ARG UK
Herpetofauna Workers Meeting 2008
Presentation Abstracts

NARRS update
Chris Gleed-Owen, The HCT

In 2007 The Herpetological Conservation Trust launched the *National Amphibian Survey* and the *National Reptile Survey* as part of NARRS, to monitor population trends in the widespread species. We ran 52 training days across the UK with help from ARG members and other voluntary trainers. Participants were trained in identification, ecology and survey, and licensed where relevant. We generated a random selection of 400 one-kilometre priority squares evenly dispersed across the UK, plus more numerous lower-priority squares. Over 1,000 people registered on the website (www.narrs.org.uk), and about half requested a survey square. Take-up was inevitably biased towards human population centres, but there may also have been bias towards squares perceived to be more favourable.

Results were returned from over 110 reptile and 150 amphibian surveys. For reptile surveys the mean number of site visits was 2.55 (range 1 to 20). Reptiles were detected in 55 squares (53%). This figure probably hides some bias in the squares surveyed, possibly a higher drop-out rate in squares perceived as unlikely to contain reptiles. For the amphibian survey the mean number of visits was 1.91 (range 1 to 7). Amphibians were detected in 107 ponds (75%). Particularly notable was the relatively high rate of detection of palmate newts (30%), which may be due to a high volunteer uptake in Scotland.

Refinements will be made to protocols for continuation of these widespread species surveys in 2008. Participants will be able to repeat their current squares or request new sites.

Making the Adder Count – developing a local project in Derbyshire
Chris Monk, Derbyshire ARG

The launch of *Make the Adder Count* in 2005 by the HCT was the catalyst for a programme of survey work to define the neglected adder populations in the Peak District National Park. The last recorded surveys had been by the National Park in 1995 and concentrated on three one-kilometre grid squares, which the county red data book claimed to be the extent of the adder population in Derbyshire. Research before the start of the project found a wider scattering of adder records from the local Biological Record Centres and the Sorby Society's 1997 publication. Before field work the extent of recent records extended to 13 one-kilometre grid squares.

The first year of the project, effectively carried out by two surveyors, revealed a much wider distribution than previously reported and many hibernation sites were located. It also showed that to carry out long term monitoring, locate other hibernation sites in the main area and try to confirm alleged adder records elsewhere in the National Park would be beyond the capabilities of two or three people. Therefore, a survey training day was organised through the Derbyshire ARG in early 2006, which brought in both members and also other expert naturalists keen to assist. Together with the return of John Newton, who had been the source of the majority of the Sorby Society's records in the 1980s, plans of the area showing locations to be monitored were drawn up and distributed together with record forms. A further *Make the Adder Count* training day attended by several new surveyors was organised by Derbyshire ARG in 2007. John set up a South Yorkshire ARG and they held a NARRS training day on site in 2007. Over 20 people have returned records in the three years of the project, with about 40 hibernation sites identified and many more adder sightings confirmed where hibernation areas have yet to be located.

After three years of fieldwork we now have a distribution map showing adders definitely present in 32 one-kilometre grid squares and possibly present in another seven. The project has shown that adder surveys can enthuse volunteers and there is a waiting list for this year's training day.

Monitoring and distribution surveys in the Netherlands
Raymond Creemers, RAVON (Reptile, Amphibian and Fish Conservation Netherlands)

RAVON is a Dutch NGO with about 30 staff members, approximately 1000 volunteers (members) and some 500 other interested people. The Monitoring working group is responsible for the organisation of two national schemes which involve the work of hundreds of volunteers. Both networks operate on a national level, participating in the Network Ecological Monitoring (NEM). The NEM includes other national flora and fauna networks. NEM networks receive financial support from the Ministry of Agriculture, Nature and Food Quality and Statistics Netherlands.

