

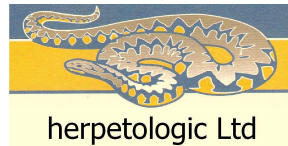


ARG UK

Herpetofauna Workers' Meeting Abstracts

Saturday 27 – Sunday 28 January 2007
**Butts Park Arena, Butts Road,
Coventry**

Conference generously sponsored by:



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The ARG UK Insurance Scheme

David Orchard

Amphibian and Reptile Group for South Lancashire, Bolton, Lancs.

In April last year, ARG UK launched a nationwide insurance scheme, offering free insurance to all ARGs affiliated to ARG UK. This comprises public liability, member-to-member, and personal injury insurance. The continuation of this policy in 2007 and beyond is a top priority for the ARG UK committee, as we realise that arranging insurance is a burden that groups could do without. A collective policy is the most economical way of doing this, and ARGs can easily be covered if they ensure that some simple steps are taken.

Making sure that volunteers are adequately covered by insurance is one of the essentials of running any volunteer group. This presentation will explain what an ARG needs to do to ensure it is fully covered by our insurance scheme, and will highlight a few of the things that people can easily forget. The presentation will aim to make this subject as clear and straightforward as possible, and dispel some misconceptions about group insurance.

If, during 2007, anyone has specific queries about the ARG UK insurance policy, please contact David Orchard at Dorchard@arg-uk.org.uk.

Linking global warming to amphibian declines

Dr Chris Reading

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Currently there is a consensus that means annual global temperatures have increased significantly over recent years and that there is a continuing worldwide decline in many amphibian species and

extinctions in some others. There is less agreement about the causes of this decline and although a link with global warming is suspected, the mechanism of any such link has not been clearly demonstrated. The results of an ongoing long-term study (1983-2006) of common toads (*Bufo bufo*) in the UK, has revealed two pathways by which amphibian populations are adversely affected by rising environmental temperatures. First, there is a clear relationship between a decline in the body condition of female toads and the occurrence of warmer than average years, particularly winters, since 1983. This has been paralleled by a decline in their annual survival rates. Second, there is a significant relationship between the occurrence of mild winters and a reduction in female body size resulting in fewer eggs being laid annually. The effects of partial hibernation, resulting from mild winters, on female toad physiology appear to be an important factor linking the observed decreases in both body condition and survival rates.

Using GIS to model opportunities for great crested newt metapopulation connectivity at the landscape level

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The viability of great crested newt metapopulations depends upon clusters of breeding ponds in hospitable terrestrial habitat without impermeable barriers. In such situations, dispersal and gene flow can occur between ponds, and opportunities for colonisation and recolonisation are maintained. Pond loss and habitat fragmentation in Britain has meant that population connectivity has been reduced in many places, and dispersal hampered; with the effect that isolated populations run the risk of extinction. With limited resources for great crested newt conservation, action must be targeted wisely. This project, funded by Countryside Council for Wales (CCW), aims to use GIS modelling to identify opportunities in northeast Wales for targeting pond creation, habitat management and other action to maximise the effects on connectivity and viability. Northeast Wales constitutes one of the great crested newt's strongholds in Britain, yet comparison of historic maps shows a pattern of severe pond loss there over the last 150 years. By attributing permeability 'costs' to land cover types, functional networks of accessible habitat can be mapped across the whole landscape. The larger the network, the more viable the population should be. The network maps can be used to identify areas with suitable ponds that are isolated due to impermeable terrestrial habitat, large-scale barriers to dispersal, and existing large networks where protection measures should be focused. The outcomes will be used to guide CCW's great crested newt conservation strategy, and could be applied elsewhere in Britain.

Jersey Toads: Habitats and Heterozygosity

John W. Wilkinson

The Durrell Institute of Conservation and Ecology, University of Kent, Canterbury.

The reproductive ecology of *Bufo bufo* in Jersey is somewhat different than the "classical" toad model. This work examines the use of two modern scientific techniques (radiotracking and molecular ecology) to investigate other aspects of toad biology on the island and to utilize their results in making practical conservation decisions. The terrestrial habitat use of Jersey toads following breeding and the genetic diversity and structure of toads from Jersey will be discussed in context of the species' conservation there.

Herefordshire Ponds and Newts Project

Will Watson

Herefordshire Amphibian and Reptile Team, Leominster, Herefordshire.

