



Great Crested Newt

Triturus cristatus

Species Action Plan

1. Introduction

The great crested newt was listed as a priority UK BAP species and subsequently included in Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

2. Current Status

2.1 Ecology and habitat requirements

The great crested newt is the largest native British newt, reaching up to 17 cm in length. It has a granular skin texture (caused by glands which contain toxins making it unpalatable to predators) and in the terrestrial phase is dark grey, brown or black over most of the body, with a bright yellow/orange and black belly pattern. Adult males have jagged crests running along the body and tail, which are more pronounced in the breeding season and which have a distinctive break in the crest at the base of the tail. Newts require aquatic habitats for breeding. Eggs are laid singly on pond vegetation in spring and larvae develop over summer to emerge in August – October, normally taking 2–4 years to reach maturity. Juveniles spend most of their time on land, and all terrestrial phases may range a considerable distance from breeding sites.

Breeding sites are mainly medium-sized ponds, though ditches and other waterbody types may also be used less frequently. Ponds with ample aquatic vegetation (which is used for egg-laying) seem to be favoured. Great crested newts do not require very high water quality, but are normally found in ponds with a circum-neutral pH. Great crested newts can be found in rural, urban and post-industrial settings, with populations less able to thrive where there are high degrees of fragmentation. Broad habitat type varies greatly, the most frequent being pastoral and arable farmland, woodland, scrub, and grassland. There are also populations in coastal dunes and shingle structures.

The connectivity of the landscape is important, since great crested newts often occur in metapopulations that encompass a cluster of ponds known as a pondscape: these can be defined as continuous habitats where there is a constant movement of species (not just newts) between still water-bodies. This helps ensure the survival of populations even if sub-populations are affected by, for example, pond desiccation or fish introductions. Pondscares, which support large numbers of newts, are the most important great crested newt habitats not only nationally but internationally (Watson, 2001).

2.2 Population and distribution

The great crested newt is widespread throughout much of England and Wales, but occurs only sparsely in south-west England, mid Wales and Scotland. It is absent from Northern Ireland. Wilkinson *et al* (2011) estimates the number of great crested newt 'occupied ponds' in Great Britain at 64,756 with the number of 'breeding ponds' estimated at 48,567. The West Midlands figures for the same population measures are 15,426 and 11,570 respectively.

Many of the largest populations are centred on disused mineral-extraction sites, but lowland farmland forms the majority of great crested newt habitat in the UK. Climate may influence the range edge at the north of its distribution in Scotland, but other ecological or landscape factors such as pond density are probably more important in determining distribution across the main part of its British range.

Many regionally important meta-populations of great crested newt are present in Worcestershire and are distributed throughout the county. Areas of particular importance include the Warndon area of Worcester, Redditch, Guarlford, Hallow, Castlemorton, Hanbury and Crowle. Worcestershire has a variety of pond and lake features, ranging from areas with a noticeably high density of small ponds to historically significant medieval fish pools and moats. From a regional perspective the presence of this unique "pondscape" sets Worcestershire apart from its West Midlands neighbours, with an average pond density in the county of 2.9 per km², rising to between 5-10 per km² in 'core pondscape' areas. This is higher than the estimated density of 2.16 ponds per km² for England (Wilkinson *et al*, 2011).