Monitoring is defined as the counting of numbers of sightings in a representative sample, either a plot or a transect. Monitoring produces statistical nationwide trends for transects and most species show statistically significant trends after ten years. In this project a lot of time is invested in personal contacts with volunteers. Amphibian monitoring focuses on breeding waters: eggs, larvae, juvenile and adult animals. The waters are surveyed three to four times a year. All sighted species are registered. Reptile monitoring uses transects. It is based on sightings under well-defined, favourable weather conditions and observations under artificial shelters. One visit takes about two hours and the transects are visited seven times a year. Both networks focus on Red List-species but also produce reliable trends for widespread species.

Mapping projects focus on changes in distribution and range. Data are collected in different ways, varying from detailed mapping projects to single observations. Instead of elaborate data gathering and time-consuming conversion of different datasets RAVON concentrates on providing the technical infrastructure for mapping. In close cooperation with other NGOs we developed online data entry portals, which are crucial in gathering as much data as possible. After validation these portals provide the data for a large National database *Flora and Fauna*, in which all distribution data of every species are recorded.

The presentation will end with a demonstration of the online portal. Although our latest portal is still in development, we expect that it will be used by a large and growing web-based community of volunteers. Furthermore it provides tools for future national and European mapping projects.

Essex seawalls – an important but threatened refuge for reptiles
Jon Cranfield, Essex ARG

Major features of the Essex coast and rivers are the large embankments of flood defences or coastal seawalls. Seawalls provide important habitats for reptiles in a predominantly agricultural landscape, providing relatively undisturbed habitats where foraging and hibernation areas are found.

A recent seawall renewal project at Peldon, near Mersea Island, employed a mitigation strategy to exclude reptiles from works areas and to provide compensatory habitats on nearby farmland. The monitoring of this scheme has shown that reptiles have recolonised the new seawall and have survived the works to raise the seawall.

Probably the most well known seawall realignment occurred at Abbotts Hall Farm in 2001/2002. Reptiles were relocated from the work areas along the seawall to other sites located further inland. Monitoring revealed that adders may have swum back to the islands of remnant seawall possibly to hibernate. Further research is needed to look into the impacts of seawall renewal and realignment on reptile population.

The consequences of being SACed – conservation action on SACs and delivering FCS
Matthew Ellis, Countryside Council for Wales

Northeast Wales is the Welsh stronghold for the great crested newt, having over 600 recorded sites. It supports three of the five grade A and B Welsh Special Areas of Conservation. These three SACs are underpinned by five SSSIs of varying sizes. Owing to their location, all three are at risk from factors such as colonisation by fish, non-natives and encroachment. To safeguard these sites CCW has committed its

resources to directly implement site management and monitoring. Consequently CCW works closely with partner organisations to safeguard statutory sites. Key partners include local authorities, voluntary sector organisations and land owners/occupiers. Surveillance and monitoring, together with conservation works carried out on sites, is reported annually. This forum helps to provide an awareness and understanding of local issues and actions undertaken to address these. More recently, a multi partner project has commenced to assist the delivery of conservation status action for the species. This project aims to support existing action and provide a complementary means of addressing material management and site safeguard issues.

Emergence of amphibian chytridiomycosis in the UK

Andrew A. Cunningham, Institute of Zoology, Zoological Society of London

While much of the blame lies with habitat loss, overexploitation and other "usual suspects", the most significant cause of amphibian extinctions globally is the emergence of the virulent fungal disease, chytridiomycosis. Chytridiomycosis is caused by a fungus in the order chytridiales (the chytrid fungi) called *Batrachochytrium dendrobatidis*. This fungus was unknown until 1998, when it was simultaneously discovered as the primary cause of catastrophic amphibian declines in the rain forests of Australia and Central America. *B. dendrobatidis* is the only chytrid fungus known to infect vertebrates (others are known that infect invertebrates and plants). Although the fungus is known only to infect amphibians, it has low host specificity, infecting at least 14 families and over 200 species on six continents.

