

MAMMAL NEWS

www.mammal.org.uk

Summer 2010 • Issue 157



**ROYAL MAIL
ISSUES MAMMAL
STAMPS**

**SAVING THE
HIGHLAND TIGER**

INSIDE THIS ISSUE: • BATS AND BUREAUCRACY • IN PURSUIT OF PINE MARTENS
• HOW DO BADGERS EAT YEW 'BERRIES' WITHOUT BEING POISONED?

Mammals in the News

Destructive Dormice

A new report on invasive foreign species, commissioned by The People's Trust for Endangered Species, has listed edible dormice (*Glis glis*) alongside grey squirrels, American mink and Reeve's muntjac. New research, to be published later this year but contained in the report, will show that there are now up to 30,000 individuals in the UK though they are still quite confined in their range. The edible dormouse was introduced to Tring Park, Hertfordshire from the Continent in 1902 by Walter Rothschild. The edible dormice escaped from captivity shortly afterwards and have since been known to cause widespread damage to woodland by stripping bark from trees and destroying fruit crops. The Non-native Species Secretariat is also currently assessing the threat it poses to British wildlife. The report listed the American mink and the grey squirrel as the most damaging species to have become established in this country. For copies of the report visit www.ptes.org or call 020 7498 4533.



New bat discovered in the UK

The discovery of a bat species not seen before in the UK has taken the number of species established here from 16 to 17. *Myotis alcathoe*, or Alcathoe's bat, was found in the North York Moors National Park and the South Downs of Sussex. The bats were discovered by researchers from Leeds and Sheffield Universities who believe it could also be present elsewhere in Britain. The species, discovered in Greece in 2001 after a Europe-wide study of bat population ecology and genetics, is a native of continental Europe but it was thought that the English Channel was acting as a natural barrier to its spread to the UK. Researchers believe the bat has not been identified before because its appearance is so similar to other species.

For more information go to: http://www.leeds.ac.uk/news/article/786/bat_species_discovered_for_the_first_time_in_uk

Garden Preferences

A recent study published in *Animal Behaviour* suggests that urban hedgehogs prefer certain types of gardens. Hedgehogs (*Erinaceus europaeus*) in Bristol were radio tracked and their nocturnal movement patterns analysed with surprising results. Hedgehogs prefer to use the gardens of semi-detached and terraced houses but only females, not males, avoided the gardens of detached houses which are favoured by badgers. It is thought that differences in reproductive behaviour between the sexes could account for this variation in avoidance of predation risk. Hedgehogs were also found to avoid foraging near roads but didn't necessarily avoid crossing roads. The study also found a significant increase in hedgehog activity after midnight which would coincide with the reduced risks associated with human activity. This was found to be true even on warmer nights when invertebrate prey would be more abundant. Clearly the risk posed by human activity must be significant to reduce hedgehog activity levels despite the favourable conditions. It is, however, important to consider that patterns of activity differed between years as did the area ranged and further study will be necessary. Dowding, C.V., Harris, S. and Baker, P.J. (2010) Nocturnal ranging behaviour of urban hedgehogs, *Erinaceus europaeus*, in relation to risk and reward *Animal behaviour*. Available online 20 May 2010.



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Mammal MATTERS



Photo © CPRE



Marina

Marina Pacheco
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“I’d like to thank everyone who took part in the Spring season of the National Small Mammal Monitoring Scheme.”

This Summer’s issue has its usual enjoyable mix of eclectic articles including a discussion of the Scottish wildcat on page 8 and the work being done on polecats by the Vincent Wildlife Trust on page 10. Whilst on page 21 we have an article from Pembrokeshire Against the Cull on the badger cull taking place in Wales. Sadly the badger cull debate continues with the Welsh Assembly Government still threatening a cull and our new coalition government promising to do the same in England despite DEFRA’s advice to the contrary.

We in the conservation world are also waiting anxiously to see what this new government will do for the environment.

The fact that DEFRA is one of the departments that faces a large spending cut is worrying. DEFRA supports Natural England who in turn will face budget cuts and an uncertain future as a quango. The Mammal Society will continue to support environmental quangos as the critical friends we have always been. We don’t always agree with what Natural England does, but there can be

no denying we need both their expertise and their continued advice to government.

In this new era of belt tightening it will be down to us as individuals and special interest groups to do all we can to further the understanding of mammals and ensure their conservation. This is why it is always a pleasure to read about the activities of local mammal groups such as those on page 18. Local groups really are the mainstay of conservation and The Mammal Society is working to support them more in the future. Consultants are also at the coal face of conservation and provide a vital link between conservationists and industry. We reserve a section of Mammal News for local groups and consultants so if you would like to contribute your thoughts on local issues or an interesting consulting conundrum or information exchange please do get in touch.

The Mammal Society is very pleased to announce that our president Derek Yalden has been awarded the 2010 Linnean Medal for Zoology in recognition of his outstanding contributions to many aspects of zoology.

I’d like to thank everyone who took part in the Spring season of the National Small Mammal Monitoring Scheme. We will publish results from the spring and autumn 2009 surveys in our next issue. Thanks to a kind donation from one of our members we now have the funds for the DNA analysis which will be added to the results. We are also busily editing the handbook, based on volunteer feedback, to make it easier (hopefully) to use. We are now looking forward to the autumn season and I hope more of you will be keen to take part in what is turning into a very interesting monitoring exercise.

On a final note, some of you may already be receiving our new monthly e-bulletin which aims to keep everyone informed on the latest happenings in the mammal world as well as giving updates on courses and events at The Society. If you would like to be added to our mailing list please do send us an e-mail at enquiries@mammal.org.uk.

Marina Pacheco

Note from *The Editor*

Greetings readers. With the long summer evenings, there could not be a better time to be out and about mammal watching. I am delighted with the range of exciting ideas to encourage you to get involved with observing and supporting mammals in this issue. Within its pages you will find invitations to assist with mammal surveys, support fund raising events, attend educational meetings, join local mammal groups or dust off that SLR and submit an image in our photographic competition. We would also love to hear tales of what inspired, amazed or confounded you as your summer mammal-watching progressed, so please send in your anecdotes for the next issue.



Dr. Marian Bond
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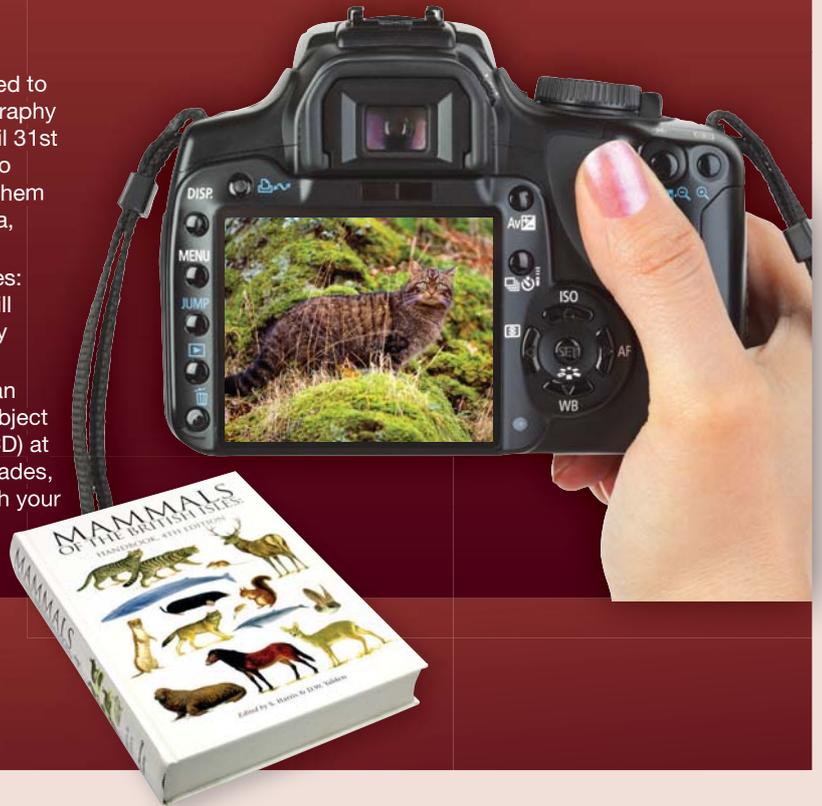
Mammals in the Spring Competition – *Deadline extended*

Spring was particularly colourful this year so we have decided to extend the deadline for our 'Mammals in the Spring' photography competition, launched on the website earlier in the year, until 31st July 2010. British mammals can prove to be rather difficult to photograph so we've set you all the challenge of capturing them on camera. Don't worry if you're not a whizz with the camera, we're looking for originality!

The winner will receive a copy of *Mammals of the British Isles: Handbook*, 4th Edition worth £60! Three lucky runners up will receive their choice of publication from The Mammal Society series, subject to availability.

Up to three photographs can be sent per participant. You can email them to us at enquiries@mammal.org.uk with the subject 'Mammals in the Spring' or post them to us (preferably on CD) at Mammals in the Spring, The Mammal Society, 3 The Carronades, New Road, Southampton, SO14 0AA. Please provide us with your full name, address and telephone number.

Get outside and get snapping!



The winner will receive a copy of *Mammals of the British Isles: Handbook*, 4th Edition worth £60!

Multitasking for Mammals

This summer I thought I'd try something different. My parents are very keen walkers and suggested I go with them on a walk along the pilgrim's route from the North of Portugal, along the Atlantic coast to Santiago de Compostela. This sounded like fun and I was describing the plan enthusiastically to anyone willing to listen in the office when a voice piped up, "why don't you make it a sponsored walk?".

