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Useful Publications

Arnold, E.N. and Ovenden, D.W. (2002)
A Field Guide to the Reptiles and Amphibians of Europe
Harper Collins

Beebee, T.J.C. and Denton, J.S. (1996)
The Natterjack Toad Conservation Handbook
English Nature**

Beebee, T.J.C. (1983)
The Natterjack Toad
Oxford University Press

Beebee, T.J.C. (1985)
Frogs and Toads
Whittet Books

Beebee, T.J.C. and Griffiths R.A. (2000)
**Amphibians and Reptiles:
Natural History of the British Herpetofauna**
The New Naturalists Series, Harper Collins

Denton, J.S. and Beebee, T.J.C. (1992)
**An evaluation of survey methods for studying natterjack toads
(Bufo calamita) outside the breeding season** *Amphibia-Reptilia* 13, 365-374

Baker, J., Beebee, T., Buckley, J., Gent, T., and Orchard, D. (2011).
Amphibian Habitat Management Handbook.
*Amphibian and Reptile Conservation, Bournemouth.***

Beebee, T.J.C. and Buckley, J. (2001)
**Natterjack Toad (Bufo calamita)
Site Register for the UK 1970 – 1999 inclusive**
Unpublished confidential report (updated annually)

The Herpetological Conservation Trust (1999)
**The Conservation of Natterjack Toads:
A Brief Guide to Habitat Management**
*The Herpetological Conservation Trust***

** Available free from
Amphibian and Reptile Conservation

Natterjack Toads

Natterjack Toads and Environmental Stewardship Options



**amphibian and reptile
conservation** 

**For further details on how to apply for
Environmental Stewardship contact:**

Natural England: Telephone **0845 600 3078**
www.naturalengland.org.uk

For further information about natterjack toads:

Amphibian and Reptile Conservation
655A Christchurch Road
Boscombe
Bournemouth
BH1 4AP

01202 391319

www.arc-trust.org

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Why do natterjack toads matter?

Natterjacks are special. They live in some of the most interesting places in Britain and the males have the loudest call of our native amphibians. They run well, and are adapted to hunting prey after dusk in habitats with bare ground and short vegetation - sand dunes, heathlands, even the upper parts of salt marshes.

Sadly, over the last century, this specialist amphibian has disappeared from more than 75% of its former haunts and is now found only in about 50 (mostly coastal) places throughout England, SW Scotland and north Wales.

The natterjack is a European Protected Species strictly protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation (Natural Habitats & c.) Regulations 1994 (as amended).

It is a priority species in the UK's Biodiversity Action Plan, which highlights both the threats to the species and the conservation measures needed to address them.

What do natterjacks really need and why?

Natterjacks, like all amphibians, need suitable water and land habitat to survive. The essential requirements are quite precise.



Maintaining a place for natterjacks on your land

Natterjacks on farmland

Natterjacks live not only on sand dunes but also on upper saltmarshes, grassland, heathland and sites with similar conditions. They disperse onto adjacent farmland, breeding there so long as the habitat is suitable.

Natterjacks benefit from common farming practices e.g. grazing dunes and merse (coastal marsh). Other activities inevitably kill individual toads or damage their day or winter hiding places so it's necessary to minimise risk. As long as there's no large-scale loss of suitable land habitat and breeding ponds remain in good condition, occasional small-scale losses can be borne by the population.

How do you know if there are natterjack toads on your land?

The natterjack grows to a length of about six centimetres. It has a yellow stripe down the centre of the back and its eyes have yellow irises. Natterjacks emerge from their burrows after dark to run about catching food. During the breeding season (April to June) the reeling call of the males can be heard hundreds of metres away.

For help with identification, consult www.herpconstrust.org.uk. To obtain a free copy of the leaflet 'British Amphibians and Reptiles' contact The HCT (see back page).

What if you don't have natterjack toads on your land?

Even if you have no natterjacks on your land, you may be able to encourage them to move in from neighbouring areas by providing good ponds and terrestrial habitat. You will also help a range of other wildlife.

It might be appropriate to undertake a translocation programme to establish natterjacks at a new site within their natural range.

Such projects must meet a number of criteria and need a special licence.

Natterjacks and agri-environment schemes

On offer are agri-environment schemes which enable farmers/landowners to undertake management work, often to benefit a range of species.

Both Entry and Higher Level Stewardship Schemes include options valuable to natterjacks, but they are likely to be greater under HLS.

The Entry Level Stewardship is open to all farmers and provides area payment to them to farm in an environmentally sensitive way. Payments are currently £30/ha* for non-organic and £60/ha* for organic farms. ELS provides the choice of over 50 point-scoring environmental management options. These basic level options should not result in extra cost to the farmer as any modifications to management practices are minor. To receive payment, conventional farms need to score 30 points/ha and organic ones, 60/ha.