Despite almost a decade of research on amphibian chytridiomycosis, there is still much that remains unknown. The exact mechanism by which *B. dendrobatidis* causes mortality is not known, nor is the reason why the fungus has recently emerged as such a threat to amphibians. There is growing evidence, however, to indicate that the fungus was likely naturally occurring and benign in one area of the world, but has recently been spread globally by human activity. Some amphibian species, such as the North American bullfrog (*Rana catesbeiana*), the African clawed frog (*Xenopus laevis*) and the alpine newt (*Triturus alpestris*) are generally unaffected by *B. dendrobatidis* infection and there has been speculation that these species might act as transport hosts, or vectors, introducing the infection to new areas and to new and susceptible host species and populations.

The presence of the fungus induces a number of host responses, including, in metamorphosed animals, patchy thickening of the skin (especially of the outer layer of keratin) and skin ulceration. Areas of the skin more frequently in close contact with the water, such as the digits and the pelvic patch, are usually more severely affected. Inflammatory responses rarely occur and the degree of tissue damage is very low. There is no evidence of immunosuppression either as an underlying factor to, or as a consequence of, *B. dendrobatidis* infection.

Signs of the disease include lethargy, loss of righting reflex and abnormal posture. Visible abnormalities of the skin are usually not apparent, although increased epidermal sloughing, skin ulceration and reddening (hyperaemia) of the digital and ventral skin have been reported in some species. Diagnosis of the disease can be confirmed only by the analysis of infected tissues using either microscopy or molecular techniques, such as the polymerase chain reaction (PCR) and quantitative PCR. PCR is a very useful technique for rapid diagnosis and for screening large numbers of animals.

In 2004, *B. dendrobatidis* infection was found for the first time in wild amphibians in Britain: two of 14 juvenile North American bullfrogs from a site where this species had become established were diagnosed with the infection. Since then, the infection has been found in wild amphibians from seven other sites and we now know that it appears to have "jumped" into some native British species. Although there is evidence that the fungus can kill British amphibians, we do not know if it is likely to negatively impact populations or how great the threat is to our amphibian fauna. We urgently need to find out whether the fungus remains localized at sites of known infection, or if it is more widely distributed across the country.

Crassula control
Kylie Jones, NEWWildlife

NEWWildlife manages parts of two great crested newt SACs in North East Wales. The charity, established in 1986, has amassed over twenty years of experience in amphibian conservation through campaign, survey and the management of development mitigation sites. In that time, two issues in particular have come to the forefront in conservation circles: climate change and invasive species. This presentation details the practical struggles that the team have recently undergone in tackling the non-native and highly invasive Australian swamp stonecrop on sites in Wrexham, and how this has helped spur the development of a regional partnership approach to tackling invasive aquatic plant species, through training, awareness raising, and data collection. It has become apparent that, in addition to national political action (e.g. DEFRA is currently consulting on banning the sale and propagation of many potentially and actually invasive species, and the GB Non-native Species Secretariat is taking a risk assessment based approach towards alien species) there is a need to disseminate best practice at a local level. To this end, the author will draw together some lessons from various preliminary management case studies in the control of *Crassula* that may be of benefit to land managers.

Conservation of Jersey Herps
John Pinel, States of Jersey, Environment Division

Jersey is a geologically young island, with a land area of 117 km^2 above high water, and approximately 200 km^2 at low water. It lies within the Bay of St. Malo, approximately 25 km west of Normandy and 150 km south of the English coast. Whilst politically it is part of the British Isles, its flora and fauna, unsurprisingly, share more similarities with France than Britain.

Despite its small size, the Island is surprisingly biologically diverse, however the effects of a large human population exert much pressure on the natural environment. The Island supports three native amphibian and four native reptile species as well as introduced terrapins and pool frogs.

The States of Jersey, Environment Department are responsible for nature conservation on the Island.

Changes in European protected species legislation: implications for amphibian and reptile conservation
Jim Foster and Caitríona Carlin, Natural England

The Habitats and Species Directive is a key piece of European legislation, with a profound influence on nature conservation in the UK. It is implemented domestically through The Conservation (Natural Habitats &c.) Regulations 1994 (as amended). Amongst other things, these Regulations put in place a system of strict protection for "European Protected Species" (EPS). In August 2007, following a judgment against the UK government in the European Court of Justice in 2005 (Case C-6/04), the Regulations and associated legislation were amended. The key amendments included: removal of some defences to normally prohibited activities; extension of possession offence; removal (in England and Wales) of most offences for EPS under the Wildlife and Countryside Act 1981; setting a threshold for the disturbance offence; inclusion of custodial sentencing; introduction of an explicit duty to monitor conservation status.