The idea appealed instantly to all of us, as we spend quite a bit of time in the office coming up with ways to both save, and raise, money for The Society. It will also give me some additional motivation for the walk and things to do whilst walking as I store up anecdotes to report back to everyone upon my return. So, no sooner suggested than done. Laura announced it via our new e-bulletin and we started getting donations almost immediately.

We had thought about setting up a 'Just Giving' page for this walk, which was mentioned in the e-bulletin, but to do that The Society would have to set up an account at the cost of £15 a month to be able to receive the money. So we've decided to stick with donations made

via our own web site. If you would like to sponsor my walk, please do go to our donations page at www.mammal.org.uk

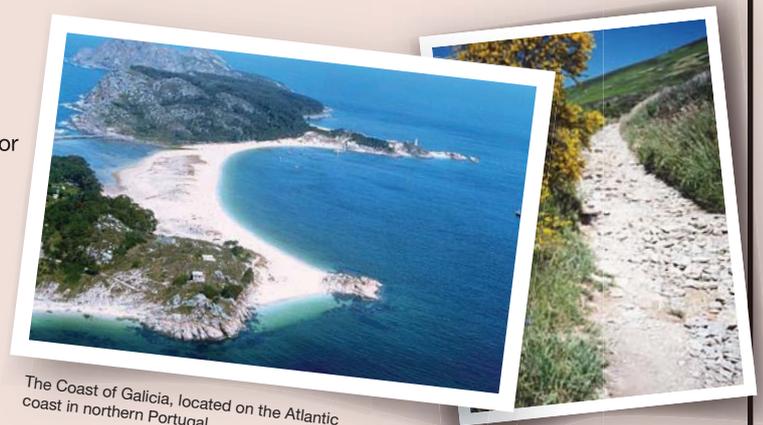
You are given the opportunity to add a note to the donation to let us know what it is for.

My walk is a small one, nothing like Nat Severs, who we mentioned in Spring's Mammal News who is walking the whole of Great Britain, but I hope it will do something to raise funds for The Society, and get people thinking about innovative ways in which we can increase our income. We keep being warned that major funding cuts are on the way for all sectors and the environmental sector will certainly not escape those so we'll all have to get more creative about how we raise funds. If you have any bright ideas yourself, don't be shy,

head out and do it or contact us to let us know what we should be doing.

The sponsored walk isn't our only plan. We are also considering an annual raffle as a way to hopefully raise funds for both ourselves and local mammal groups and we will be doing a membership drive in the autumn to increase both income and, more importantly, the number of people actively engaged in mammal conservation.

Marina Pacheco



The Coast of Galicia, located on the Atlantic coast in northern Portugal



The Mammal Society *e-bulletin*

Subscribe to our new regular e-bulletin today to get the latest mammal news from across the British Isles, and keep up to date with our activities, surveys, new publications, training and events.

Simply email enquiries@mammal.org.uk with your name and email address. Alternatively, visit the News section on our website and click to subscribe.

mammals



Royal Mail

Action for British Mammals – Royal Mail issues mammal stamps

In April 2010 the Royal Mail highlighted vulnerable British mammal populations with the release of a special set of first class stamps. The Mammals (Action for Species) stamps have been issued as part of worldwide celebrations for the International Year of Biodiversity in 2010, with which The Mammal Society is very much involved. *“Many are enthused and inspired by imagery of these creatures”* said Paul Wilkinson of The Wildlife Trusts *“but some may not be aware of the work which goes on behind the scenes to ensure there is adequate and suitable habitat for them.”*

The collection, Mammals, is the fourth in Royal Mail’s Action for Species series which previously featured birds, insects and plants. Julietta Edgar of the Royal Mail said the images were designed to deliver *“an important conservation message through millions of letter boxes”*.

The BBC also created an audio slideshow on their news website with narration by The Mammal Society Chief Executive, Marina Pacheco. Britain and its coastline are home to more than 60 species of mammals and while many are thriving, others have seen their populations decline.

The collection of 10 beautiful stamps feature different British mammals of conservation concern, namely: the humpback whale, water vole, wildcat, greater horseshoe bat, brown long-eared bat, otter, polecat, dormouse, sperm whale and the hedgehog.

Please remember to use these stamps on your letters to help raise awareness of the plight of many of our mammals today.



The Mammal Society Autumn Symposium

New techniques in mammal research
26 – 27 November 2010

The Meeting Rooms, The Zoological Society of London,
London Zoo, Regents Park



This special two-day meeting will explore new techniques in mammal research focusing on four key themes: population genetics, population monitoring, movement and behaviour. Our speakers are world leaders in using and developing new technologies and techniques in these areas. We will cover a huge range of new developments from the latest in DNA analysis, camera trapping, ultrasonic bat detecting, stable isotopes, accelerometers and RIFID tags to monitor humans with mobile phones.

See the website for further details (www.mammal.org.uk) or email enquiries@mammal.org.uk, tel: 02380 237 874.



Delegate's fee (includes morning and afternoon tea/coffee and Friday evening wine reception): £58/£78 per day (members/non members), or £105/£145 for both days. Accommodation is not provided for the Autumn Symposium.

Easter Conference

First Call for Papers

The Mammal Society's 2011 Easter Conference and AGM,
University of Nottingham, 15 – 17 April 2011

To present a paper or poster, send the Scientific Programme Coordinator the following details:

- Title of presentation
- Author's name and address
- An abstract of no more than 150 words

Please indicate whether your presentation is a paper or poster.

Electronic submission by email is preferred and the deadline is 31 October 2010.

Five Michael Woods bursaries, each worth £50, are available to student members who present a paper; there is also The Acorn Ecology Prize of £250 for the best student paper and The Merlin Prize of £100 for the best student poster.

Details about student bursaries, prizes and the required format for abstracts are available on The Mammal Society website (www.mammal.org.uk) or from the Scientific Programme Coordinator. Check the website for further details.

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The Mammal Society Easter Conference & AGM – 26–28th March 2010

Once again this year I had the privilege of attending The Mammal Society Easter Conference. This event always promises interesting talks and informative posters, with time to catch up with fellow researchers and mammal enthusiasts and put faces to names, and this year was no exception. This year's conference was held at Bangor University, shadowed by the still snow-capped Snowdonia Mountains, with interesting and informative talks covering a variety of subjects, including behaviour, census data, territory size and movements, parasites, rodenticides, reintroductions and predator-prey interactions. With a break of a couple of years since my university days, it felt wonderful to get out of the office and back in to the lecture theatre.

The conference began with the 25th Cranbrook Memorial Lecture, given by Dr. Peter Evans from Bangor University on the topic of the conservation biology of bottlenose dolphins (*Tursiops truncatus*) in Wales. From population estimates and individual identification, the seasonal movements of the dolphins, as well as their use of the Cardigan Bay Special Area of Conservation has been assessed. It was wonderful to see the huge amounts of time and effort put in by Dr Evans and the Seawatch Foundation to find out such interesting data about this charismatic species.

There were a few highlights from the talks for me, the first being John Lusby's presentation on the greater white-toothed shrew (*Crocidura russula*) in Ireland. The first evidence of this species in Ireland was from skeletal remains found in barn owl (*Tyto alba*) pellets. This method has since been used to map the distribution of different small mammal prey species in Ireland, and assess the impact of the introduction of the greater white-toothed shrew on its predators.

Another topic of great current interest was the latest management options for the Bovine TB and badgers situation. The informative talk given by Robbie McDonald, highlighted the work done by FERA and its partners on biosecurity and vaccination. Large-scale experiments using different technologies to keep the badgers out have

been effective in reducing contact with cattle. Also, clinical field trials have been conducted on TB vaccination and badgers could be receiving this vaccine soon, a strategy similar to giving BCG vaccinations to humans, to help control the disease. Big cat sightings in Britain are quite a controversial subject and when naming large British mammals, the 'big cat' is not one usually listed. Rick Minter gave an excellent talk on this subject, presenting some extraordinary photographs and accounts of sightings. Rick is continuing to compile evidence to answer such questions as "which species are present?"; "what are the characteristics of their territories?"; "what do they prey upon?"; "what are the implications of having big cats wild in the countryside?". Budding researchers of the future were in evidence at the conference, with the student recipients of this year's Michael Woods Bursary (formerly the Raffle Bursary) presenting the findings of their research. The topic range was impressive, covering: 'Crops of the perennial grasses *Miscanthus x giganteus* and *Phalaris arundinacea* benefit small mammals' by Jenny Clapham of Cardiff University; 'Factors affecting the exposure of predatory mammals to anticoagulant rodenticides and the influence of prey guild size' by David Tosh of Queen's University Belfast; 'Natal movements of a harvested mammal: mountain hare leverets in Scotland' by Annabel Harrison of The Macaulay Institute, Aberdeen and Public perception of wild boar (*Sus scrofa*) in the Forest of Dean by Hayley Clayton of Hartpury College.

The student prize winners were Rebecca Thomas of the University of Reading who won the Acorn Prize for the best student poster concerning 'What the cat brought in – could domestic cat predation be reducing urban bird populations?'; whilst Isabel Barrio of the University of Córdoba, Spain, another Michael Woods Bursary recipient, won the Merlin prize for the best student presentation of her paper on 'Responses of wild rabbits to native and non-native mammalian predators'.

The last talk of the weekend was given by Derek Yalden on Atlasing for Mammals in the

British Isles (all of them!). Derek emphasised the importance of having an up-to-date mammal atlas for all the species, for all of the British Isles. Atlasing is regularly done for butterflies and birds, but the last Mammal Atlas was compiled in 1993. With so much mammal knowledge now available, a new complete atlas could be compiled.