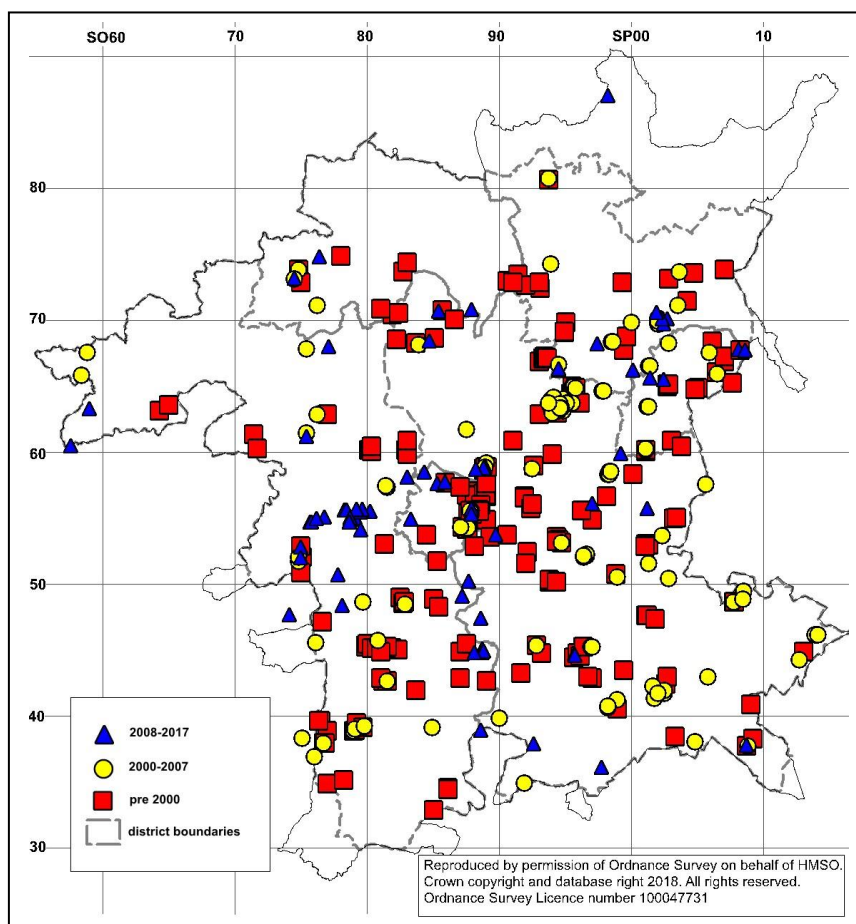


Figure 1. Records of great-crested newt in Worcestershire. Data supplied and map prepared by Worcestershire Biological Records Centre.

2.3 Legislation

The great crested newt is protected under Annexes 2 and 4 of the Habitats Directive, Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and listed in Section 41 of the NERC Act 2006. It is also listed on the IUCN Red List.

2.4 Summary of important sites

Lyppard Grange Ponds SSSI / Special Area of Conservation (SAC) is located within the Warndon Villages development on the outskirts of Worcester. It consists of several former field ponds with surrounding associated terrestrial habitat that now serves as public open space within the housing development. The ponds are eutrophic with well-established submergent vegetation and were designated for supporting one of the largest known breeding colonies of great crested newts in the country.

Over a decade on since the SAC designation the great crested newt population is now much reduced. Contributing factors are thought to be the cumulative pressures of continued housing development, the resultant ecological isolation of the ponds plus the impacts of predation by domestic cats. A substantial population of smooth newt (*Triturus vulgaris*) also exists on the site, grass snake (*Natrix natrix*) has been recorded and the ponds support a rich and diverse variety of aquatic invertebrates including the nationally rare *Hydrochus elongatus*, a scavenger water beetle.

Wychavon District has been found to have the highest overall density of great crested newts in the county, with a percentage occurrence within surveyed ponds of 62%. The landscape between Droitwich and Redditch is particularly notable and one of the best examples from within this area is Hanbury parish, where a survey of 32 ponds found 26 contained great crested newts (Watson, 2000). 26 of the ponds surveyed were on the National Trust's Hanbury Hall estate and 21 of these contained great crested newts (Watson, 2001).

The **brickworks at Hartlebury** are thought to support a good population of great crested newts within the series of temporary ponds associated with the workings.

3. Current factors affecting the species

- Deliberate infilling, lack of management, natural succession and development has resulted in damage to or destruction of many breeding ponds and has caused habitat fragmentation where populations become isolated and more vulnerable to change.
- Most of the life cycle of the newt is spent on land and so loss and damage to terrestrial habitat leads to smaller population size and may threaten the viability of a meta-population.
- Seepage into breeding ponds by septic drainage, fertilisers, biocides and other toxic chemicals affects breeding or greatly reduces newt recruitment. Excessive nutrients cause eutrophication leading to algal blooms, a reduction of aquatic plants and an increase in silt deposition.
- The salt found in road run-off is particularly toxic for amphibians, with even very low concentrations preventing newts from breeding, and in high concentrations killing adult newts.
- The introduction of fish and domestic waterfowl can eliminate a great crested newt population through predation and by removal of the aquatic vegetation on which the newts lay their eggs.