This three year project run by the Herefordshire Amphibian and Reptile Team (HART) surveyed 286 within the Herefordshire Rivers LEADER+ area, 880 square kilometres. The main aim was to ascertain the distribution of the great crested newt. Presence and/or absence of all amphibian species were noted. A condition assessment of all ponds was also undertaken using habitat suitability indices (HSI values). 120 people attended training courses.

The Project to date, as of the 1st November 2006, has generated 606 amphibian records. 46% of all ponds visited were found to support the Specially Protected great crested newt. 48% of ponds supported smooth newt and 29% of ponds supported palmate newt. 30 ponds supported all three species of newt representing 11% of all ponds. In addition, 49% of ponds supported common frog, 32% of ponds supported common toad and two ponds were found to support the introduced marsh frog. 18% of ponds were found to support all three species of newt. The records show that great crested newts are spread evenly throughout the area with obvious areas of deficiency.

It was very encouraging to confirm the widespread distribution of the 'common' species of amphibian in Herefordshire. However, the habitat suitability of ponds for great crested newts showed that 20% of ponds were found to be poor or below average condition. A third of all ponds with great crested newts were in good condition and a third of ponds were in average condition.

Pond density within the county is only just above the national lowland average at just over 2 ponds per square kilometre and in many places it is lower. Suboptimal habitats and fragmentation of populations are likely to put additional pressure on such vulnerable populations possibly leading to further declines.

If you would like to find out more about the work of the Project HART and HPN Project have produced 'the Amphibian and Reptile Atlas of Herefordshire' detailing their findings and further information can be found on the HART website at www.herefordhart.org.

Making the Most of Sustainable Drainage Systems for Amphibian Conservation

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Sustainable Drainage Systems or SUDS is a new approach to managing rainfall on development that seeks to mimic natural drainage patterns.

The presentation explains how conventional drainage affects the environment, particularly for amphibians, and introduces the concepts and practice of SUDS.

Although Sustainable Drainage has been promoted by Government and the Environment Agency for over 10 years, the amenity and biodiversity benefits have largely been ignored by drainage designers.

We now know that SUDS can provide cost effective drainage with wetland habitat funded and maintained by development.

Three Case Studies are presented that illustrate the benefits of SUDS to amphibian conservation.

The last example is a school development in Milton Keynes that includes mitigation and habitat enhancement for Great Crested Newts providing a SUDS design exemplar for conserving this totemic species.

The presentation concludes with some positive action that herpetologists can take to ensure that these systems realise their potential for herptile and general biodiversity enhancement.

Sustainable Drainage and Amphibian Colonisation in Milton Keynes

Chris Damant

Bernwood ECS, Swanbourne, Milton Keynes, Bucks.

Milton Keynes is forty years old this week and over that period dramatic changes to the North Buckinghamshire landscape have taken place. A new community has arrived and acquired its own football club, while the surrounding landscape has also seen changes in farming practices over the same period.

Work by the Open University in the 1980's and 1990's (Ridge, Halliday, Baker, Barns and others) provide a brief snapshot of amphibian populations present over this period. Since then other studies have been carried out, led by legislation, planning control and estate management.

The results of these surveys demonstrate that amphibian populations are still present within and around the town with species such as great crested newt being widespread. They also however showed that their pond habitats remained threatened by development and succession.

There can be no doubt that over this period many ponds and other habitat have been lost. In 1997 Baker and Halliday demonstrated that from a sample set of 81 ponds (1984-93) 15% had been lost to the direct impact of development and a further 5% to changes in hydrological conditions.

The 1991 and 1992 Bernwood ECS was commissioned to carry out a survey of 84 ponds on the fringes of the town as it was then (within the 1960's designated boundary) and found that great crested newts were present in 40% of ponds, often more frequent than common smooth newt, common frog and common toad.

In many cases the good great crested newt sites were found to be areas of advanced infrastructure (green spaces and water attenuation) prior to development. Many of the older farm ponds were in a state of neglect (succession, scrub encroachment or damage (infilling/dumping) and supported only small populations of one or two amphibian species.

In 2003 Bernwood ECS carried out a random sample of 20% of ponds identified as supporting great crested newts from historical records and found that they were still present in 65% of sites sampled. Two ponds out of 24 had been lost.

At the same time Milton Keynes Parks Trust (ELMAW) and Milton Keynes Council (Herbert) carried out their own survey of ponds within Milton Keynes wildlife corridors and amenity spaces.

