

Lowland Derbyshire & Peak District
LBAP Forum 2007

Great crested newt workshop

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The three species of
newt native to the
British Isles

Great crested newts
(also known as the
warty newt)

Smooth newt



Palmate newt



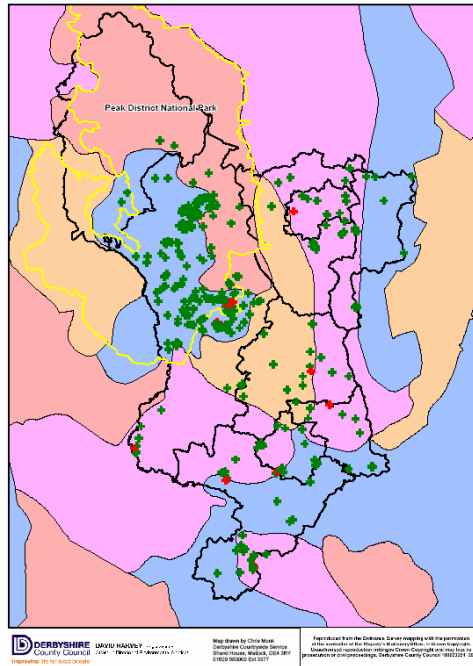
Current known distribution of the great crested newt in Derbyshire.

Background shows both the Natural Areas and the administrative boundaries.

This shows records from the protected species database and some of the older records from 20 or more years ago may no longer be valid.

The recent Derby City pond survey has not managed to confirm the species at several of the sites shown on this map.

Part of the distribution is due to concentrated surveys in certain areas and no survey work in others



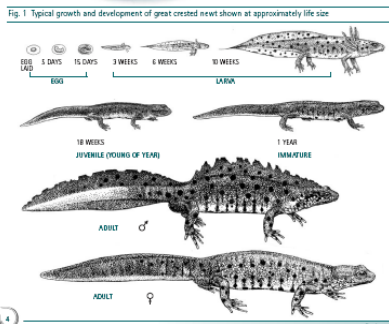


Male

Female

Both sexes have bright patterned undersides. The male develops a crest in the breeding season and a prominent silvery/white (sometimes blue/white) stripe on the tail

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Great Crested Newt
Conservation Handbook



Great Crested Newt Habitat Suitability Index

Background

The Habitat Suitability Index (HSI) for the great crested newt was developed by Oldham *et al.* (2000). HSI scoring systems were originally developed by the US Fish and Wildlife Service as a means of evaluating habitat quality and quantity. An HSI is a numerical index, between 0 and 1. 0 indicates unsuitable habitat, 1 represents optimal habitat. The HSI for the great crested newt incorporates ten suitability indices, all of which are factors thought to affect great crested newts.

The HSI system proposed by Oldham *et al.* (2000) is fairly easy to use. However, one suitability index (SI9, terrestrial) involves a more lengthy measurement and calculation than the other factors. In using the HSI system with volunteer surveyors in Kent, Lee Brady substituted a simpler evaluation of terrestrial habitat quality, a four-point scale. Volunteers have found this modified HSI relatively easy to use.

Several other, local, surveys have utilised the HSI, but utilised their own variations on the original system. In 2007, a workshop was held at the Herpetofauna Workers' Meeting to evaluate the use of the HSI for the great crested newt, with the aims of:

- identifying components of the system that may need clarification or refinement
- agreeing on a standard that can be easily used by volunteers and professionals alike.
- A conservative approach has been adopted in modifying the use of the original HSI suitability indices.

Use and limitations of HSI

- The HSI for great crested newts is a measure of habitat suitability. **It is not a substitute for newt surveys.** In general, ponds with high HSI scores are more likely to support great crested newts than those with low scores. However, the system is not sufficiently precise to allow the conclusion that any particular pond with a high score will support newts, or that any pond with a low score will not do so.
- There is also a positive correlation between HSI scores and the numbers of great crested newts observed in ponds. So, in general, high HSI scores are likely to be associated with greater numbers of great crested newts. However, the relationship is not sufficiently strong to allow predictions to be made about the numbers of newts in any particular pond.
- HSI scoring can be useful in:
 - Evaluating the general suitability of a sample of ponds for great crested newts
 - Comparing general suitability of ponds across different areas
 - Evaluating the suitability of receptor ponds in a proposed mitigation scheme.

Summary of scoring system

SI 1 Location

A (optimal) 1 B (marginal) 0.5 C (unsuitable) 0.01

SI 2 Pond area

Measure pond surface area (m²) and round to nearest 50 m²

SI 3 Pond drying

Never 0.9 Never dries

Rarely 1.0 Dries no more than two years in ten or only in drought.

Sometimes 0.5 Dries between three years in ten to most years

Annually 0.1 Dries annually

SI 4 Water quality

Good 1.0 Abundant and diverse invertebrate community.

Moderate 0.67 Moderate invertebrate diversity

Poor 0.33 Low invertebrate diversity, few submerged plants

Bad 0.01 Clearly polluted, only pollution-tolerant invertebrates, no submerged plants.

SI 5 Shade

Estimate percentage perimeter shaded to a least 1 m from shore. Read off graph.

SI 6 Water fowl

Absent 1 No evidence of water fowl (although moorhen may be present)

Minor 0.67 Waterfowl present, but little sign of impacts

Major 0.01 Severe impact of waterfowl

SI 7 Fish

Absent 1 No records of fish stocking and no fish revealed during survey.

Possible 0.67 No evidence of fish, but local conditions suggest that they may be present.

Minor 0.33 Small numbers of crucian carp, goldfish or stickleback known to be present.

Major 0.01 Dense populations of fish known to be present.

SI 8 Pond density

Count the number of ponds within 1 km of survey pond, not separated by major barriers, and divide by 3.14.

This can be done from maps rather than in the field.

SI 9 Terrestrial habitat

Good 1 Moderate 0.67 Poor 0.33 None 0.01

SI 10 Macrophytes

Estimate the percentage of the pond surface area occupied by macrophyte cover (between May and the end of September)

Categorisation of HSI scores

Pond suitability for great crested newts

HSI score

<0.5 = poor

0.5 – 0.59 = below average

0.6 – 0.69 = average

0.7 – 0.79 = good

> 0.8 = excellent