- Marginal pond vegetation used for egg-laying can be destroyed by animals, including dogs and livestock, entering the water. This can also cause bankside erosion and increased rates of siltation in a pond.
- Drainage and water abstraction leads to an increase in pond desiccation. Great crested newts require pond water to be present for a four month period during spring and summer. The lowering of the water table will reduce the ability of newts to breed in some sites and may threaten the viability of others.
- The appearance in the UK of the amphibian Chytrid fungus *Batrachochytrium dendrobatidis*, which has been found in great crested newts.

4. Current Action

4.1 Local protection

Lyppard Grange Ponds on the outskirts of Worcester were designated a SSSI in 2000 and a SAC in 2005 due to the presence of a large breeding population of great crested newts.

4.2 Site management and programmes of action

- Worcester City Council manages **Lyppard Grange Ponds SAC** as a Local Nature Reserve. Work has been undertaken to improve the terrestrial and aquatic habitat as part of an agri-environment scheme.
- Advice on great crested newt conservation can be obtained from the **Amphibian and Reptile Conservation Trust**.

4.3 Survey, research and monitoring

- The great crested newt population at **Lyppard Grange Ponds** is monitored by Worcester City Council as part of the requirements of the SAC designation and the associated Site Improvement Plan.
- In 1986 the **National Amphibian Survey** stimulated a great deal of work on the distribution and abundance of amphibians, in particular great crested newts, in Worcestershire. In 1987 an amphibian survey was conducted of 410ha of land in Warndon Parish in Worcester which had been scheduled for development. The 45 ponds within this area were closely studied throughout the 10-year period of the development and great crested newts were recorded from 25 (Watson, 2000). The ponds at Lyppard Grange, with 187 individual adult great crested newts recorded in one evening, is still the best-recorded site in Worcestershire. Between 1987 and 1999, 387 Worcestershire ponds were surveyed at least once for amphibians. 335 (86%) of those ponds contained one or more species of amphibians. 190 of the ponds surveyed contained great crested newts: a 49% occurrence rate. Based on this data there may be 2500 great crested newt ponds in the county.
- The **National Amphibian and Reptile Recording Scheme (NARRS)**, led by Amphibian and Reptile Conservation (ARC), began in 2007 and uses volunteer-based efforts to monitor the status of amphibians and reptiles.

- The **Freshwater Habitats Trust** runs a number of practical survey projects to gather information about the condition of ponds and the species they support, many of which are accessible to volunteers or the owners of individual ponds.
- The **Worcestershire Reptile and Amphibian Group** undertakes survey work and community engagement activities, particularly within Worcester city, to promote and conserve amphibians, reptiles and their habitats.

5. Associated Plans

Urban, Ponds and Lakes.

6. Conservation Aim

The county continues to be held in national regard for the significance of its great crested newt populations and the pondscape habitat mosaic across our countryside is valued and enhanced whenever opportunity allows.

7. Conservation Objectives

Also refer to objectives within H16 Ponds and Lakes Habitat Action Plan

- Planning decisions by Worcestershire's District, Borough and County Planning Authorities will seek to achieve no net loss of great crested newt ponds and will look to create or restore high quality ponds with enhanced terrestrial connectivity for great crested newts in new development schemes wherever appropriate
- Green Infrastructure Concept Plans will identify and advocate for strategic developments to contribute meaningfully towards the defragmentation of the county's network of great crested newt ponds to enhance the favourable conservation status of the species locally

References and further information

Amphibian and Reptile Conservation <https://www.arc-trust.org/>

Arntzen, J. W and Teunis, S. F. M (1993). *A six year study on the population dynamics of the crested newt (Triturus cristatus) following the colonization of a newly created pond.* Herpetological Journal, 3: 99-110.

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

Bray, R (1994). *Case study: a programme of habitat creation and great crested newt introduction to restored opencast land for British Coal Opencast.* Conservation and Management of Great Crested Newts, English Nature, Peterborough, 113-125.

Cooke, A. S (1997). *Monitoring a breeding population of crested newts (Triturus cristatus) in a housing development.* Herpetological Journal, 7: 37-41.

Cresswell, W and Whitworth, R (2004). *An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt Triturus cristatus*. English Nature Research Report 576.