Saturday evening's conference dinner gave more opportunity for catching up and meeting new people, as well as for the awards ceremony. Richard Shore was presented with 'The Mammal Society Medal' for his outstanding services to Mammalogy. Adam Grogan was voted in as the new Vice Chairman on the council as Paul Chanin retired, and Liz Chadwick has taken over from the retiring conference secretary, Steve Carter.

At the end of the conference presentations, delegates could also enjoy one of the two field excursions arranged for the Sunday afternoon. Craig Shuttleworth led one excursion to Newborough Forest on Anglesey. Craig gave a talk on the restoration work and re-introduction of red squirrels (*Sciurus vulgaris*) during the conference, so this gave a chance for delegates to see the site, and some of the squirrels, first-hand. The other excursion was led by Rod Gritten to Snowdonia National Park, where participants could benefit from his knowledge of the park, go for a hill walk and spot the wild goats. Both excursion groups spotted their target species, making a fantastic end to the conference.

It is wonderful to spend time in the company of a group of people which such similar passions and interests. As a relative newcomer to The Mammal Society, I have been very warmly welcomed. Huge thanks go to Rowena Staff and everyone else who helped make the conference such a thoroughly enjoyable event. I look forward to next year's conference at the University of Nottingham on the 15-17th April 2011.

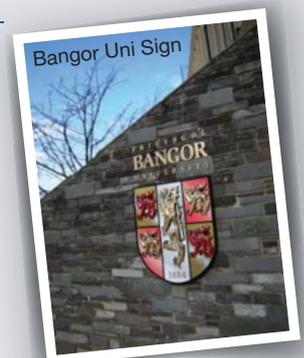
Sarah Levett,
Biotrack Ltd



Conference Dinner by Laura Drake



Derek Yalden presenting Richard Shore with The Mammal Society Medal. Taken by Laura Drake



The Cairngorms Wildcat Project – Saving the Highland Tiger

Dr David Hetherington, Wildcat Project Manager
Cairngorms National Park Authority, www.highlandtiger.com

The wildcat (*Felis silvestris grampia*) is one of Scotland's most iconic and evocative species. Its legendary reputation for fierceness and independence saw it adopted by a variety of Highland clans in their badges, particularly those in the Clan Chattan federation (which includes the MacPhersons, Davidsons and Mackintoshes), with the motto 'Touch not the cat bot a glove' ('bot' meaning without) – a stern warning to anyone threatening Clan Chattan or its members.

Despite this, wildcats and people have had a chequered history together. Although we are accustomed to thinking of the wildcat as a Scottish beast, it was once found all over Britain. Deforestation and overhunting of the species for its warm, winter fur saw it become extinct in lowland England long before 1800. The nineteenth century saw a steep rise in predator control and by 1860, wildcats were wiped out from the rest of England, Wales and southern Scotland. Despite intense persecution on many Victorian shooting estates (e.g. according to the estate vermin list 198 wildcats were killed between 1837 and 1840 on the Glengarry estate alone) wildcats clung on by their claws only in some quieter parts of the Highlands.

From a low-point in the early twentieth century, the wildcat began to recover lost ground, taking advantage of reduced gamekeeping pressure and newly planted woodlands after WWI, and apparently recolonised much of Scotland north of the Central Belt within two or three decades. However, the picture for the wildcat was not as rosy as it seemed. Its recovery was partially achieved through hybridising with the closely-related domestic cat. In theory, hybridisation could have been occurring for two or three millennia but probably became a much more acute issue when wildcats were reduced to very low numbers in widely scattered pockets. Scientists believe that hybridisation, if left unchecked, will soon finish off the Scottish wildcat by basically turning it into a moggy, less well adapted both physically and behaviourally to a wild existence in the rigours of the Scottish Highlands, and certainly not the animal that the clans admired and chose to represent them.

Last year the Cairngorms National Park Authority, Forestry Commission Scotland, Royal Zoological Society of Scotland, Scottish Gamekeepers Association and Scottish Natural Heritage joined forces in a partnership to conserve the Scottish

wildcat in one of its strongholds – the Cairngorms National Park. The aim of the Cairngorms Wildcat Project is to raise awareness of the plight of the wildcat and tackle the threats that wildcats face – hybridisation, disease and inadvertent killing during predator control.

Awareness-raising and stimulating public enthusiasm and interest are key to every aspect of the Project's work, and so we have adopted an eye-catching awareness-raising brand, 'Highland Tiger'. Wildcats have been rather overlooked and forgotten over the years, and for the sake of their successful conservation it is important that people are reminded that we still have this special animal living in our country and that it needs our help if it is to avoid extinction. As a result of this and other initiatives such as the Scottish Wildcat Association, wildcats have started to appear on everyone's radar again.

We have teamed up with Cats Protection and local veterinary practices to encourage responsible cat ownership in rural areas where wildcats could occur. Basically, we would like to see more owners getting their cats neutered and vaccinated. The local vets feel that many of the unneutered and unvaccinated cats in the National Park are

farm cats which perform a useful function for farmers of controlling mice and rats. The vets have agreed to act as unofficial ambassadors for the Project during their farm visits, by encouraging farmers to have all cats on the farm neutered. In order to maximise take-up, Cats Protection have offered to trap the cats, take them to the vets for neutering and return them to the farm. This way farm cats can continue their pest control function, but without posing a direct threat to wildcats through interbreeding, or more indirectly by acting as sources for populations of feral cats to spread into the wider countryside. We're also aiming to intensify and expand the current neutering of feral cat colonies around settlements so that numbers can be kept under better control. This should benefit other wildlife, such as ground-nesting birds, and helps gamekeepers to feel that the Project is also doing something useful for them.

We organised a workshop for local gamekeepers to let them know what the Project was doing, to explain the finer points of wildcat identification, but also to pick their brains on how best the Project could work with estates. It was clear from the turn-out and tone of discussion that many keepers have a genuine interest in wildcat conservation. The main messages coming from those in attendance were that wildcat conservation does matter and that meaningful engagement by the keeping profession in helping to save an iconic Scottish species from extinction will improve the public image of the profession, so often tarnished by cases of illegal raptor persecution. There was also strong agreement that the Project should be promoting and delivering a responsible cat ownership message across the Cairngorms National Park.

We are now working with gamekeepers from several estates across the National Park to ensure that their predator control activities are wildcat-friendly and that their considerable experience can be harnessed to help us monitor both wildcat and feral cat populations. They provide invaluable information on wildcat distribution, behaviour, habitat use and population trends on their estate and report sightings to the Project. Unlike many other species, field signs are not as reliable for detecting wildcat presence. Footprints, feeding remains, den sites, faeces etc. are all indistinguishable from feral cats and hybrids which can occur even in remote upland areas. Consequently the Project has deployed motion-activated

camera traps across the National Park, as the resultant photos not only provide invaluable information on cat presence, but also from study of coat patterns, allow wildcats to be identified with greater confidence. Gamekeepers on participating estates assist with camera-trapping, recommending the best sites to maximise chances of getting wildcat photos, and in some cases regularly checking and baiting them. Photos of wildcats, hybrids and ferals (and indeed all sorts of wildlife from pine martens to golden eagles) have been taken by the camera traps. This is very useful information and helps us to build up a better understanding of how cats use the landscape and the extent of hybridisation.

By making good use of the expertise and enthusiasm of vets, cat welfare workers, the general public, and those who work the land, we should develop both a clearer understanding of the status of the wildcat in the Cairngorms National Park, and a blueprint for its conservation which can be rolled out to the remainder of its Highland range. If everyone pulls together, we can save the tiger of the Highlands from extinction.

You can find out more about wildcats, keep up-to-date with Project progress, report sightings and donate to the wildcat conservation fund by visiting www.highlandtiger.com.



A Scottish wildcat attracted by pheasant bait to a camera trap in the Cairngorms National Park.
Photo by: Neil Anderson.



Photo by: Colin McClean,
Glen Tanar Estate.
A golden eagle snapped feeding on dead deer on the Glen Tanar Estate in the Cairngorms National Park.

Why did the polecat cross the road?

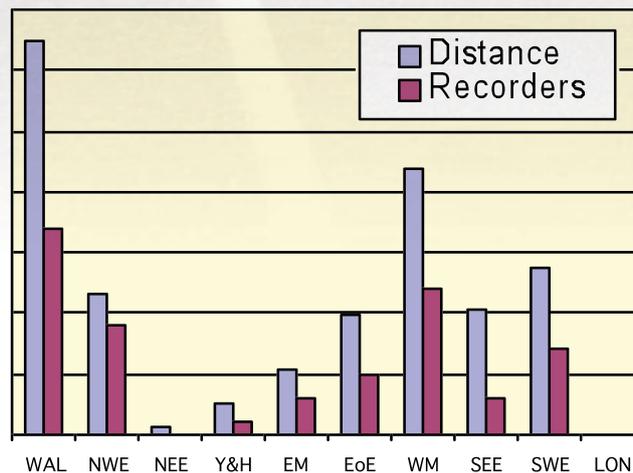
John Messenger,
The Vincent Wildlife Trust
johnmessenger@vwt.org.uk

The Vincent Wildlife Trust has been running its **Polecat and Mink Abundance Monitoring Project** since 2002 and is currently planning the eighth monitoring season. I am sure that some of you will have taken part in this in the past, but for those of you who have not, this project involves recording road casualty (and live) polecats and mink that are spotted on the road during normal driving. The only other data needed are the distances driven by the recorder during the recording period as a measure of 'search effort'. It all sounds quite simple, doesn't it? Well essentially it is. The great advantage of this approach is participants can collect really useful data just by going about their ordinary business in their cars – no extra travelling is required. This means that we can have tens of thousands of miles of road 'surveyed' but the project has a very low carbon footprint.

Initially the project covered two months annually, September and October, but last year we reduced this to a single month, which makes it even less onerous for recorders. We've also tried to 'streamline' a few other aspects of the survey method to make it even easier.

