



## Action

### Policy and Legislation

Ensure the requirements of natterjack toad conservation are taken into account in all relevant initiatives involving the Solway.

### Site and Species Safeguard and Management

Initiate management for the Southernness non-SSSI pools.

Identify sites for the creation of new pools throughout range and begin their creation.

Prevent in-filling, drainage or other damage to all known breeding pools.

Prevent the unnecessary removal or destruction of driftwood, tidal debris and other potential refugia at all sites.

Secure management for natterjack toad at all of the newly discovered inland sites.

Maintain existing breeding pools by periodic clearance and other management, and maintain stockproof fencing at sites where necessary.

Encourage the maintenance of traditional grazing on the merse at Caerlaverock and Priestside.

Carry out maintenance of fencing and clearance of ponds at Caerlaverock NNR.

Clear of scrub and encroaching vegetation form pools at Gillfoot Bay and Royal Ordnance Powfoot by 2000.

Continue creation of priority pools in existing colonies.

Prepare and implement site management plans for all known sites.

Encourage remedial action on Southernness pools where practicable.

If translocation is feasible, introduce spawn/tadpoles to new Mersehead site.

### Advisory

Inform and advise land managers on measures to conserve natterjack toads.

Inform, or remind where necessary, land managers/Local Planning Authorities etc. of occurrence of natterjacks and their enhanced legal protection.

### Research and Monitoring

Identify populations trends at known sites.

Search likely inland areas for unrecorded colonies, following the methodology used to locate new sites found in 1998.

Contribute records to natterjack Site Register and to annual monitoring scheme.

Encourage accurate site recording and contribute information to the preparation of site maps.

### Communication and Publicity

Provide on-site interpretation at three natterjack toad sites.

Provide advise on site-interpretation and information.

### Plan Monitoring

Monitor and review this plan

Action	Potential Deliverers		1999	2000	2001	2002	2005	2010	Meets Obj. No.
	Lead	Partners							
Policy and Legislation Ensure the requirements of natterjack toad conservation are taken into account in all relevant initiatives involving the Solway.	SNH	DGC, RSPB, HCT, BHS, WWT	.	.	.	.	.	.	1,2
Site and Species Safeguard and Management Initiate management for the Southernness non-SSSI pools.	SNH			.					2,4
Identify sites for the creation of new pools throughout range and begin their creation.	All								2,4
Prevent in-filling, drainage or other damage to all known breeding pools.	All		.						1,3
Prevent the unnecessary removal or destruction of driftwood, tidal debris and other potential refugia at all sites.	All		.	.	.	.	.	.	1,3
Secure management for natterjack toad at all of the newly discovered inland sites.			.	.	.	.	.	.	4
Maintain existing breeding pools by periodic clearance and other management, and maintain stockproof fencing at sites where necessary.	All				.				1,2
Encourage the maintenance of traditional grazing on the merse at Caerlaverock and Priestside.	SNH	WWT		.					4
Carry out maintenance of fencing and clearance of ponds at Caerlaverock NNR.	SNH	WWT	.						4
Clear of scrub and encroaching vegetation form pools at Gillfoot Bay and Royal Ordnance Powfoot by 2000.	SNH	landowners				.			1, 4
Continue creation of priority pools in existing colonies.		All		.					2
Prepare and implement site management plans for all known sites.	SNH	SNH, RSPB, WWT		.					4
Encourage remedial action on Southernness pools where practicable.	SNH		.						2,4
If translocation is feasible, introduce spawn/tadpoles to new Mersehead site.	SNH	RSPB	.	.	.				4
Advisory Inform and advise land managers on measures to conserve natterjack toads.	All		.	.	.	.	.	.	3
Inform, or remind where necessary, land managers/Local Planning Authorities etc. of occurrence of natterjacks and their enhanced legal protection.	All	landowners	.	.	.	.	.	.	3
Research and Monitoring Identify populations trends at known sites.	SNH					.	.		1,2
Search likely inland areas for unrecorded colonies, following the methodology used to locate new sites found in 1998.		HCT, BHS, All							
Contribute records to natterjack Site Register and to annual monitoring scheme.	All	All	.	.	.	.	.	.	1,2,3,4
Encourage accurate site recording and contribute information to the preparation of site maps.	SNH	All	.	.	.	.	.	.	
Communication and Publicity Provide on-site interpretation at three natterjack toad sites.	SNH	landowners	.						3
Provide advise on site-interpretation and information.		All	.						3
Plan Monitoring Monitor and review this plan	LBAP Steering Group					.	.		All

# NATTERJACK TOAD



## Species Profile

### Common Name:

Natterjack Toad

### Scientific Name:

*Bufo calamita*

### UK Biodiversity Status:

Priority Species

### UK Lead Partner:

Herpetological Conservation Trust

### Dumfries and Galloway Status:

Local Priority Species

### Relevant Habitat Action Plans:

Merse, Sand Dune, Fen, Carr, Marsh, Swamp and Reedbed, Standing Open Water, Farmland

### Statutory Protection:

Special protection under Schedule 5 of the Wildlife and Countryside Act 1981. Annex IVa of the EC Habitats Directive, Appendix II of the Bern Convention



## Dumfries and Galloway LOCAL SPECIES ACTION PLAN

### Objectives

#### MAIN OBJECTIVES

##### Objective 1

Ensure no further loss, decline or attrition of existing colonies in Dumfries and Galloway.