The implications for the conservation of EPS herpetofauna are mixed. Stricter controls on some activities are welcome, and the surveillance duty will benefit monitoring projects. However, there are also negative consequences. The loss of the "incidental result" defence, combined with the strict liability damage/destruction offence, potentially makes many more activities unlawful. This may leave land managers and others carrying out countryside activities in a difficult situation. The changes are already resulting in an increasingly risk-averse stance in some sectors. Whilst it is sensible to consider risks carefully, Natural England is concerned that an over-precautionary approach is becoming more common. There is a danger that, in becoming increasingly prohibitive, the legislation will result in fewer proactive measures such as habitat creation. The revised regime is also rather complex to grasp, with likely communication and enforcement problems. Natural England is keen to promote a positive, pragmatic, risk-based and

proportionate approach to interpreting the legislation. This will assist in achieving a key aim of the Directive: to restore species to a favourable conservation status.

The Pond HAP
Becca Cleaver, Pond Conservation

Ponds were added to the UK list of priority habitats last year, but what does that mean and what are people doing about it? As joint Lead Partner for ponds, Pond Conservation has led the production of a national Habitat Action Plan, and plans are underway to restore the national pond stock to one million (there were an estimated 1.25 million ponds at the beginning of the 20th century) and recreate a landscape rich in wetland wildlife. Everyone has a role to play here.

Colonisation of newly created small ponds by great crested newts
Amy Wright and Richard A. Griffiths, The Durrell Institute of Conservation and Ecology, University of Kent, Canterbury

Although pond creation is a fundamental tool in amphibian conservation and mitigation, rates at which species colonise new ponds are poorly understood. In 1998 four small ponds were created on the University of Kent campus to monitor natural colonisation by amphibians. The ponds were constructed from PVC liners, were identical in size and shape, and were spaced out in a line at 2-m intervals. In 1999, all four ponds were used by all three species of newts, including six male great crested newts. The numbers of all three species increased over the next three years, peaking in 2002-2003. The colonisation patterns of great crested newts and smooth newts were similar. A drift fence around the ponds was installed in November 2004 to monitor migration patterns. Migrations were highly directional, but the timing of movements varied between individuals. There was also considerable variation in capture rates of individual great crested newts. Some individuals stayed in the same pond all season while others wandered between ponds. Equally, some individuals were more likely to enter bottle traps than others. In December 2005 all the ponds were drained and refilled after replacement of the liners. This had no discernible effect on the numbers of newts returning the following spring. Although some of the great crested newts have now been returning to breed for at least eight years, not all return every year: some have skipped breeding for up to two years during the study period. There is a relatively high rate of pond occupancy by great crested newts within the wider landscape, and their use of small ponds may be related to the dynamics of the broader metapopulation.

Do translocations work? A ten-year study of a translocated slow-worm population in Kent
James Webster/Richard Griffiths, The Durrell Institute of Conservation and Ecology, University of Kent, Canterbury

Slow-worms are frequently translocated from sites scheduled for development. However, the ecology of this species remains poorly understood and there are few long-term follow-up surveys of translocated populations. In 1995, 103 slow-worms were translocated from a development site in Canterbury to a newly-managed nature reserve on island bounded by the River Stour. Over the next two years the population declined, the slow-worms failed to breed and displayed low body condition. The translocation site was re-surveyed in 2005 and 2006. Although the body condition of slow-worms has recovered and breeding is now occurring, the population seems to have declined further and may now number fewer than 40 animals. There is an unusually high recapture rate of slow-worms under artificial refugia, and despite ongoing management of the site, there may be a shortage of suitable habitat available. It may take a further ten years of survey to determine whether or not this translocation has been successful in establishing a self-sustaining population.