So what have we learned about polecat and mink abundance so far?

The results of the 2009 survey were very interesting, with both Wales and the west Midlands showing quite spectacular increases in the polecat index (polecats per 5,000km), almost doubling from the previous survey. Very encouraging signs were also obtained from Yorkshire & Humberside and the east of England, although the results



Polecat. Photo by: Frank Greenaway.

Fig 1: Variation in observer effort (kms driven and no. recorders) during 2009 across the 10 regions (see key in table 1)

would have been more robust had we had more recorders. Totals of 104 polecats and 20 mink were recorded over a staggering 108,641 kilometres (67,506 miles) of driving. Download the full results summary at: <http://www.vwt.org.uk/downloads/Polecat%20abundance%20monitoring%20Report%202009.pdf>.

The need for recorders

This method really can 'produce the goods' as long as we can get enough recorders to take part so that sufficient data are collected. The more recorders we have the more robust the data. Last year we were very short of recorders in all areas of Britain, with the possible exceptions of Wales and the west Midlands (although we would welcome more help in these areas too). To give you some idea, we had over 150 recorders in 2002 and last year we had only 53. Ideally we would like to have around 200 recorders spread reasonably evenly over Britain.

Table 1 – Region codes

WAL	Wales
NWE	North-west England
NEE	North-east England
Y&H	Yorkshire & Humberside
EM	East Midlands
EoE	East of England
WM	West Midlands
SEE	South-east England
SWE	South-west England
LON	London

It seems that we get most interest where polecats are most common and so most likely to be found, which is perhaps not surprising. However, we must get more support, especially in areas into which polecats are expanding. Last year, with only one recorder based in Scotland, we took the

decision to stop recording in this region but we would really like to start again in 2010 as we believe polecats are present following reintroductions. Also new for 2010 is a plan to include stoats and weasels in the survey. The survey runs from 15th September to 15th October and any days you can record during this period will count, so don't worry about holidays etc. We are also looking at ways to measure changes in other factors that can affect our results, such as changing traffic density.

Can you help?

The VWT is very fortunate in having top-quality volunteers helping with this project and we would welcome your support. So what would you get out of this? You would have the satisfaction of knowing that you were contributing to a valuable, low-carbon survey that is beginning to show real trends in polecat and mink abundance. If that nice warm feeling isn't enough then you also you get a free VWT publication! Please contact John Messenger jmessenger@vwt.org.uk to volunteer or for more information. Oh, and the answer to the question posed in the title? To try to get away from the smell! We look forward to hearing from you.

More information about The Vincent Wildlife Trust can be found at www.vwt.org.uk.



Tame true polecat in summer pelage. Photo by: Johnny Birks.



Polecats in log. Photo by: Johnny Birks.



Polecat. Photo by: Peter Gasson.



Mammal Notes

Mammal notes are short communications on any aspect of research on European mammals. Articles that describe and evaluate new mammal research techniques are particularly welcomed. For further details of how to submit an article please go to our website:

www.mammal.org.uk

Fig. 1. Badger eating yew berries on the path at Kew
Photo by: Peter Gasson.



How do badgers eat yew 'berries' without being poisoned?

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Introduction

Badgers are opportunistic omnivores with a very broad diet. They are increasingly common at the Royal Botanic Gardens, Kew, having originated in Richmond Park and entered the gardens in the early 1980s at the southern end. Neal (1948) mentions "one reported at Kew recently", so there appears to have been an absence of nearly 40 years. Badgers have since inhabited most of the gardens with at least 24 'setts' reported by 2005 (Martin 2005).

Two almost adjoining setts, which have expanded in the last few years, are between the Jodrell Laboratory and Orangery. Most of the surrounding vegetation consists of exotic shrubs and grass, but there are several large yew trees (*Taxus baccata*) which fruit profusely. Badgers are very active in this area and can be watched in the autumn eating yew 'berries' from the paths (Fig. 1) and standing on their hind legs to reach the 'berries' on the trees.

Yew fruits are not strictly berries, but a naked seed sitting on a fleshy, sweet, red-coloured mucilaginous appendage called an aril. Yew is one of Britain's most poisonous plants, but many animals, including badgers (e.g. Neal & Cheeseman 1996; Thomas & Polwart 2003), are known to eat the fruits.

The leaves and seeds of yew contain toxic taxine alkaloids, and horses and other livestock are frequently poisoned by eating yew leaves. However, taxine alkaloids are not present in the red arils. Our observations on the Kew badgers indicated that they were eating the entire fruits and these were passing through the badger's system, as evidenced by dung pits full of faeces containing the remains of yew arils with intact seeds within a few metres of the yew trees and setts (Fig. 2).

We took this opportunity to compare the alkaloids in the seeds from fruits on the tree and from seeds that had passed through a badger.

Methods

An analytical method using liquid chromatography-mass spectrometry (LC-MS) has been developed by Kite *et al.* (2000) to detect taxine alkaloids. Seeds from fruits picked from the yew tree and badger faeces were ground in methanol in a pestle and mortar and left to extract overnight. The extracts were clarified by centrifugation and adjusted to the same concentration (so that 1 ml of extract contained the compounds extracted from 50 mg of seed) then analysed by LC-MS. The arils of the fruits from the

tree were also extracted and analysed in the same way.

Results

The abundances of the chemicals extracted are shown on the traces (Fig. 3). It is clear that the concentration of the main alkaloid in the extract of seeds before (ingestion) and after (ingestion) is similar, as are the concentrations of taxine B-type alkaloids, although there were some differences in the abundances of other alkaloids. No alkaloids were detected in the arils, which are universally accepted as being non-poisonous. The results indicate that there is no major loss of alkaloids from the seeds as they pass through the badger's gut.

Discussion

Although we do not have any replication, do not know how many badgers (possibly only one!) have contributed to this experiment and cannot be absolutely certain that the fruits came from the tree sampled, this opportunistic observation does suggest that badgers can eat yew 'berries' with impunity, with most of the toxic alkaloids being retained in each unbroken seed surrounded by its mucilaginous aril as it passes rapidly through the gut.



Badger cub.
Photo by: Peter Gasson.

References

Kite, G.C., Lawrence, T.J. & Dauncey, E.A. 2000. Detecting *Taxus* poisoning in horses using Liquid Chromatography/Mass Spectrometry. *Veterinary and Human Toxicology* 42(3): 151-154.

Martin, F. 2005. Badger survey, RBG Kew, May to July 2005.

Neal, E. 1948. *The Badger. New Naturalist Monograph*. Collins, London.

Neal, E. & Cheeseman, C. 1996. *Badgers*. T. & A.D. Poyser.

Thomas, P.A. & Polwart, A. 2003. Biological Flora of the British Isles No. 229: *Taxus baccata* L. *Journal of Ecology* 91: 489-524.

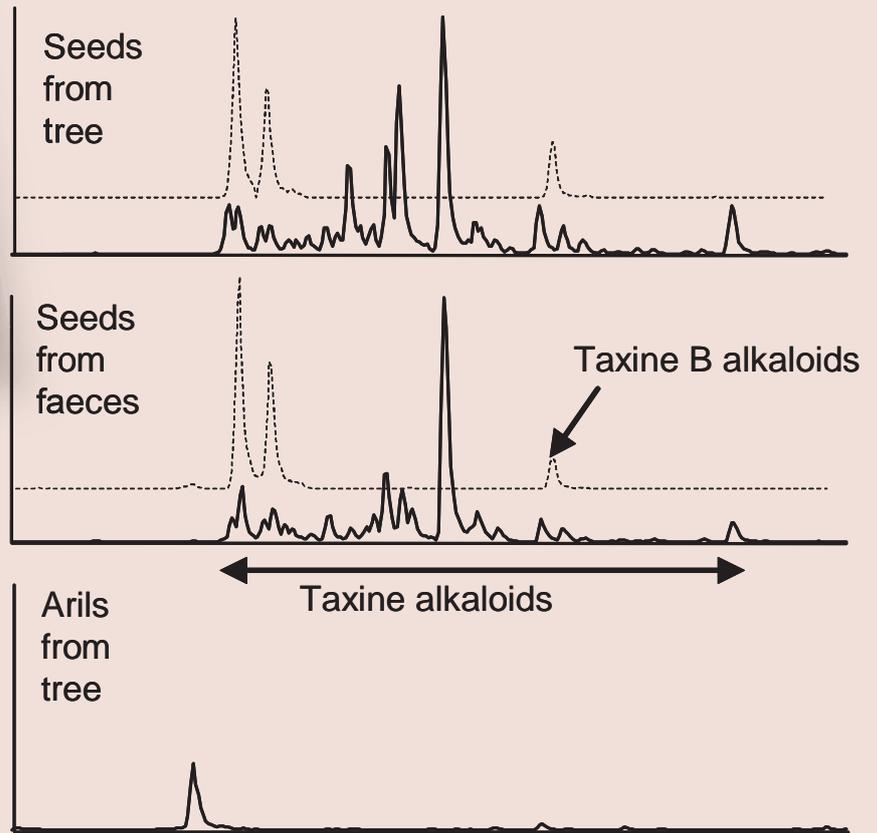


Fig. 3. LC-MS (liquid chromatography-mass spectrometry) traces comparing the chemicals present in the yew seeds before and after passing through the badger, and yew arils. Solid lines are all compounds detected (most peaks in the seed traces within the range indicated, including the biggest, are taxine alkaloids); broken lines are specifically taxine B-type alkaloids. All samples were analysed at the same concentration.



Fig. 2 Badger dung pit full of partially digested yew 'berries'.
Photo by: Peter Gasson.

Why did Scotland's Reindeer survive?