- MKPT 81 ponds Surveyed (ELMAW)
 - Great crested newts confirmed as present in 29% of ponds surveyed
 - Positive management works required in 55%
 - 4% found to be dry

- MKC 25 ponds surveyed (Herbert)
 - Great crested newts confirmed as present in 44% of ponds
 - Positive management works required in 44%

Over the past ten years there has been increasing emphasis placed on the attenuation and treatment of surface water drainage. The development of Sustainable Urban Drainage techniques across Milton Keynes has increased over this period and provides some positive ideas on their application in maintaining and supporting amphibian habitat as part of the development process.

The treatment of water as a resource that can be managed to enhance the environment will be explored at five sites where amphibians, particularly great crested newts, have been found including:

Site 1: A series of permanent and seasonal water bodies where early attempts (mid 1990's) at Sustainable Urban Drainage have been used to secure water to maintain existing wetland habitats.

Site 2: A series of 8 ponds and swales created (mid 1990's) in advance of development (2007) that now support a healthy meta-population of great crested newts and how SUDS principles will be used to further enhance the area as part of the development.

Site 3: The use of SUDS principles to create two new ponds near a "high" but isolated population of great crested newts.

Site 4: The creation of swales and ponds where early indications suggest that great crested newts have begun to colonize.

Site 5: The building of a new school and opportunities for amphibians.

In its 40th year and as completion of the 1960's master plan for Milton Keynes draws to a close attention is being focussed on A New Plan for Milton Keynes 'A Strategy for Growth to 2031'. Sustainable Urban Drainage Schemes in combination with wildlife corridors can provide a principle means of delivering accessible green space for people and wildlife.

The ups and downs of Cumbrian Natterjacks at Drigg

Ash Bennett

Cumbria Amphibian and Reptile Group, Penrith, Cumbria.

This talk looks briefly at various aspects of monitoring and management at the Drigg Dunes system over the years. After a short introduction to the site there will be four main aspects to the presentation.

1. Accurate and detailed weather data recorded at the nearby BNFL Sellafield nuclear power station combined with measurements taken at the sites piezometers enables us to consider the inter-relationship between rainfall, pond levels, spawning activity and the behaviour of the water table.
2. An explanation is given for why certain ponds were re-profiled in the previous few years.
3. There is a description of how a minor management project on the saltmarsh at Drigg resulted in the largest emergence of toadlets for many years, and how the use of GPS enabled a greater understanding of the dynamics of this important habitat within the site.
4. A series of slides shows how a fixed point photography project begun in the 1980's illustrates the significant changes in vegetation types which is otherwise invisible.

Changes in European protected species legislation: implications for amphibian and reptile conservation

Jim Foster

Science and Evidence Team, Natural England, Peterborough.

The EC Habitats Directive is transposed into UK law by the Conservation (Natural Habitats, &c.) Regulations 1994. Amongst other things, this legislation establishes a system of strict protection for species on Annex IV of the Directive, which include the great crested newt, natterjack toad, sand lizard, smooth snake and leatherback turtle. A judgment in the European Court of Justice in October 2005 found that the UK was lacking in its transposition of the Directive. Defra has been leading on a consultation and review of the 1994 Regulations in order to remedy the deficiencies identified in the court judgment. At the time of writing, the details of the amended legislation are not finalised, but are

likely to include some changes with important consequences for herpetofauna. For example, it is likely there will be: an explicit duty to undertake surveillance of conservation status; loss of several defences; removal of offences from the Wildlife and Countryside Act 1981 (as amended) and harmonisation of penalties with the 1994 Regulations; new offence of breaching licensing conditions. These changes will undoubtedly assist in many aspects of species protection, though the full implications of some changes are more complex.

Survey programmes for NARRS roll-out in 2007

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The National Amphibian and Reptile Recording Scheme is an umbrella for herpetofaunal monitoring programmes designed to measure and monitor the conservation status of amphibians and reptiles in the United Kingdom. Ongoing programmes, primarily for rare species, will be incorporated into NARRS, with some modification. Widespread species will be monitored by new initiatives, including a *National Amphibian Survey* and a *National Reptile Survey*. These will seek volunteer participation in the survey of randomly selected sites: ponds in the case of amphibians, and 1-km squares for reptiles. A random sample of 400 squares has been selected, spread evenly across all Vice Counties. The pond nearest the southwest corner of each square will be surveyed for amphibians, on up to three visits. Reptile survey will be targeted at the most likely reptile habitat within the square, with the aim of gaining representative data. Flexibility given to the surveyor to choose methods, but instructions and guidance will be provided on other aspects. Volunteers are now being recruited to take part in these surveys. We are recruiting trainers and hope to set up local training courses around the UK in March and April, so that surveys can take place in spring 2007. Webpages are currently added to the NARRS site (www.narrs.org.uk), to give details of the surveys and to manage volunteer participation. A poster showing the 400 survey sites is displayed here at the conference, and you can record your interest in a particular square if you wish to take part in the *National Amphibian Survey* or the *National Reptile Survey*.