* Payments are subject to change as the scheme develops.

Higher Level Stewardship is targeted at land of particular environmental value. As it provides for greater enhancement, payments are correspondingly higher. Capital payments are available to restore habitats and landscape features selected from a range of management options on offer. Payments are then made to maintain them, based on area.

The HLS options most likely to benefit natterjacks include the following:

- Maintenance, restoration and creation of ponds.
- Maintenance and restoration of successional areas and scrub.
- Maintenance, restoration and creation of wet grassland.
- Maintenance, restoration and creation of semi-improved or rough grassland.
- Maintenance, restoration and creation of sand dunes and vegetated gravel.
- Maintenance, restoration and creation of lowland heath.

See overleaf for more details about ES options.

If you are thinking about submitting an HLS application seek further advice from Natural England or Farming and Wildlife Advisory Group.

1) The aquatic habitat - unshaded, ephemeral ponds with shallow, gradually shelving margins and few predators or competitors.

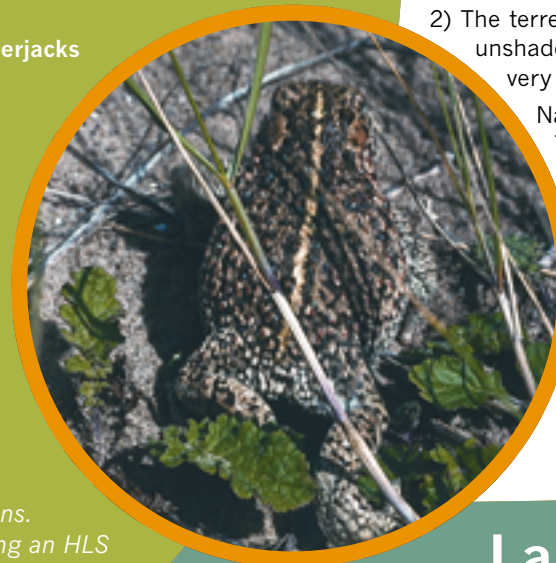
Natterjacks mostly use ephemeral ponds that dry up in late summer and refill over winter. The water has to be fresh with a pH around neutral. Tadpoles develop swiftly in shallow pools that warm quickly, but are weather-dependent and unpredictable breeding sites. Inevitably natterjack reproduction takes on "boom or bust" characteristics - spectacular successes in some years, partial or total failures in others.

Other amphibians can cause problems. Natterjack tadpoles cannot survive in competition with those of the common toad and common frog where these species dominate the breeding ponds. Great crested newts eat natterjack tadpoles. But most vertebrates leave them alone because of their distasteful skin.

Invertebrate predators are a hazard. Dragonfly and damselfly nymphs, dytiscid water beetle (larvae and adults) and water-boatmen all prey on the relatively small natterjack tadpoles. Fortunately, ephemeral ponds have far fewer tadpole predators than permanent ones, and female natterjacks lay thousands of eggs, so colonies have a great capacity to recover once key habitat features are restored.

2) The terrestrial habitat - extensive areas of open, unshaded, unvegetated ground or ground with very short vegetation (i.e. no more than 1cm).

Natterjacks actively hunt invertebrates. They therefore need open ground to see, pursue and capture prey. To escape dryness and extremes of temperature, (midsummer sun or sub zero winter conditions), they burrow into a suitable substrate, (usually sand but sometimes slag or rock piles), and can thrive where other amphibians find it difficult. They hibernate in burrows where the ground does not flood over winter.



Pond Management

Pond restoration

Ensure ponds contain little vegetation and are free from scrub around the margins. In the autumn cut down short vegetation in the pond basin by mowing or flailing, then gather up and remove the pieces. If necessary, restore the original depth of the pond by removing a few centimetres of sand/soil from the pond basin. Thereafter, grazing is the best long-term means of maintaining short vegetation but, failing that, repeated annual cutting can be undertaken.

If ponds have been lost through drainage, reinstate them - simply disrupt the drainage system by blocking the surface or field drain.

Resist the temptation to deepen ponds after an unsuccessful breeding season, unless there is good reason to believe the water table is experiencing a long-term downward trend.

Pond creation

First identify potential natterjack breeding areas on the land, then select appropriate management options as part of the scheme for the whole farm. You can use different ways to enhance breeding: wetting up fields, modifying linear water features or making scrapes.

Natterjack ponds are often called scrapes as this best describes how to make them with a machine. Using knowledge of water table behaviour at the site, create ponds with gently sloping sides, down to a maximum water depth of 50 - 70cm that will dry out in late summer in an average year. This may require trial and error i.e. by making the scrape then slightly deepening or infilling it in a subsequent year. A natterjack colony will ideally have a choice of ponds of differing depths so at least one or two will be successful in any year.