Tilly Smith

info@cairngormreindeer.co.uk

Reindeer (*Rangifer tarandus*) were once common in Great Britain, with records of their presence found in Kent (9760BP), Yorkshire (9750 BP) and the Pentland Hills (9710 BP). The lack of archaeological evidence after these early dates suggests that unfavourable changes in the climate and vegetation caused their extinction and that, contrary to popular myth, they did not survive into the 12th century in Great Britain to be hunted by the Vikings.

In the present day, reindeer naturally occur throughout the arctic and subarctic areas of the northern hemisphere, distributed across the northern boreal forest, arctic tundra and high arctic islands. They exist both in the wild form in Alaska and Northern Canada, where they are called Caribou, and – mainly in the domesticated form – throughout Russia and North Scandinavia. For thousands of years indigenous people have lived in these hostile areas with reindeer as their mainstay, raised for their meat, hides,

antlers and used for transportation and as dairy animals.

In 1947 a Swedish Sami^[1], Mikel Utsi, visited the Highlands of Scotland and was immediately struck by the similarities with his homeland Swedish Lapland. He was particularly inspired by the landscape of the Cairngorms, the gentle slopes rising to high arctic plateau, deep glaciated valleys and most importantly the presence of lichen or 'reindeer moss'. So it was that in 1952 Mikel Utsi and his anthropologist wife, Dr Lindgren, managed to woo "the powers that be" and imported reindeer from Mr Utsi's own herd to the Scottish Highlands.

The first small group of reindeer arrived on the Rothiemurchus Estate beside Aviemore in the spring of 1952. This was on low ground, part of the famous Caledonian Pinewoods of Rothiemurchus to the north of the Cairngorm massif. Although suitable as a temporary home, Mr Utsi always aimed to get the reindeer up into the Cairngorm mountains. Within two years his wish was fulfilled and his small herd of reindeer, along with subsequent introductions became the nucleus of the herd that still roams the Cairngorms today.

The Cairngorm Reindeer Herd, although managed, is, for the majority of the year,

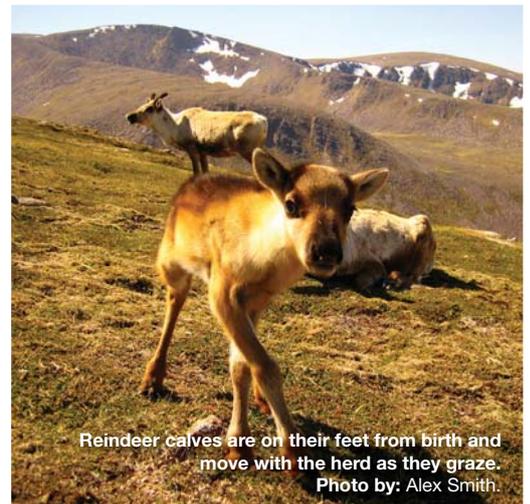
free ranging in the mountains. During the summer months the cows with their young calves head to the higher ground where they browse on the arctic flora found at that altitude.

Autumn arrives on the high ground first and, with the browning of the vegetation in August, the cows and calves head to the lower slopes of the Cairngorm range where they actively seek boletus mushrooms, a real delicacy for reindeer and an excellent source of nutrition prior to the onset of winter.

Reindeer feast in summer and fast in winter. By continuously eating during the long summer days they are able to put on body fat, grow antlers and prepare themselves for the long arduous winter. Their preferred, indeed virtually only food source during the winter months is lichen, mainly ground species but also tree and rock lichens as well. Lichen is a survival food. Reindeer will not lay down fat on it; indeed over the winter reindeer will steadily lose condition and can be quite thin by winter's end. However, despite its relative nutritional poverty, lichen will continue to grow even under a thick blanket of snow and reindeer will dig many feet through the snow to find a morsel of it. Winter is truly a time of sheer survival. Although the Cairngorm reindeer



These magnificent antlers will help to ensure this bull is "top dog" in the rutting season.
Photo by: Alex Smith.



Reindeer calves are on their feet from birth and move with the herd as they graze.
Photo by: Alex Smith.



Winter survival: This is what reindeer are supremely adapted for.
Photo by: Alex Smith.

are not experiencing quite the same arctic conditions as many of the reindeer and caribou found in the Northern hemisphere, this last winter was a good example of the harsh conditions they are able to cope with. The Cairngorm reindeer have survived in the 'winter wonderland' for 3 months while the native red deer and roe deer have suffered, with large numbers found dead through starvation and cold.

As I write the calving is imminent, with the young born during the month of May. Reindeer normally have a single calf which is unspotted, very precocious and

Reindeer are the only deer species where both the males and females grow antlers.

supplementing the rich mother's milk with grazing within a few days of birth. They weigh anything between 10 to 15 lbs when born and within 3 weeks start to grow their first set of antlers. The calf coat is shed at about 3 months old when the first adult coat grows in. Thick coat, antlers and good fat reserves are all necessities to see a calf through its first winter.

Reindeer are the only deer species where both the males and females grow antlers. By calving time the males are already showing significant new growth and will sport a full set by the middle of August. The females in comparison will often still have their old boney antlers when they calve and new growth will coincide closely with spring and a plethora of good grazing. Their smaller but equally effective antlers will not be fully grown till the middle of September.

The males grow their antlers for one reason only and that is for the rutting season. As weapons and ornaments the bulls both display and fight to gain a harem of cows in the rut. Body strength, antler size and guile all help to make a bull 'top dog'. Once the rut is completed the antlers of the most mature bulls fall off and these bulls remain antlerless for the duration of the winter. The antlered cows and calves

as a result have a distinct advantage over the bulls during the long winter and very successfully defend food sources over the harshest times of year.

The Cairngorm reindeer herd is a great opportunity to experience an animal in its natural environment. Unlike a zoo, where the animal is in a totally alien environment,

visitors to the herd can experience and understand an animal living in its own home. Regardless of the time of year there is a great herd of reindeer to encounter. So dig out your boots and jacket, head for the Highlands of Scotland and, along with a wealth of other wildlife opportunities up here in the North of Scotland, come and enjoy a day with the Cairngorm Reindeer Herd.

For information on the Cairngorm Reindeer Herd:

Tel: **01479861228**
Email: **info@cairngormreindeer.co.uk**

[i] Indigenous people of Sampi (Lapland)

Bats and bureaucracy



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Professionalism and proportionality are keys to better support for protected species

In this Year of Biodiversity 2010, and following Aidan Marsh's excellent article in the last issue of Mammal News, we would like to share our aspirations for an improved framework for the conservation of protected species, particularly in relation to bats and other mammals.

The fundamental mechanism for achieving this is via better support for Local Planning Authorities (LPAs) and the Statutory Nature Conservation Organisations (SNCOs), and not the funding cuts that are already biting. The planning and licensing system should be designed to serve conservation, not the other way around. LPAs and SNCOs have crucial roles in biodiversity conservation, but they cannot effectively deliver them without employing high quality ecologists with an in-depth understanding of the context in which biodiversity battles can be won and lost.

In particular, we would like to make a plea for greater proportionality in European Protected Species (EPS) mitigation licensing. Large developments are currently dealt with at an appropriate level: a full suite of surveys, a detailed impact assessment and full mitigation/compensation proposals. This is right and proper. However, many smaller and lower impact schemes are made to 'tick the same boxes', resulting in a disproportionate (and unnecessary) amount of time, delay and cost to the applicant. The negative impact of this upon human attitudes is potentially disastrous for conservation. In our day to day dealings with clients, we are seeing at first hand clear and growing evidence of an increasingly antagonistic attitude towards vulnerable species and the legislation that protects them; the legislation is, in many cases, becoming counterproductive.

Conservation is dependent on goodwill. We should not, therefore, be punishing the people with good morals who try to follow the rules. How many more bat roosts will be saved if an applicant has a smooth and rapid journey through the licensing process, rather than taking several years, costing thousands of pounds, and as a result telling

all his friends about the huge nuisance caused by bats? In this scenario everyone loses, especially bats.

In the light of the above, the following is a list of a few of our specific aspirations for the future and especially this, the Year of Biodiversity.

- SNCOs and LPAs will be properly funded to enable well trained staff to have time and expertise to offer site/case-specific advice prior to the submission of licence applications or reports in support of planning applications. Constructive advice will be available from SNCOs on whether an EPS licence or a method statement is appropriate, particularly where cases are marginal. Onerous and expensive monitoring requirements for low status roosts or individual bats will be avoided; the SNCOs will provide appropriate guidance through local advice or national guidance.
- The use of the term "minded to refuse" (England only) will be abandoned; this term has the ability to anger the most placid of applicants, and we cannot see what is wrong with simply stating that an application needs amending (the system that is used in Wales and keeps all involved noticeably calmer!). Related to this, when querying decisions and recommendations made by ecologists, we would encourage LPAs and SNCOs to ask for greater clarification of the limitations to surveys and the justification for proposing a certain action before making a decision to reject the report or application. Rejections due to "insufficient information" or "inadequate mitigation" are a bitter pill for consultant and client alike (we should not forget that the client is also a bat roost owner).
- There will be a move away from the inflexible process that currently makes minor amendments to a licence disproportionately time consuming and wasteful: for example, the need to resubmit the entire application merely for a time extension with no other

changes, or for minor changes to reflect conditions only discovered on site once work commences (e.g. precise location of bat accesses) and then having to wait a further full 30 days for these to be decided. And does a barn conversion really need a location map at two different scales?

