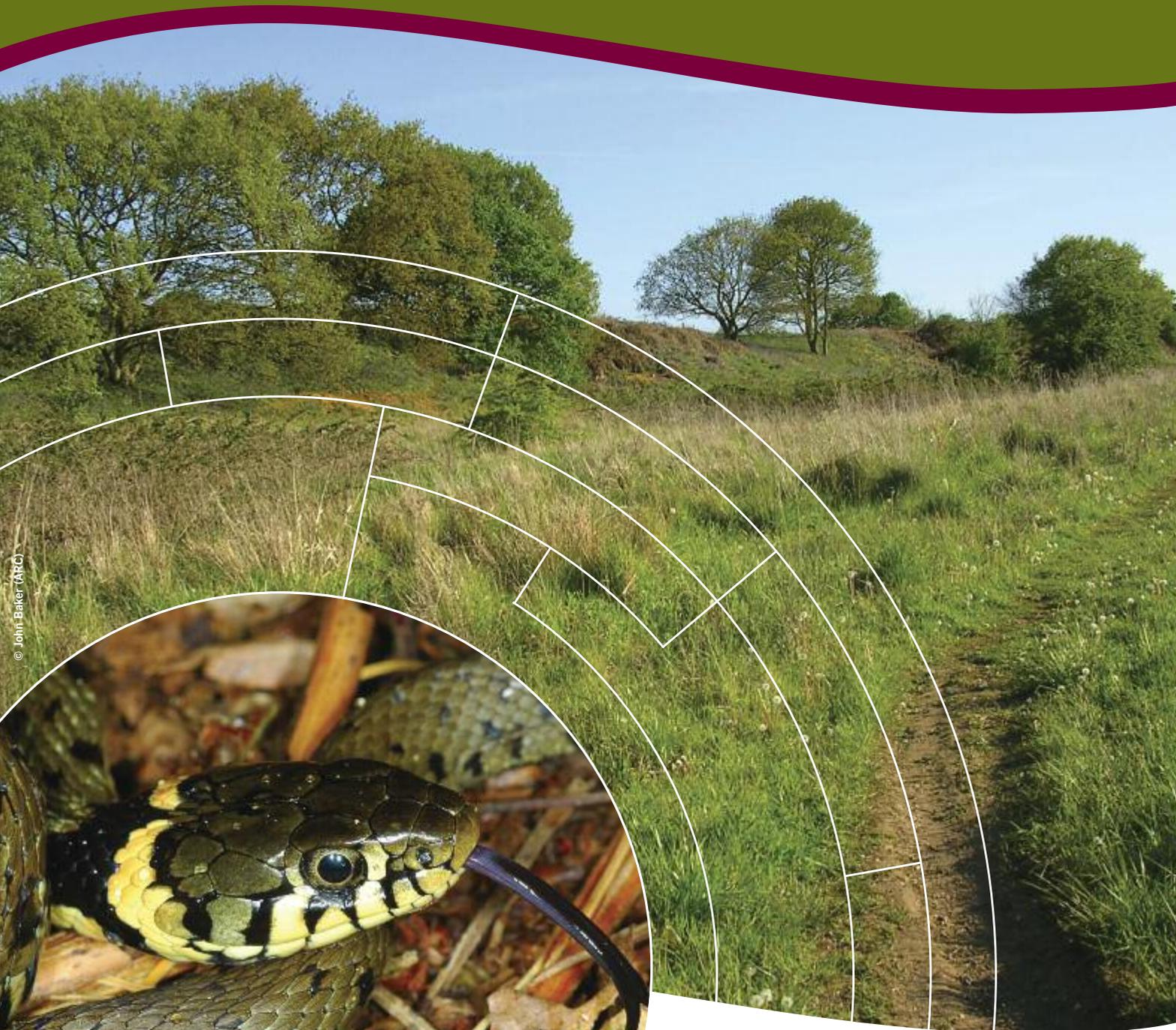


Environmental Stewardship

# Selecting Environmental Stewardship Options to Benefit Reptiles



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Adder

## Reptiles

There are six native reptile species in England. Four of them, the viviparous lizard, slow-worm, grass snake and adder, are widespread but, nevertheless, have declined in numbers. Sand lizards and smooth snakes have very limited ranges in England, being mainly confined to heathland sites in southern counties and, in the case of sand lizards, also to sand dunes on the Mersey coast. All native reptiles are listed as priority species under the UK Biodiversity Action Plan.