Edgar, P and Griffiths, R. A (2004). *An evaluation of the effectiveness of great crested newt Triturus cristatus mitigation projects in England, 1990-2001*. English Nature Research Reports No. 575.

Edgar, P., Griffiths, R. A and Foster, J. P (2005). *Evaluation of translocation as a tool for mitigating development threats to great crested newts (Triturus cristatus) in England, 1990-2001*. Biological Conservation, 122: 45-52.

English Nature (2001). *Great crested newt mitigation guidelines*. English Nature Peterborough.

Forestry Commission (2014). *European Protected Species in Woodlands: a field guide*. Forestry Commission England.

Freshwater Habitats Trust <https://freshwaterhabitats.org.uk/>

Furnborough, P., Kirby, P., Lambert, S., Pankhurst, T., Parker, P and Piec, D (2011). *The effectiveness and cost efficiency of different pond restoration techniques for bearded stonewort and other aquatic taxa*. Froglife Report on the Second Life for Ponds project at Hampton Nature Reserve in Peterborough, Cambridgeshire.

Gent, A. H and Gibson, S. D (Eds.) (2003). *Herpetofauna Workers Manual*. Joint Nature Conservation Committee.

Griffiths, R. A., Raper, S. J and Brady, L. D (1996). *Evaluation of a standard method for surveying common frogs Rana temporaria and newts Triturus cristatus, T. helveticus and T. vulgaris*. JNCC Report no. 259.

Jarvis, L. E (2012). *Microhabitat requirements of the great crested newt (Triturus cristatus) in a woodland area*. PhD thesis The Open University.
<http://oro.open.ac.uk/54828/1/580633.pdf>

Kinne, O (2004). *Successful re-introduction of the newts Triturus cristatus and T. vulgaris*. Endangered Species Research, 1:25-40.
<https://www.int-res.com/abstracts/esr/v1/p25-40/>

Langton, T. E. S., Beckett, C. L and Foster, J. P (2001). *Great Crested Newt Conservation Handbook*. Froglife.
https://www.froglife.org/wp-content/uploads/2013/06/GCN-Conservation-Handbook_compressed.pdf

Latham, D. M., Oldham, R. S., Stevenson, M. J., Duff, R., Franklin, P and Head, S. M (1996). *Woodland management and the conservation of the great crested newt (Triturus cristatus)*. Aspects of Applied Biology 44: 451-459.

Lewis, B (2012). *An evaluation of mitigation actions for great crested newts at development sites*. PhD thesis. The Durrell Institute of Conservation and Ecology & University of Kent.

Lewis, B., Griffiths, R. A., and Barrios, Y (2007). *Field assessment of great crested newt *Triturus cristatus* mitigation projects in England*. Natural England Research Report NERR001.

National Amphibian and Reptile Recording Scheme www.narrs.org.uk

Natural England publications relating to the European Site Conservation Objectives for the Lyppard Grange Ponds SAC can be found at <http://publications.naturalengland.org.uk/publication/6260627035127808>

Langton, T. E. S., Beckett, C. L and Foster, J. P (2001). *Great Crested Newt Conservation Handbook*. Froglife.

Oldham, R. S., Keeble, J., Swan, M. J. S and Jeffcote, M (2000). *Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*)*. Herpetological Journal 10 (4), 143-155.

Taylor, J., Bannister, S., Parkinson, P and Eccles, L (1999). *Amphibian habitat fragmentation – a case study of an area and the consequences for a translocated five species community*. Heterogeneity in Landscape Ecology: Pattern and Scale, 8th annual conference of the International Association for Landscape Ecology, 139-148.

Watson, W (2000). *The Status and Distribution of Great Crested Newts in Worcestershire 2000: part 1*. Worcestershire Record Issue 9.

Watson, W (2001). *The Status and Distribution of Great Crested Newts in Worcestershire 2000: part 2*. Worcestershire Record Issue 11.

Wilkinson, J. W., Wright, D., Arnell, A and Driver, B (2011). *Assessing population status of the great crested newt in Great Britain*. Natural England Commissioned Reports, Number 080.

Williams, P and Biggs, J (2012). *Change in great crested newt Habitat Suitability Index between 1996 and 2007 assessed using lowland Countryside Survey data*. JNCC Report, No.467.

Worcestershire Reptile and Amphibian Group <https://www.wrag.club/>