- A flexible and case-sensitive response will be made to urgent or reactive public sector schemes e.g. dangerous trees or the repair of bridges.
- Information will be gathered and shared with practitioners on how the legislation is implemented on the ground in other European countries, so that we can learn from each other's experiences.
- Consultants will be encouraged to employ good judgement to reduce the need for a full suite of surveys by using other techniques; for example, DNA analysis of bat droppings, or enhanced mitigation or compensation in cases of small numbers of bats and low conservation status roosts – thus maintaining goodwill and saving money and time for the applicant. Consultants should justify their recommendations in relation to favourable conservation status to help those reading their reports evaluate any likely impact. It should be acceptable to use "guidelines" as they were surely intended – as guidance, rather than effectively having to regard them as a set of rules.
- Planning departments will ensure that applicants likely to encounter biodiversity issues are made aware, not only of the requirements, but also of the likely processes and timescales involved before applications can be validated or approved. We still hear often of clients who have battled for months to get a planning application passed, only to be told in October they need a bat survey (which cannot then be completed until the following spring and summer). It is difficult to get any goodwill from a client when they are already frustrated before we speak to them. In order to help

Brown long eared bats, a widespread species in roofs. However, mitigation schemes for this species risk failing if external lighting is introduced or mature vegetation cleared near roost entrances. Photo by: Richard Crompton/Wildwood Ecology.

achieve this, every planning department needs access to an experienced ecologist, whether in-house or shared with neighbouring authorities.

- Consultants will maximise their exposure to focused professional development, and will bring in experienced sub-consultants for complex projects, or will not take on projects beyond their expertise. Is there scope for a higher tier of licensing which would enable the most skilled and experienced ecologists to submit faster-track applications for routine projects?
- Rather than ask “but could I be prosecuted”, consultants will feel able to ask “why would I be prosecuted” if good science and sound working practice is used to secure the best possible outcome for species and client; we should bear in mind that most clients are not intent on destroying wildlife.
- Consultants will strive to find opportunities for biodiversity enhancement within EVERY scheme.
- Greater efforts will be made to engage with the construction industry, including allied professions such as architects, engineers, and landscape architects. Whilst some are superbly aware, others still need a lot of encouragement to accept that wildlife conservation and legislation is something they must take into account.

Finally, we understand that further guidance will shortly be forthcoming from the statutory agencies on the interpretation of the disturbance and damage/destruction of roost offences, in particular in relation to the threshold for licensing. We welcome this and very much hope that it will help to realise some of the above aspirations.

As we conclude this article, the election results are about to be announced; it is going to be a bumpy year for British politics for many reasons. Let's try and keep our biodiversity targets high on the agenda by starting with our own actions.

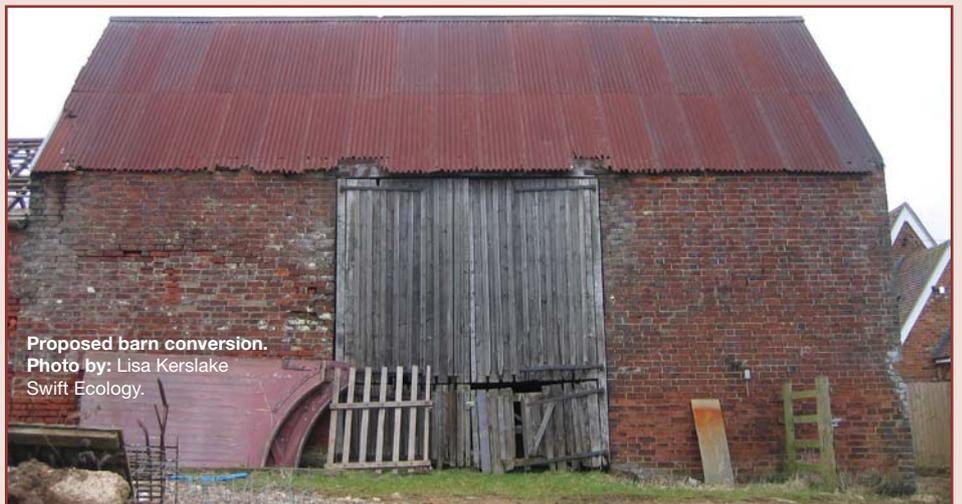
Please note: the views expressed are those of the authors and not necessarily those of their respective organisations.



Roof stripping under EPS licence.
Photo by: Johnny Birks/Swift Ecology.



Brown long-eared bats being transferred to replacement roost under licence.
Photo by: Lisa Kerslake/Swift Ecology.



Proposed barn conversion.
Photo by: Lisa Kerslake
Swift Ecology.

In pursuit of pine martens

Neil Jordan, The Vincent Wildlife Trust
neiljordan@vwt.org.uk

I'm on the road again, in 'hot pursuit'. We've received a report of a pine marten (*Martes martes*), spotted recently in a flash of headlights as it bounded, cream bib and bushy tail clearly visible, across a narrow lane in mid-Wales, before diving into and submerging itself in the darkness of the dense roadside woodland. Gone! A typically fleeting glimpse of an extremely elusive and enigmatic creature, but one that we're desperate to capitalise on. In today's world a fleeting glimpse in the headlights is no longer enough; we need irrefutable evidence, and the additional information that comes with it. We need pine marten DNA, and we're trying all sorts to get it.

So it is for that reason that I have dragged myself through the pre-dawn chill into the depths of the Rheidol Valley in mid-Wales in 'hot pursuit', and on a cold winter's morning like this it seems like a rather cruel misnomer. Nevertheless, as the red kites reel overhead, a cluster of enthusiastic and winter-proofed surveyors assemble in a remote car park in the early morning light. I'm amazed and thrilled at such support, especially at such short notice, but these are enthusiasts and this is fertile ground.

After the briefest of briefings, the hunt begins. We're searching for possible pine marten scats, and in groups of two we fan out into the woods, eyes and noses to the ground, scanning the tracks, trails and tree stumps for the gold dust of mammalogy. Traditionally, such surveys could be achieved without the need for DNA verification. Experts would confidently identify scats to species level by sight, or sometimes smell, but in 2002 The VWT called into question the accuracy of such an approach. In a study led by Angus Davison, three experienced marten surveyors were asked to collect fresh marten scats in southern Scotland, and the species producing each scat was subsequently confirmed by DNA extraction. This work was published by Davison and others in the *Journal of Zoology* in 2002 and showed rather surprisingly, that surveyors misidentified on average about one in five fox scats as pine marten. From then on, DNA typing of marten scats has become standard practice in detection surveys. Today's haul is no exception, and all of our hopes and dreams are sent off to our partners, Catherine O'Reilly and Peter Turner, at the Waterford Institute of Technology for confident realisation or robust dismissal. It's a neat blend between old techniques and modern methods, and it's reaping rewards not only in determining "the origin of faeces",

but also in determining the genetic structure and origins of current marten populations in England and Wales. It's fascinating stuff.

An immigrant invasion?

Alongside compelling sightings-based evidence of the long-term survival and reproduction of relict populations of pine martens in England and Wales, irrefutable evidence trickles in from time to time to rubber stamp their presence here. Since 1990, twelve key samples have landed on our doorstep, in the form of scats, skulls and the occasional body, all of which have been subjected to the rigours of DNA testing. Earlier results were published in 2001 by Angus Davison and colleagues in *Molecular Ecology* and by Kyle and others in *Conservation Genetics* in 2003, while more recent specimens have been subjected to scrutiny by Catherine O'Reilly and Peter Turner at the Waterford Institute of Technology. Such scrutiny includes, where possible, determination of the genetic haplotype of the individual, and this information is key in determining, or at least allowing speculation on, the origin of the animals concerned. A 'haplotype' is a group of alleles of different genes on a single chromosome that tend to be inherited as a unit. The species *Martes martes* contains individuals of many different haplotypes, and because particular pine marten haplotypes are often associated with specific geographic areas, determining an individual pine marten's haplotype can provide some clues as to its origin. In the United Kingdom, for example, the Irish population consists entirely of animals of haplotype *p*, whereas in Scotland all are of haplotype *a*. But what of our mysterious and elusive pine martens in England and Wales? What can this tell us about their origins and perhaps even the mechanisms of their persistence?

Surprisingly, of the twelve pine marten samples from England and Wales that have been tested since 1990, four were from haplotypes not previously recorded in Britain. One, a haplotype *g* carcass, was discovered in Hampshire in 2003, and a scat collected from North Wales in 1996 was tentatively determined as belonging to haplotype *c*. Interestingly, haplotype *g* is naturally found in populations from the former Czechoslovakia, while haplotype *c* is currently found in France; it seems that, in common with those televised debates earlier in the year, immigration from mainland Europe is living up to this PM debate too! These we think are rare examples of escapes from captivity. In addition to these intriguing results, two further specimens of

Martes americana in Northumberland have been recorded in collections of poetry by Simms in 1973 and 2004, with evidence of their introgression with pine martens subsequently confirmed in Kyle's 2003 *Conservation Genetics* paper. However, if we exclude the two specimens found outside the core population areas identified in The VWT's pine marten report (the Hampshire *g*, and a suspicious haplotype *a* body found on a woodland trail in Worcestershire), seven out of ten samples from these key areas were of haplotype *a*; or full-blooded Brits if you prefer! So, despite the occurrence of a few specimens with suspected captive origins, the persistence of populations consisting of haplotype *a* animals is encouraging, as it's perhaps what we'd expect if relict populations from England and Wales had managed to survive a history of habitat clearance and persecution and live on into the present day. However, as always, things may not be that clear cut.