## Reptile habitat requirements

Reptiles maintain relatively high body temperatures when active. They do this by using external heat sources, for example by basking in the sun. They therefore need:

- Warm, sunny habitat
- Shelter from extremes of temperature and wind
- Vegetation cover to provide shelter from predators
- Populations of prey species (invertebrates for common lizards and sand lizards; soft-bodied invertebrates for slow-worms; amphibians and fish for grass snakes; small mammals and reptiles for adders)
- Egg-laying sites (piles of manure or cut vegetation for grass snakes and patches of open sand for sand lizards)
- Hibernation sites (banks and boundary features).



© Chris Gleed-Owen

Slow-worm



© Fred Holmes

Common lizard

## Reptiles on farmland

Arable land itself has little to offer reptiles but stewardship options can create useful habitat elsewhere within the farmed landscape. Reptiles need a combination of open, sunny habitats, with vegetation cover nearby (for example mosaics of scrub and grassland), and continuity of habitat. Habitats can be created within buffer strips, and woodland edge and rides. These linear features can provide habitat in themselves and corridors to link other patches of reptile habitat together. Taking an awkward patch of land out of production and allowing it to develop as tussocky grass and scrub (management of field corners EF1/OF1, HF1/OHF1 and EK1/OK1, HK1/OHK1) could provide valuable reptile habitat. Reptiles hibernate over winter and are active from February/March to October. During the active period they require vegetation cover so, for management of grassland and scrub, it is best to extend the 'non-cutting season' to coincide with this time.



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Grass snake

## What sort of habitat do reptiles occupy?

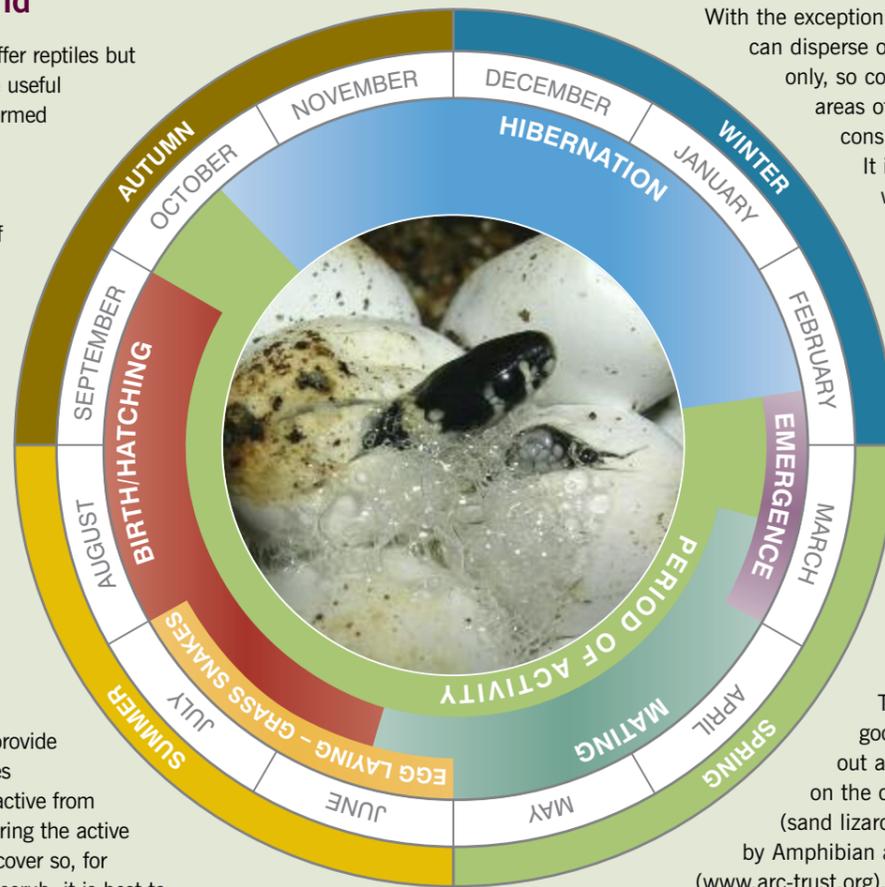
Reptiles can be found in a wide variety of habitats including rough grassland, scrub, heath or brownfield sites. These have a good mix of habitat features, such as sunny embankments and structure to the vegetation. In farmland they may use hedgerows, uncultivated uneven ground, south facing banks, buffer strips, woodland edges and other linear features.