Minimise risk of harming this protected species by planning and choosing the best time of year for the work. The extent of good terrestrial habitat should then be increased as breeding success improves.

Land Management

Restoration management

When habitat is in poor condition use various management techniques to achieve the desired result, e.g. mowing and collecting, foliar spraying, weed wiping, chain sawing, grubbing out vegetation with machinery.

Where large areas of scrub encroachment have developed there is little alternative to manual or mechanical clearance as a first step towards recreating open habitat. Mechanical methods damage the habitat less than expected and have been used very successfully at sites throughout the country. The job consists of cutting down/grubbing out scrub and taking it off site (or moving it to a fire and burning all material). Then you need to bury the ashes, along with the humus-rich layer developed under the scrub, in order to expose bare ground and to prevent weed growth.

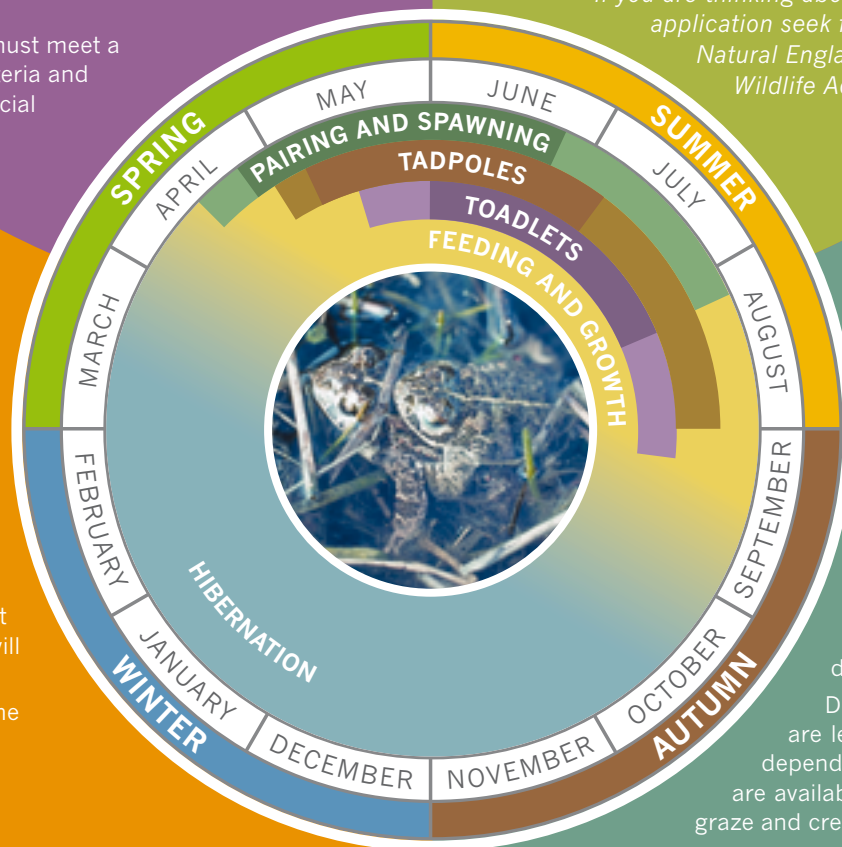
When manual methods are used (chainsaws or bow saws) treat stumps left in the ground with a suitable herbicide to prevent regrowth. Deal with small saplings by foliar spraying, it may be necessary to treat common weeds that appear e.g. thistle and nettle.

Banks with a sunny aspect are ideal places for natterjacks to burrow and shelter during the day. During the winter field boundaries often provide areas of slightly higher ground, where natterjacks can hibernate without risk of drowning.

Maintenance management

In order to maintain terrestrial habitat you could repeat restoration management techniques annually, but this can be costly. Far better, and potentially cheaper, is to establish a suitable grazing regime using domestic stock (sheep, cattle and ponies/horses) and wild animals (usually rabbits).

Domestic livestock are key to the maintenance of natterjack sites. Cattle require less attention than sheep, are less prone to interference by dogs, break up turf in places and create bare ground. However, much will depend on how sites have traditionally been grazed, what grazing is currently in place and what further animals are available. The stocking density, tailored to the individual site, usually needs to be high. Encourage rabbits to graze and create warrens in new areas by providing corridors of shorter vegetation.



Natterjacks should be locally abundant if suitable land is well-managed

Pond Management

The first priority should usually be to increase natterjack breeding success by maximising the number of suitable breeding ponds. The aim of this management is to provide:

unshaded, ephemeral ponds with shallow, gradually shelving margins and few predators or competitors.