Distribution, reproduction and phylogeography of the common lizard, *Lacerta vivipara*, in Ireland

Aodan Farren

Queen's University, Belfast, Northern Ireland.

As Ireland's only species of reptile, *Lacerta vivipara* has a protected status, and is a key component of Irish biodiversity. Knowledge of where this species is found in Northern Ireland and in what numbers is fundamental for short and long term conservation and management strategies.

L. vivipara is unusual in that it is a reproductively bimodal species. Over most of its range it is viviparous, with the young fully formed when born and emerging from a thin membrane. However, two populations, in southern France/northern Spain, and around Croatia/northern Italy/Austria, are oviparous. These young are at an earlier stage of development when laid and are encased in a thicker eggshell. Whilst it is known that the British common lizard is viviparous, no studies or observations have been carried out on the Irish population(s) to examine their breeding strategy.

Genetic techniques have already been used to determine the phylogeography and origins of viviparity in this species for continental Europe and mainland Britain. These studies, however, have not included samples from Irish lizards. Thus, the origin(s) of the Irish population(s) remain uncertain. For instance, existent populations may be derived from ancestral ones that could have survived the last glaciation in a refuge thought to have existed in the southwest of Ireland, as suggested for other Irish

species (e.g. the Irish hare and stoat). Alternatively, they could be descended from individuals that arrived from mainland Britain when the ice receded (around 10,000 years ago) via a land-bridge, or through some form of human introduction. If the former hypothesis is true, then the Irish population should be unique genetically, and thus would be very important from a conservation viewpoint.

My research has three main aims: (1) To gather and investigate sighting records, and carry out surveys of a number of sites to get an idea of distribution and abundance; (2) Captive breeding investigations to confirm the breeding strategy of Irish population(s); (3) To determine the origins of the Irish population by comparing the mtDNA between samples of lizards from Ireland, Britain and Europe.

Making Compost Count for Slow-worms

Gareth Matthes

Surrey Amphibian and Reptile Group, Haslemere, Surrey.

A talk of two halves. The first half includes a brief introduction on composting and the work of the Community Composting Network (www.communitycompost.org). Several examples are provided of successful community composting projects including doorstep kitchen waste collection schemes in Hackney, London (www.elcrp-recycling.com), Burnley, Lancashire (www.offshoots.org.uk) and a brief history on the rise and fall of Allotments.

The second half discusses the importance of allotments to slow-worms; how as individuals and ARG's we can help save allotments; and the benefits of using compost heaps over hibernacula as focal points in slow-worm relocation projects. Finally and most importantly, NARRS is currently conducting a 'Slow-worm Compost Survey' and needs records. The talk concludes with a brief account of the survey results to date. **Feel free to fill-in the 'Slow-worm Compost Survey' forms provided, and hand in to Chris Gleed-Owen or Gareth Matthes over the course of the weekend, or go online to www.narrs.org.uk/slowwormcompost.htm.**

Workshop & training sessions

1. Climate Change and herpetofauna: implications and adaptations in Britain (leaders: Andrew Heaton, Kerry Murton). *Running in sessions 1 and 2.*
2. Managing habitats for reptiles (leaders: Jim Foster, Paul Edgar). *Running in sessions 1, 2 and 3.*
3. Updating the HGBI mitigation and translocation best practice guidelines (leaders: Jan Clemons, Jon Cranfield). *Running in sessions 1, 2 and 3.*
4. Habitat suitability index for great crested newts: use and development (leaders: David Sewell, Rob Oldham, John Baker). *Running in sessions 1, 2 and 3.*
5. Changes in licensing requirements and procedures for European protected species in England (leaders: Kevin Rye, Christian Gregory, Karen Watson). *Running in sessions 1, 2 and 3.*
6. 'Training the trainers' – how to run a NARRS volunteer training event in your area (John Baker, Chris Gleed-Owen). *Running in session 3.*