## Survey and planning

With the exception of the grass snake, reptiles can disperse over relatively short distances only, so connections between different areas of habitat are crucial when considering stewardship options.

It is important to find out whether reptiles are already present in the area and, if so, which areas of the landholding, or adjacent land, they already occupy. Options should be selected not only to enhance habitat, but also to provide continuity with existing occupied habitat and to improve connectivity. Information on local distribution may be held by local biological records centres or the local Amphibian and Reptile Group (see [www.arguk.org](http://www.arguk.org)).

The local ARG may also be a good source of advice on carrying out a survey for reptiles. Information on the distribution of rare reptiles (sand lizard and smooth snake) is held by Amphibian and Reptile Conservation ([www.arc-trust.org](http://www.arc-trust.org)).



© John Baker (ARC)  
Hatching grass snakes



© Paul Edgar

Buffer strip

## Management objectives

Management should maintain:

- features such as banks and hedgerows that have a warm and sunny aspect
- a diverse vegetation structure
- continuity of sufficient and appropriate habitat
- connectivity of areas used by reptiles
- features for breeding/egg-laying where appropriate
- hibernation sites

and avoid:

- activities that damage vegetation structure
- activities that damage areas used by reptiles, especially hibernation sites
- activities that can cause direct killing or injuring of animals or significant disturbance.

The Environmental Information Map included in your Environmental Stewardship application pack will show any features of particular historic, landscape or wildlife interest on your farm. As part of your application, you will have to identify and record the environmental features on your farm (the Farm Environment Record or FER). Together the Environmental Information Map and FER will help you select and locate options to protect and manage these environmental features. You must ensure that you do not locate any options where they would be detrimental to an environmental feature. For more information on Environmental Stewardship see [www.naturalengland.org.uk/ourwork/farming/funding/es/default.aspx](http://www.naturalengland.org.uk/ourwork/farming/funding/es/default.aspx).

## Grass snake egg-laying sites

The grass snake relies on the heat of decomposing organic material to incubate its eggs. Formerly, commonplace farmland features, such as hayricks and manure heaps provided ideal egg-laying sites. Although such features are not stewardship options, creating egg-laying heaps, using manure and/or cut vegetation, is one of the most effective ways of helping this species. Refer to the *Reptile Habitat Management Handbook* for details.



© Paul Edgar

Compost heap



### Buffer strips

Reptile habitat can be created within buffers on the southern side of hedgerows or woodland, the 6m buffers next to watercourses, or the 10m buffers around ponds.

- 2/4/6 Buffer strips on cultivated/rotational land: EE1-3/OE1-3, HE1-3/ OHE1-3
- 2/4/6 Buffer strips on intensive/organic grassland: EE4-6/OE4-6/ HE4-HE6 or OHE4-6
- Buffering in-field ponds in improved permanent/organic grassland: EE7/OE7, HE7 or OHE7
- Buffering in-field ponds in arable/rotational land: EE8/OE8, HE8 or OHE8

- 6m buffer strips on cultivated/rotational land next to a watercourse: EE9/OE9
  - 6m buffer strips intensive/organic grassland next to a watercourse: EE10/OE10
  - Floristically enhanced grass buffer strips (nonrotational): HE10
  - Enhanced strips for target species on intensive grassland: HE11
  - Hedgerow tree buffer strips on cultivated/rotational land: EC24/OC24/HC24/OHC24
  - Hedgerow tree buffer strips on grassland or organic grassland: EC25/OC25/HC25/OHC25
- Capital work payments are available under HLS



### Historic and landscape features

Grassland taken out of cultivation to protect archaeological features (ED2/OD2) can provide reptile habitat. Designed/engineered water bodies (HD9) and traditional water meadows (HD10/HD11) could provide breeding sites for amphibians, which are the main prey item of grass snakes.