Environmental Stewardship Options to help conserve natterjacks

Scrapes

SCR Creation of temporary ponds - first 100m²

SCP Creation of temporary ponds - over 100m²

HQ1 Maintenance of ponds of high wildlife value (less than 100 m²)

HQ2 Maintenance of ponds of high wildlife value (more than 100 m²)

WPS Construction of water penning structure

WGC Creation of gutters

Wet grassland options

HK9 Maintenance of wet grassland for breeding waders

HK10 Maintenance of wet grassland for wintering waders and wildfowl

HK11 Restoration of wet grassland for breeding waders

HK12 Restoration of wet grassland for wintering waders and wildfowl

HK13 Creation of wet grassland for breeding waders

HK14 Creation of wet grassland for wintering waders and wildfowl

HQ12 Wetland grazing supplement

Ditches

EB6/OB6 Ditch Management

EB7/OB7 Half Ditch Management

DR Ditch, dyke and rhine restoration

WDC Creation of ditches (rhines and dykes)

Scrub

There are three levels of capital work payments for scrub removal according to the density of the scrub. There are also options for the control of bracken and invasive plants such as rhododendron.

SS Scrub management - base payment

SA Scrub management <25% cover

SB Scrub management 25-75% cover

SC Scrub management >75% cover

Bracken

BMB Mechanical bracken control - base payment

BMA Mechanical bracken control - area payment

BCB Chemical bracken control - base payment

BCA Chemical bracken control - area payment



In fixed areas of dunes, or low-lying places where no pools exist, it is easy to create scrapes by machine or hand. Pools may need to be fenced to prevent over-use by cattle.



Cutting and collecting vegetation creates an ideal sward height for natterjacks that can be maintained by grazing.



Banks, particularly stone-faced, provide areas of higher ground where natterjacks can burrow and shelter throughout the year.



Slacks form naturally within blow-outs in mobile dune systems and are perfect for natterjack breeding.



Stone walls provide day-time places for natterjacks to hide, particularly those with a sunny aspect on dry ground.



Rabbits create areas of short turf where natterjacks like to hunt and burrow.



It is easy to reinstate an upper salt marsh (merse) pool by blocking the drainage ditch. It can then hold water long enough for tadpoles to become toadlets.



Extensive grazing keeps dunes in good condition for specialist plants and animals.



The removal of sand near good terrestrial habitat creates a large shallow pool, similar to a blowouts pool.



Monitoring the effects of management on the natterjack population - a meeting of natterjack experts at a well-managed site.

Stone walls

WRD Stone wall supplement - difficult sites

WR Stone Wall Restoration using either WRS Stone from holding

WRQ Stone from quarry

OB11/EB11 Stone wall protection and maintenance

OB12/EB12 Earth bank management on both sides

OB13/EB13 Earth bank management on one side

Stone-faced hedgebanks

EB4/OB4 Stone-faced hedgebank management on both sides

EB5/OB5 Stone-faced hedgebank on one side

EC Creation of new earth banks

BR Stone-faced hedgebank repair

BS Stone-faced hedgebank restoration

ER Earth bank restoration

Sand Dune And Vegetated Gravel Systems

HP1 Maintenance of sand dunes

HP2 Restoration of sand dunes

HP3 Creation of coastal vegetated shingle and sand dunes on arable

HP4 Creation of coastal vegetated shingle and sand dunes on grassland

Intertidal And Coastal Options

HP5 Maintenance of coastal saltmarsh

HP6 Restoration of coastal saltmarsh

HP7 Creation of inter-tidal and saline habitat on arable

HP8 Creation of inter-tidal and saline habitat on grassland

HP9 Creation of inter-tidal and saline habitats by non-intervention

HP10 Supplement for extensive grazing on saltmarsh

Lowland Heathland

HL12 Supplement for management of heather, gorse and grass by burning, cutting or swiping

HO1 Maintenance of lowland heathland

HO2 Restoration of lowland heathland

HO3 Restoration of forestry areas to lowland heathland

HO4 Creation of lowland heathland from arable or improved grassland

HO5 Creation of lowland heathland on worked mineral sites

Grassland

Various grassland options would benefit natterjacks by encouraging insects and other invertebrate prey populations, providing that grazing levels are high enough.

HK4 Management of rush pastures

HK15 Maintenance of grassland for target features

HK16 Restoration of grassland for target features

HK17 Creation of grassland for target features

EK2/OK2/HK2 Permanent Grassland with Low Inputs

EK3/OK3/HK3 Permanent Grassland with Very Low Inputs

EK4/OK4 Management of Rush Pastures

EK5/OK5 Mixed Stocking

Appropriate management of terrestrial habitat not only keeps it in a good state for natterjacks but also makes it less suitable for competitors and predators, e.g. common toad and great crested newt. The aim of this management is to create:

extensive areas of open, unshaded, unvegetated ground or ground with very short vegetation (i.e. no more than 1cm).

Land Management



Large scale removal of sea buckthorn and willow is just the first stage in restoring dune habitat for natterjacks. ▲