Ancient specimens come under space age scrutiny

Museums allow us a window into the past, and they have an important contribution to make to future conservation efforts. Many museums hold pine martens collected from historical populations, and by subjecting these ancient specimens to modern genetic scrutiny, we're beginning to uncover some interesting information; information that could be pertinent to future conservation measures. So far we've identified 30 or so specimens with known provenance from England and Wales, and seven of these have been successfully sequenced at the Waterford Institute of Technology. Encouragingly, all have been of the same haplotype, but unfortunately, and rather surprisingly, they are not of the predominant type found in recent samples from these countries. In fact, that these specimens were all of haplotype *i*, a type not currently found in any extant population in Britain, is extremely surprising and not a little concerning. Put simply, at first glance it appears that what we have now is not what we had then. So what's happened?

Although on the face of it, this genetic evidence points at least to the *possibility* that relict populations may have gone from England and Wales, it's far too early to jump to that conclusion. The Vincent Wildlife Trust's recent pine marten report provides compelling evidence of the long-term persistence of pine martens in core areas and in addition, before we hit the panic button, it's important to stress that at the moment we are dealing



with a very limited sample in two respects. First, we've only sampled seven ancient (pre-1950) and twelve recent (post-1990) specimens, and second these were from a fairly limited geographical spread. Five of the museum specimens were collected in North Wales and the other two from north west England, meaning that we haven't sampled ancient specimens from much of the species' known current range. But we're casting our net more widely now, and so hopefully we're not far away from a more conclusive result. Clearly there is an urgent need to investigate this further and in particular to determine whether haplotype *a* was present in the relict populations, or indeed whether haplotype *i* is present in any of the current populations. This result, whichever way it goes, will have implications for the potential management options for this species in the future, and it's key that we get this right.

It's clear to see that the combination of field data and DNA techniques provide a

fascinating and informative blend of the old and new, and hopefully, in time, the answers to crucial conservation management questions for these struggling populations. For now though, we need more pine marten DNA, and we're scouring muddy forest floors and dusty museum vaults to get it.

To report a pine marten sighting in England or Wales, to let us know of a museum specimen for sampling, or to get involved in The VWT's work, please visit

www.pinemarten.info,
phone 01531 636441, or email:
enquiries@vwt.org.uk

Pine marten, Photo by Bill Cuthbert



Searching for pine marten scats'
Photo by Henry Schofield



News from Local Groups and County Mammal Recorders

Jon Bramley

Local Groups Liaison Officer/
Chair Kent Mammal Group
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The Mammal Society is the national body and voice for mammal conservation and recording in the British Isles, which includes all counties of England, Scotland, Wales and Ireland. At a county and area level though there is an active network of Local Mammal Groups and Mammal Recorders, with many counties having their own County Recorder and Local Group (fuller details can be found on The Mammal Society web site).

The Mammal Society is very keen to support these Local Groups and Recorders and to this end in 2009 Jon Bramley, the Chair of Kent Mammal Group, was voted on to The Mammal Society's Council and volunteered to undertake the role of Local Groups Liaison Officer.

In this role Jon is working to ensure that all Local Mammal Groups and County Mammal Recorders are linked to The Mammal Society to form a network of mammalogists across the British Isles. At the most basic level Groups, Recorders and Regional Officers in this network will be linked to the Mammal Society website and their details regularly updated and checked on a yearly basis. For those groups wanting stronger ties with The Mammal Society Affiliated Group Membership is recommended, as for a small annual fee (£30) these Groups receive:

- Advice and support from local and national experts in mammalogy
- A comprehensive list of speakers for their indoor events
- An opportunity to participate in The Mammal Society surveys
- Access to The Mammal Society Longworth Trap Loan Scheme
- The opportunity to appear in a featured article in Mammal News

- Discounts for Group members on Mammal Society training courses and events
- Discounts on Mammal Society publications and equipment for orders over £20
- The opportunity to use the Society's logo, name and marketing materials at local events.
- Third Party Insurance cover for a Local Group when undertaking surveys or participating in events organised by or on behalf of The Mammal Society.

Local Mammal Groups are found in many parts of the UK, though so far we have not located any in Ireland and there are none yet from Scotland in the network. The Local Groups network to date comprises:

ENGLAND - South East

Hampshire Mammal Group
Kent Mammal Group
Lee Valley Bat Group
Surrey Mammal Group
Sussex Mammal Group

ENGLAND - South West

Cornwall Mammal Group
Devon Mammal Group
Dorset Otter Group
Somerset Otter Group
Somerset Bat Group

ENGLAND - Midlands & East Anglia

Derbyshire Mammal Group
Shropshire Mammal Group
Staffordshire Mammal Group
Norfolk and Norwich Naturalists' Society (including a bat and mammal group)

ENGLAND - North

Cheshire Mammal Group
Merseyside and West Lancashire Mammal Group
Northumbria Mammal Group
Sorby Mammal and Bat Group
Yorkshire Mammal Group

WALES

Montgomeryshire Mammal Group
Radnorshire Mammal Group
Snowdonia Mammal Group / Grwp Mamaliaid Eryri
South Wales Mammal Group
Wales Mammal Group/ Grwp Mamaliaid Cymru

It is envisaged that in 2010 more Local Groups will be added to the network and currently new mammal groups are being formed in Gloucestershire, Cambridgeshire and Grampian (please see TMS website for more details). If after checking the website for Local Groups and County Recorders you notice any mistakes or omissions please let Jon know on Jonathan.Bramley@btopenworld.com and he will seek to correct them, as we would like to have as complete a list as possible for the British Isles. If you cannot find a Local Group near you why not set up your own county one? You don't need to be an expert on mammals, you just need enthusiasm, organising skills and some available time. For help and information, see our Guidance for Setting Up a Local Group, which is on the website. You will have great fun, as we at Kent Mammal Group and other Local Groups have found.

The relationship between forage cell wall content and voluntary food intake in mammalian herbivores

Meyer, K., Hummel, J. and Clauss, M.

ABSTRACT

It is generally assumed that animals compensate for a declining diet quality with increasing food intake. Differences in the response to decreasing forage quality in herbivores have been postulated particularly between cattle (ruminants) and horses (hindgut fermenters). However, empirical tests for both assumptions in herbivorous mammals are rare.

We collected data on voluntary food intake in mammals on forage-only diets and related this to dietary neutral detergent fibre (NDF) content, assuming a nonlinear correlation between these measurements. Generally, the paucity of corresponding data is striking.

Elephants and pandas showed very high food intakes that appeared unrelated to dietary fibre content. Only in small rodents, and possibly in rabbits, was an increase in food intake on forages of higher NDF content evident. In particular, other large herbivores, including horses, followed patterns of decreasing intake with increasing forage NDF, also observed in domestic cattle or sheep.

For large herbivores, empirical data therefore do not – so far – support the notion that intake is increased in response to declining diet quality. However, data are in accord with the assumption that most large herbivores have an anticipatory strategy of acquiring body reserves when high-quality forage is available, and reducing food intake (and potentially metabolic losses) when only low-quality forage is available.

Intake studies in which the influence of digestive strategy on food intake capacity is tested should be designed as long-term studies that outlast an anticipatory strategy and force animals to ingest as much as possible.

We suggest that a colonic separation mechanism coupled with coprophagy, in order to minimize metabolic faecal losses, is necessary below a body size threshold where an anticipatory strategy (living off body reserves, migration) is not feasible. Future studies aimed at investigating fine-scale differences, for example between equids and bovids, should focus on non-domesticated species.

The impacts and management of foxes *Vulpes vulpes* in Australia

Saunders, G.R., Gentle, M.N. and Dickman, C.R.

ABSTRACT

The successful introduction of the red fox *Vulpes vulpes* into Australia in the 1870s has had dramatic and deleterious impacts on both native fauna and agricultural production. Historical accounts detail how the arrival of foxes in many areas coincided with the local demise of native fauna. Recent analyses suggest that native fauna can be successfully reintroduced to their former ranges only if foxes have been controlled, and several replicated removal experiments have confirmed that foxes are the major agents of extirpation of native fauna. Predation is the primary cause of losses, but competition and transmission of disease may be important for some species.

In agricultural landscapes, fox predation on lambs can cause losses of 1–30%; variation is due to flock size, health and management, as well as differences in the timing and duration of lambing and the density of foxes.

Fox control measures include trapping, shooting, den fumigation and exclusion fencing; baiting using the toxin 1080 is the most commonly employed method. Depending on the baiting strategy, habitat and area covered, baiting can reduce fox activity by 50–97%. We review patterns of baiting in a large sheep-grazing region in central New South Wales, and propose guidelines to increase landholder awareness of baiting strategies, to concentrate and coordinate bait use, and to maximize the cost-effectiveness of baiting programs.

The variable reduction in fox density within the baited area, together with the ability of the fox to recolonize rapidly, suggest that current baiting practices in eastern Australia are often ineffective, and that reforms are required. These might include increasing landholder awareness and involvement in group control programs, and the use of more efficient broadscale techniques, such as aerial baiting.

Litter size and latitude in a large mammal: the wild boar *Sus scrofa*

A. Bywater, K.A., Apollonio, M., Cappai, N. and Stephens, P.A.

ABSTRACT

A positive relationship between clutch size or litter size and latitude exists in birds and many species of small mammal. Hitherto, however, analyses for large mammals have failed to provide evidence that litter sizes increase with latitude.

We collated data from published studies of wild boar in Europe, to analyse the relationship between litter size and latitude in this widely distributed terrestrial mammal. Depending on the specific data set (whether only the most reliable data or all available data were included), latitude explained 58% to 72% of the variation in mean litter sizes across studies. On average, litter size increases by approximately 0.15 piglets per degree of latitude.

A strong correlation between litter size and latitude for wild boar in Europe provides a starting point for demographic modelling of this species of both ecological and economic importance.

The pattern for wild boar is consistent with Ashmole's explanation for the effects of latitude on reproduction. The contrast between our results and those generated for other large mammals may result from our focus on an herbivore in contrast to previous work which was focused on carnivores. Further work could usefully examine the extent of seasonality in the availability of resources for species of different dietary types.