- Take out of cultivation archaeological features currently cultivated/rotational land: ED2/OD2, HD2 or OHD2
- Management of scrub on archaeological features: ED4/OD4/HD4/OHD4
- Management of archaeological features on grassland: ED5/OD5/HD5/OHD5.
- Arable reversion by natural regeneration: HD7
- Maintenance of designed/engineered water bodies: HD9
- Maintenance/restoration of traditional water meadows: HD10/HD11

### Arable

Lizards should benefit from the presence of invertebrate prey living in nectar flower mixture strips and on beetle banks. A bank running east-west will provide a long, south-facing slope which may be used by reptiles if it is contiguous with other occupied habitat. Conservation headlands and other options incorporating low input management of the cultivated crop can help to increase populations of invertebrate prey.

- Wild bird seed mixture: EF2/OF2, HF2/OHF2
- Nectar flower mixture: EF4/OF4, HF4/OH4
- Beetle banks: EF7/OF7, HF7/OHF7

### Trees and woodland

Open areas within woodland and woodland edges can provide useful reptile habitat. Woodland rides and glades that can be maintained under woodland management (HC7) provide opportunities to create reptile habitat within woodland. The south-facing edges of rides running east-west are particularly favourable to reptiles. Allowing woodland to grow out to create a mosaic of scrub and grass over the 6m woodland edge option (EC4) may create ideal reptile habitat on the sunny edges of woodland. The recommended method for creation of wood pasture (HC14) is careful grazing to allow the natural regeneration of trees and shrubs. Provided that open areas are maintained within the tree/shrub/grassland mosaic, this approach can produce favourable habitat for reptiles.

- Maintenance/restoration/creation of woodland: HC7-10
- Management of woodland edges: EC4/OC4, HC4/OHC4
- Woodland livestock exclusion supplement: HC11
- Maintenance of woodland fences: EC3/OC3
- Maintenance/restoration/creation of wood pasture and parkland: HC12/13/14
- Maintenance of high-value traditional orchards: HC18
- Maintenance/restoration/creation of traditional orchards: HC19/HC20/HC21

### Boundary features

Sensitively managed hedgerows and ditches can provide valuable foraging and refuge habitat for reptiles and can create corridors for movement between other suitable habitats. Buffer strips and tussocky grass margins next to hedgerows and ditches will enhance their usefulness, particularly if located on the sunny side. Boundary features (especially stone walls, stone-faced banks and old hedgerows) can be vital for basking and hibernation.

- Hedgerow management on both sides/one side: EB1/EB2 or OB1/OB2
  - Enhanced hedgerow management: EB3/OB3
  - Management of hedgerows of very high environmental value (both/one side): HB11/HB12
  - Stone-faced hedgebank management on both sides/one side: EB4/EB5, UB4/UB5, or UOB4/UOB5
  - Ditch/half ditch management: EB6/EB7 or OB6/OB7
  - Management of ditches of very high environmental value: HB14
  - Combined hedge and ditch management options: EB8-EB10 or OB8-OB10
  - Stone wall protection & maintenance: EB11/OB11/UB11 or UOB11
  - Earth bank management on both sides/one side: EB12/EB13, OB12/OB13, UB12/13 or UOB12/UOB13
  - Hedgerow restoration: UB14 or UOB14
  - Stone-faced hedge bank restoration: UB15 or UOB15
  - Earth bank restoration: UB16 or UOB16
  - Stonewall restoration: UB17 or UOB17
- Capital work payments are available under HLS

### Scrub and rough grassland

Scrub and rough grassland are ideal habitats for the widespread reptile species. Awkward corners can be taken out of management and options can be utilised to help buffer aquatic habitat from agricultural activities. Note that the woodland livestock exclusion (HC11) can be used to supplement HC16 and HC17.

- Maintenance/restoration/creation of successional areas and scrub: HC15/HC16/HC17
- Capital work payments are available under HLS



Target your stewardship options to benefit reptiles – use linear features to create habitat corridors between suitable terrestrial and aquatic habitat



### Grassland

A reduction in fertiliser application can be of direct benefit to invertebrates and lead to an increase in their populations by encouraging plant diversity. Reducing input levels can help protect ponds and watercourses from run-off and erosion.