##### Targets:

No net loss of colonies during the lifetime of this plan. Achieve stable numbers at all sites by 2005.

##### Objective 2

Consolidate and expand existing colonies within a presumed natural range.

##### Targets:

Expand numbers to the low hundreds at Southernness and Royal Ordnance Powfoot SSSI, the high hundreds at Priestside and in excess of 1000 animals at Caerlaverock by 2005. Establish new populations at Mersehead and Southernness Golf Course by 2001. Establish management at newly discovered sites by 2001.

#### WORK OBJECTIVES

##### Objective 3

Inform and advise all appropriate land managers on measures to conserve natterjack toads.

##### Target:

Achieve and maintain by management optimum condition breeding habitat on all known and potential sites by 2005.

##### Objective 4

Undertake appropriate habitat management and creation to encourage colonisation of toads in suitable areas.

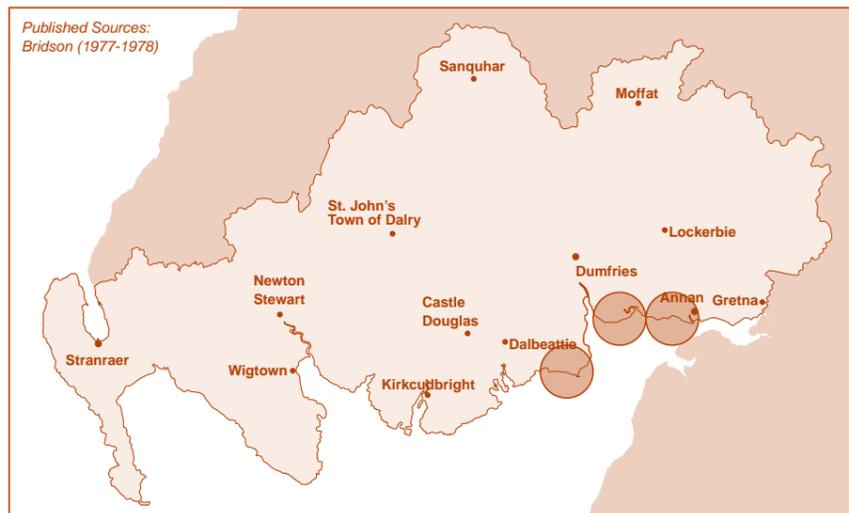
##### Target:

Obtain agreement for and create new ponds at priority areas by 2000. (including two breeding pools at Powfoot Village).

### Current Status

The natterjack toad is found only in western Europe, with strongholds in Spain, Portugal and north and west France. The range also extends north and east into Denmark, Switzerland, Germany and Poland and outlying colonies occur in southern Sweden and south-west Ireland.

In the UK the natterjack toad is considered to be vulnerable and is found in just three main areas: heathlands in south-east England, sand dunes and heathlands from East Anglia to Lincolnshire, and along the coast of the Irish Sea from north Wales to the north Solway coast. Formerly known from ninety one 10x10 km grid squares in the UK, the species is now found in only thirty two. British colonies of natterjack toads represent the north-western limit of the species' distribution. Colonies on the north Solway are estimated to account for between 11% and 23% of the total UK population. Numbers on the north shore are estimated as between 15,000 and 20,000 individuals. Recent studies suggest that the population of natterjack toads in Dumfries and Galloway extends to at least five inland sites and that the toads may be more numerous than present estimates suggest.



The known Scottish colonies are:

**Caerlaverock** - The northernmost large colony in Britain which occupies approximately seventeen 1x1 km grid squares and a linear stretch of merse of approximately eight kilometres. Estimated to contain a population of 1,000 animals, numbers were boosted by creation of breeding pools on the National Nature Reserve and by the development of borrow scrapes on the Wildfowl and Wetlands Trust's Eastpark refuge. The population is centred upon the grazed merse but has spread on to Eastpark and up the sides of Lochar Water as far as Newmains Farm.

**Priestside** - This colony occupies approximately fifteen 1x1 km grid squares. Distribution is contiguous with Caerlaverock, being separated from it only by the channel of the Lochar Water. It also occupies the linear stretch of merse from Nether Locharwoods to Powfoot village. The colony is estimated to be several hundred animals.

**Royal Ordnance Powfoot** - Located to the east of Powfoot, occupying part of the Royal Ordnance Powfoot Site of Special Scientific Interest this colony occupies approximately two 1x1 km grid squares and is notable for being based on heathland, which is unique amongst Irish Sea populations. The colony is bounded by steep sandy cliffs which are reportedly used for hibernation. Toads have been found along the shore, midway between this colony and the west end of the Priestside colony indicating that exchange of animals may occur between the two groups.