Badgers and the cattle industry:

Black and white policies fly in the face of science and sustainability

Dan Forman, Carolyn Grieg, Gareth Parry, Lizzie Wilberforce, Rob Parry, Celia Thomas, John Evans.

Corresponding author: Dan Forman, Conservation Ecology Research Team, Swansea University (d.w.forman@swansea.ac.uk)

In early May, overshadowed by the general election, the Welsh Assembly Government (WAG) announced proposals to initiate widespread badger culling to control bovine tuberculosis (bTB). There has been extensive condemnation of this decision, and growing local opposition, under the flag of Pembrokeshire against the Cull (www.pembrokeshireagainstthecull.org.uk), The Wildlife Trust www.welshwildlife.org.uk, Save the Badger (www.savethebadger.com) and the Badger Trust (www.badger.org.uk). Many scientific and financial arguments have been made for an immediate cessation of this cull and this article is intended to raise some of the lesser known issues to a wider audience.

Source and sinks of bTB

As a zoonotic disease, bTB is able to infect and move between a wide range of hosts, including not only cattle, humans and badgers but also many other mammals, e.g. polecats and otters (Bourne, J. *et al.*, 2007; Gavier-Widen, D. *et al.*, 2009). On the Continent, deer species and boar are considered to be the main source of transmission to cattle (Vicente J. *et al.*, 2007; More, S.J. *et al.*, 2009). Moreover, recent Food and Environmental Research Agency (part of DEFRA) data indicate that dogs, cats, sheep, and other domesticated animals can also carry the disease (see www.defra.gov.uk). With such a potentially large wildlife reservoir in the Welsh countryside, focusing exclusively on one (legally protected) mammal does not make sense at all. The role of other native and domestic mammals in the transmission and persistence of bTB in Britain, and the effect on this of ecological perturbation remains unknown. It is also noteworthy that, compared with the effort expended in understanding how the disease cycles between cattle and badger, remarkably little work has been funded and undertaken regarding cattle-cattle transmission of this bovine disease - surely a priority area to investigate to ensure effective disease control?

Critical flaws in decision making

During the court action raised by the Badger Trust earlier this year, critical errors of data interpretation by the WAG were revealed. Of significant concern was the incorrect interpretation of some of the findings of the Independent Scientific Group (ISG). For example, data in which the ISG authors reported that badger culling **reduces the growth** of TB by up to 9%, were interpreted by the Chief Veterinary Officer and her team as being an **absolute reduction** in the incidence of TB in cattle (see www.badgertrust.org.uk). This is not a trivial error and one which the WAG needs to

address as a matter of urgency. There are also significant concerns about why the WAG failed to include ecologists, ecological modellers and wildlife epidemiologists amongst the veterinarians and farming experts consulted during the decision making process. In contrast, the ISG included representation from all these disciplines.

Confusing the issues

- cost versus success

Whilst WAG is quick to highlight the fact that killing badgers can reduce (but not eliminate) the spread of bTB in cattle, it failed to evaluate or discuss the cost-benefit value of the cull. All recent analyses confirm that the financial cost of any cull will greatly exceed any financial benefits (Donnelly, C.A. *et al.*, 2006; Woodroffe, R. *et al.*, 2008; Jenkins, H.E. *et al.*, Feb. 2010) Notably, Professor Donnelly, the corresponding author of the latest analysis of the occurrence of bTB in cattle post cessation of the ISG trial (Jenkins, H.E. *et al.*, May 2010), confirms the view (www.farmersguardian.com) that calculations 'still give financial costs of culling substantially greater than the benefits in terms of breakdowns prevented'.

A lack of sustainability and vision

There is a growing political awareness of the benefits of predicting both the environmental and economic consequences of policy decisions and directions before they are acted upon (Sutherland, W.J. and Woodroffe, H.J., 2009; also see www.teebweb.org). WAG has a duty to solve environmental problems and constraints using a holistic approach, and one which incorporates both the environmental and economic costs of the cull. Given the well publicised and repeated message that the Welsh badger

cull will cost more to undertake than it will reap in financial benefits, it is remarkable that WAG is persisting with this futile and highly wasteful activity. In lean times we can ill afford to waste money on national programmes with negative predicted benefits; at the very least, policy makers in WAG surely have an obligation to act responsibly in the way they spend the public's money?

Editor's Note:

The Mammal Society's Position Statement *Badgers and Bovine Tuberculosis 2009* is available from The Mammal Society website at www.mammal.org.uk



Your Letters

The views expressed on this page do not necessarily reflect the policies or opinions of The Mammal Society.

Dear Marina,

I was delighted to read your 'Is it working for mammals?' article in the latest Mammal News - and in particular your final paragraph posing the question whether 'we should campaign more actively'.

I have been campaigning for the protection of wildlife for 40 years including terms as an officer of the RSPCA, League Against Cruel Sports, Animal Aid and as manager of the Ferne Animal Sanctuary in Somerset. Much of my work has involved being a consultant to MPs working for greater protection for wild animals - mostly from various forms of cruelty.

For the past 12 years I have operated my own urban wildlife consultancy in order to assist developers, schools, hospitals, sports clubs, gardeners, and householders, find humane, non-lethal solutions to human conflicts with urban wildlife such as foxes, rats and mice, pigeons, and other so-called pests. I have been shocked at what I have learned of the UK 'pest control industry' - which relies almost exclusively on killing animals and birds with poisons (£10 million worth of anti-coagulant poison is sold in

the UK annually), traps and a plethora of inhumane devices, in what is normally pointless and unnecessary slaughter. One thing which has always bugged me is the inequality of mammals.

The Wildlife and Countryside Act 1981 for instance includes the principle that all birds, their nests and eggs are protected, with exceptions for some regarded as either 'pests' (corvids for example) or 'targets' such as game birds. Even then there are restrictions on methods of killing and some close seasons. The principle with mammals is the opposite. Mammals are not protected, with the exceptions of those which are endangered or 'vulnerable'.

I have long thought that the principle for the protection of mammals should be the same as for birds, i.e. protected from deliberate or reckless destruction, with exceptions for some 'pests' and even for those, restrictions on the periods and methods of destruction.

This 'Equality for Mammals' seems to me a campaign in which the Mammal Society and conservation groups could

join up with wildlife protection and animal welfare groups, to great effect. In the late 1980s and early 90s, as wildlife officer for the League Against Cruel Sports I was instrumental in forming a highly successful alliance between the League, RSPCA, the (then) National Federation of Badger Groups, the (then) Royal Society for Nature Conservation, and the WWF in a campaign for greater protection of badgers and their setts. That powerful alliance beat off all the efforts of the blood sports and farming lobbies to stop the Badger Bill going through and taught me that coalitions have more power than the sum of their parts! So if you find that the Mammal Society members seem sympathetic to adopting a more active campaigning role, count me in!

Regards

John Bryant,
Humane Urban Wildlife Deterrence.
www.jbryant.co.uk



Gloucestershire Mammal Group

The Gloucestershire Mammal Group is a new local group that is being formed to focus on the study and conservation of mammals in Bristol and Gloucestershire. Initially we will be focused on Otters, but we plan to quickly expand to cover all terrestrial mammals. We already have an Otter survey project under way and are in the process of expanding the scope of the survey.

We are currently finalising our program of events.

For further details

email info@gloucestershire-mammals.org or

visit our web site at **www.gloucestershire-mammals.org**

Training NEWS



Our training courses have been going extremely well this year and I'm pleased to say that our second **Badgers and Development** course, created and led by Penny and Dave Lewns, was a big hit once again. With Penny's vast experience of work with badgers and Dave's practical experience of mitigation techniques and artificial sett building, they truly are the 'dream team'. The workshop was described by participants as "very interesting, enjoyable and informative" and "very good experience" and we look forward to presenting **Badgers and Development** to many more consultants in the future.

Mammal Identification, the Society's flagship course has continued to be popular with a wide range of people from ecologists to those with little previous experience of the mammal world; and the **Dormouse Ecology and Conservation** courses in Cheddar and Kent are also booking up fast. A mustelid course is also in the pipeline for the end of 2010 so keep your eyes on the website for dates.

For further information on all of our courses ring us on **02380 237 874** or email enquiries@mammal.org.uk

UPCOMING COURSE DATES FOR 2010

Mammal Identification – Weekend residential workshop	
FSC Kindrogan, Perthshire	2 – 4 July
FSC Juniper Hall, Surrey	27 – 29 August
FSC Preston Montford, Shropshire	1 – 3 October
Small Mammal Ecology and Survey Techniques	
FSC Juniper Hall, Surrey	4 September
Dormouse Ecology and Conservation	
Cheddar, Somerset	1 October
Wildwood, Kent	23 July, 21 August, 25 September
Riparian Mammals	
Winchester City Mill, Hampshire	14 August
Radio Tracking	
Wareham, Dorset	27 October
COMING UP IN SUMMER 2011:	
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Waterford Institute of Technology, Ireland	Dates TBC

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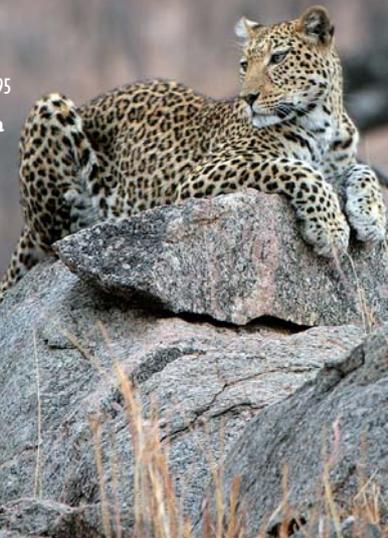


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