- Take field corners out of management: EK1/OK1, HK1/OHK1
- Permanent grassland with low/very low inputs: EK2/EK3, OK2/OK3, HK2/HK3, OHK2/OHK3

- Management of rush pasture: EK4/OK4, HK4/OHK4
- Maintenance/restoration/creation of species rich, semi-natural grassland: HK6/7/8
- Maintenance/restoration/creation grassland for target species: HK15/16/17
- Cattle grazing supplement: HR1
- Native breeds at risk grazing supplement: HR2



### Wetlands

Wetlands can provide valuable habitat for the grass snake which feeds primarily on amphibians. Ponds should be created and managed to support amphibian populations. If next to drier rough grassland it can also be very good habitat for common lizard, slow-worm and adder.

- Maintenance/restoration/creation of fen: HQ6/HQ7/HQ8
- Maintenance/restoration/creation of lowland raised bog
- Wetland cutting/grazing supplements: HQ11/HQ12

### Ponds

Buffering and fencing may help to protect water quality from damage by agricultural practices or poaching.

- Pond creation: PC/PCP
  - Pond restoration: PR/PRP
  - Maintenance of ponds of high wildlife value(less/more than 100m2): HQ1/HQ2
- Capital work payments are available under HLS



### Take field corners out of management (arable and grassland)

Taking an awkward patch of land out of production and allowing it to develop as tussocky grass and scrub could provide valuable reptile habitat. The aspect and location of other habitat features will also influence the likely benefits for reptile populations.

- Management of field corners: EF1/OF1, HF1/OHF1
- Take field corners out of management: EK1/OK1, HK1/OHK1

### The uplands/within Severely Disadvantaged Areas (SDAs)

Moorland is important habitat for viviparous lizards and adders. It is therefore essential that stocking levels do not lead to overgrazing and/or damage to vegetation structure. Any management through burning should ensure that sufficient unburned areas are left. Fire can not only kill reptiles directly but also destroys prey populations and removes shelter.

- Maintenance/restoration/creation of moorland: HL9/HL10/HL11
  - Maintenance/restoration of rough grazing for birds: HL7/8
  - Supplement for management of heather, gorse and grass by burning, cutting or swiping: HL12
  - Moorland re-wetting supplement: HL13
  - Seasonal livestock exclusion supplement: HL15
- Options specific to the grassland and moorland SDAs:
- Take field corners out of management in SDAs: EL1/OL1, HL1/OHL1
  - Permanent grassland with low/very low inputs: EL2/EL3, OL2/OL3, HL2/OHL2, HL3/OHL3
  - Management of rush pastures: EL4/OL4, HL4/OHL4
  - Enclosed rough grazing: EL5/OL5, HL5/OHL5
  - Unenclosed moorland rough grazing: EL6/OL6, HL6/OHL6
  - Management of enclosed rough grazing for birds: UL22, UOL22, UHL22 or UOHL22
  - Management of upland grassland for birds: UL23, UOL23, UHL23 or UOHL23

### Reedbeds

Some reptiles will use reedbeds, marshes and other wetland habitat, particularly if adjacent to drier areas. Patches of cut and stacked vegetation can be used for egg-laying by grass snakes.

- Maintenance/restoration/creation of reedbeds: HQ3-5

### Wet grassland and rush pastures

Lowland raised bog is used by viviparous lizards and adders. Wet grassland and rush meadows can also be used by reptiles, particularly where located close to, or forming a mosaic with, drier habitat, where they can bask or hibernate. Maintenance of fen in an open condition, with a few trees and shrubs, should provide habitat favourable to reptiles.

- Maintenance/restoration/creation of wet grassland for breeding waders: HK9/11/13
- Maintenance/restoration/creation of wet grassland for wintering waders and wildfowl: HK10/12/14
- Raised water levels supplement: HK19
- Inundation grassland supplement: HQ13
- Management of rush pastures: EK4/OK4, HK4/OHK4
- Maintenance/restoration/creation fen: HQ6-8
- Maintenance/restoration of lowland raised bog: HQ9/10
- Wetland cutting supplement: HQ11
- Wetland grazing supplement: HQ12

■ = Primary options for reptiles.  
 ■ = Secondary options beneficial for reptiles, but would need additional justification for their use.  
 ■ = Additional options