**Southernness** - This was the first colony to be described in Scotland and is also the smallest, most isolated and vulnerable of the Solway colonies. All the breeding pools are now within a single 1x1 km grid square, although animals will range beyond this area. The colony is bounded inland by a large caravan park and inhabits coastal marsh and a small sandy ridge towards the sea. The colony now occupies less than 20% of its original range recorded in 1847. Suitable habitat for expansion exists on historical sites north of Southernness, on the golf course to the west of Southernness, and at Mershead, some 4.5 km away from the current sites.

**Inland colonies near Cummertrees** - Five inland colonies were discovered by the British Herpetological Society in 1998. It is possible that there are more inland colonies.

## Ecology and Management

Good natterjack toad habitat contains areas of closely grazed vegetation, bare earth or sand with suitable breeding pools. Sites for hibernation or daytime refugia are also very important. These are usually areas of sandy soil in which toads can burrow, although piles of rubble or remains of dykes or sea walls can be used. Natterjack toads have also been found to refuge in driftwood, sheets of metal and rocks. The toads forage in short vegetation or bare earth in contrast to the taller/rank vegetation and cooler, moist micro-climate favoured by the common toad. This foraging habitat may be the result of natural processes, such as on mobile frontal sand dunes, or may be created and maintained by grazing by domestic livestock or by wild herbivores, such as rabbits. The latter is particularly important on merse and heathland sites. Population densities range from 6 to 44 toads per hectare and home range size from less than 50 square metres to 1000 square metres

Shallow, ephemeral pools of neutral pH are used for breeding. These pools warm up quickly so that metamorphosis of spawn into tadpoles is rapid. This warming also causes seasonal desiccation, which reduces fish and invertebrate predation of spawn

and tadpoles. Tidal inundation performs a similar function on salt marshes. Man made pools are also becoming increasingly common as breeding pools. A succession of dry summers may adversely affect colonisation of some sites, and may result in the loss of smaller colonies. This is countered to some degree by the natterjack's ability to produce significant amounts of spawn to enhance recruitment into existing and new populations.

The natterjack breeding season is relatively extended compared to the "explosive" breeding period of common toads, which typically breed much earlier. Natterjack toads require higher temperatures to initiate breeding activity (water temperatures of 14°C, night time air temperatures greater than 6°C). Males gather and call at suitable pool sides which are visited at irregular periods by females. Although females can spawn twice a year, it is not known how frequently or if this occurs on the Solway.

The loud calling of natterjacks by breeding pools at dawn and dusk is a distinctive feature of their activity. This can aid the location of breeding pools. Spawn is usually laid in the shallow open margins of a pool or can be entwined with the water plants. Spawn typically hatches after 6-7 days and tadpoles metamorphose from 28-70 days thereafter. Toadlets are typically 1 cm in length and probably take up to three years to become sexually mature. Growth rates are density dependent with toads growing more slowly in higher density colonies. Large adult toads may reach up to 7.5 cm in length.

## Biodiversity Context

The UK Action Plan for Natterjack toad has the following objectives:

- Sustain all existing populations and, where appropriate, restore each population to its size in the 1970.
- Expand the number of populations within their former range by carrying out at least five further translocations by 2005.

## Current Factors Causing Loss or Decline

Major threats include loss of habitat due to colonisation of scrub or more usually through the abandonment of traditional grazing practice. Modification of habitat by agricultural improvement has also threatened colonies. Recreational development of some coastal sites has been responsible for losses. In the long term global warming and sea level rise could threaten coastal colonies unless new inland habitat is created simultaneously.

Dumfries and Galloway's colonies have been threatened and damaged by agricultural drainage operations, in-filling of breeding pools and land claim of upper merses. Any modification to the tidal inundation regime on merse colonies, through a Solway barrage or embankment of merse for example, could detrimentally affect colonies. Maintenance of merse grazing is vital but has been abandoned on some stretches.

Southernness is the most threatened Scottish colony because of a combination of factors such as recreation pressure, vegetation change, continued attrition and the colony's small size. Royal Ordnance is the second most threatened site due to its small size and dependence on rabbits for suitable terrestrial habitat. The colony found on Powfoot Beach is in jeopardy from possible increased use of the beach and the traffic on the road above, which the toads cross to feed at night. Despite these threats this colony has enjoyed reasonable success in recent years. Both Priestside and Caerlaverock colonies are relatively stable.

Lack of knowledge about inland sites may be leading to decline in populations, but this is not yet fully understood.

## Opportunities and Current Action

Many natterjack colonies occur on protected areas and have been favoured by positive management for at least two decades. Much of this management has concentrated on the creation, modification and maintenance of suitable breeding pools.

Pool management has been carried out on all the Solway colonies. Some natural pools have been slightly deepened. In dry summers "topping up" of the pools has been undertaken. Translocation of adult common toads and their spawn occurs at

some sites to reduce competition between these and the natterjack toad.

Terrestrial habitat management has included scrub clearance and the re-instatement of grazing. Translocation and re-establishment of natterjack toad colonies at sites where they formerly occurred has been undertaken with habitat management at recipient and existing sites.

The British Herpetological Society have secured long-term management for natterjack toads at two of the five new sites discovered in 1998.

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Sketch by SNH.