Option codes provided above relate to different levels of the scheme:  
 - Entry Level Stewardship (ELS) options begin with an E  
 - Organic Entry Level Stewardship (OELS) begin with O  
 - Uplands entry level begin with U  
 - Organic uplands entry level begin with UO  
 - Higher level Stewardship (HLS) options on conventional farms begin with H  
 - Higher level stewardship options on organic farms begin with OH  
 - Uplands higher level begin with UH  
 - Organic uplands higher level begin with UOH

## Lowland heathland

Lowland heath is a key reptile habitat, the only habitat supporting all six native reptile species. Cutting is normally the preferred management technique to controlled burning or grazing. Management should take place on a rotational basis to create a small scale mosaic of heather and dwarf shrubs of differing ages, rather than large areas of uniformly aged plants. Patches of bare sand are essential to the sand lizard (note limited range of this species). These can be integrated into firebreak management. During first phase restoration of forestry to lowland heathland, brash, stumps and accumulated organic material should be used to create south-facing banks which provide useful habitat features for reptiles. (NB: hibernation sites should not be covered with this material.)

Care should be taken if taking the bracken control supplement (HR5), because, although bracken should not be allowed to dominate a site, it is often an important habitat component for reptiles, providing cover for hibernation sites and warm, dry areas for basking in the early part of the year.

- *Maintenance/restoration of lowland heathland:* HO1/HO2
  - *Restoration of forestry areas to lowland heathland:* HO3
  - *Creation of lowland heathland from arable or improved grassland:* HO4
  - *Creation of lowland heathland on worked mineral sites:* HO5
- Capital work payments are available under HLS

## Sand dune

Sand dunes can provide habitat for viviparous lizard, adder, slow-worm and grass snake and, in specific areas, the sand lizard.

- *Maintenance/restoration of sand dunes:* HP1/HP2
- *Creation of coastal vegetated shingle and sand dunes on arable land/grassland:* HP3/HP4

## Resource and soil protection

Arable reversion, buffer strips and in-field grass areas may provide habitat suitable for reptiles.

- *In-field grass areas to prevent erosion or runoff:* EJ5/OJ5/HJ5/OHJ5
- *12m buffer strips for watercourses on cultivated/rotational land:* EJ9/OJ9/HJ9/OJ9
- *Maintenance of watercourse fencing:* EJ11, OJ11, HJ11 or OHJ11
- *Winter livestock removal next to streams, rivers and lakes:* UJ12, UOJ12, UHJ12 or UOHJ12

- *Arable reversion to grassland with low fertiliser input/unfertilised grassland to prevent erosion or runoff:* HJ3/HJ4
- *Preventing erosion or run-off from intensively managed, improved grassland:* HJ6
- *Seasonal livestock removal, on grassland with no input restriction:* HJ7
- *Nil fertiliser supplement:* HJ8

### For further details and advice on how to apply for Environmental Stewardship contact:

Natural England: Telephone 0845 600 3078 [www.naturalengland.org.uk](http://www.naturalengland.org.uk)  
Regional contact details can also be found at:  
[www.naturalengland.org.uk/ourwork/farming/funding/es/contacts.aspx](http://www.naturalengland.org.uk/ourwork/farming/funding/es/contacts.aspx)

### For help with your application and further advice contact:

FWAG: To find your local office telephone 02476 696 699 or visit [www.fwag.org.uk](http://www.fwag.org.uk)

The Wildlife Trusts: To find your local office telephone 01636 677711 or visit [www.wildlifetrusts.org](http://www.wildlifetrusts.org)

### For further information on reptiles contact:

Amphibian and Reptile Conservation  
655A Christchurch Road, Boscombe, Bournemouth, Dorset BH1 4AP  
Telephone 01202 391319 [www.arc-trust.org](http://www.arc-trust.org)

Written by Dorothy Wright and John Baker

#### Key contributors:

John Buckley, Paul Edgar, Jim Foster, Tony Gent, Chris Monk, Nick Moulton, John Wilkinson and Jo Wilson.

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### Useful publications:

Edgar, P., Foster, J., and Baker, J. (2010).  
Reptile Habitat Management Handbook\*  
Amphibian and Reptile Conservation, Bournemouth.  
[www.arc-trust.org/resources/RHMH.php](http://www.arc-trust.org/resources/RHMH.php)

Inns, H. (2009).

Britain's Reptiles and Amphibians\*  
WILDGuides, Old Basing.

\*Publications are available from Amphibian and Reptile Conservation.

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