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Wildlife

Despite growing public concern, the appreciation of the welfare needs of wild animals is often inadequate. The RSPCA wildlife department seeks to improve welfare provisions for captive and free-living wild animals. This is achieved through research, promoting an awareness of the requirements of animals, and an emphasis on a precautionary and humane approach to human interactions with wild animals.

Hedgehog hibernation pattern tracking project

The RSPCA's four wildlife centres admit more hedgehogs than any other mammal with an average of over 1,600 being admitted over the past 10 years.

Some of these hedgehogs are injured or sick adults but many are juveniles, either genuine orphans or animals that have failed to thrive due to illness such as lungworm. Many of these hedgehogs are admitted in the autumn and so we can have large numbers of hedgehogs in our care over winter.

We have managed this situation in the past by releasing a number of these hedgehogs during the winter. We let them settle into hibernation in captivity then release them during spells of mild weather.

As part of our continuing research into the success of wildlife rehabilitation, we are currently radio-tracking a number of these hedgehogs to investigate their survival overwinter. The previous two years have been positive with all the released hedgehogs surviving hibernation and waking up the following spring to start living life as a wild hedgehog.

This year, not only are we radio-tracking our rehabilitated hedgehogs, but we are also working with university departments at Brighton, Reading and Nottingham Trent to compare the survival of rehabilitated hedgehogs with wild hedgehogs. Wild hedgehogs were tagged with radio transmitters at these locations and they will be monitored during the winter.

Not only do we aim to demonstrate that our rehabilitation and release of hedgehogs is successful but, by monitoring wild hedgehogs, we hope to provide evidence to support the hypothesis that hedgehogs need to weigh at least 450 g to survive hibernation (Morris 1984[1]). The results from all the radio-tracked hedgehogs will be collated, analysed and submitted for publication as soon as possible.

1. MORRIS, P. A. (1984) *An estimate of the minimum body weight necessary for hedgehogs (Erinaceus europaeus) to survive hibernation*. Journal of Zoology 203: 291-294

Philip Toscano, Joe Murphy (x2)/RSPCA Photolibrary

Primates kept as pets

Being kept in a parrot cage is no life for a primate but that is often the case when the RSPCA inspectorate encounter pet monkeys. The RSPCA receives around 50 calls a year about pet primates but this is likely to increase as internet trade escalates.

In the past year three prosecutions have been brought, all of which involved common marmosets – small South American monkeys. There are several ongoing incidents involving common marmosets, and other primates.

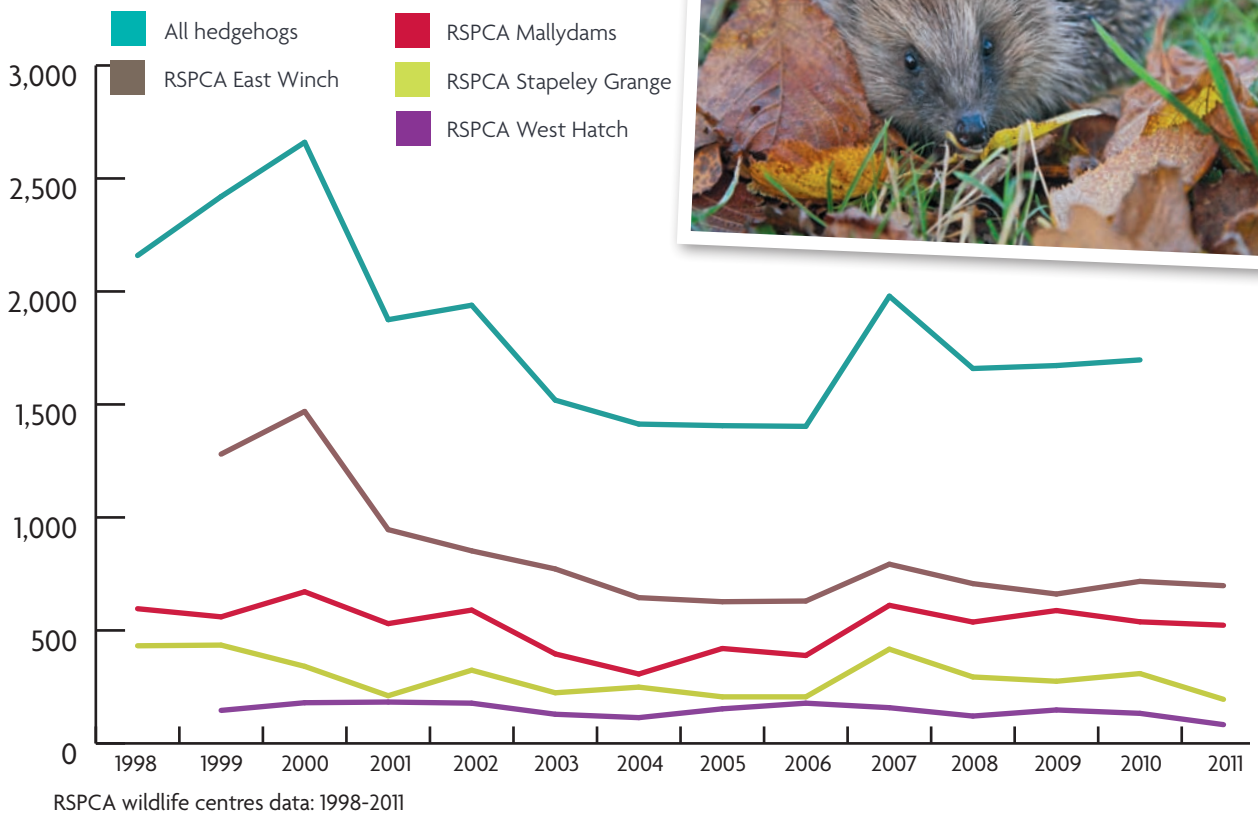
The RSPCA wildlife department supports the inspectorate by identifying species, providing care advice and sourcing rehoming opportunities. Most recently, we have assisted in the seizure of a squirrel monkey and provided advice on enclosure design for a pair of common marmosets.

In conjunction with Monkey World Ape Rescue Centre (Dorset, UK) we have developed a Marmoset Rehoming Project, where a new complex has been built to provide permanent, safe and species-appropriate homes for RSPCA-rescued marmosets. Seven RSPCA-case marmosets have recently taken up residence! By providing a funding brief to the team responsible for liaising with the RSPCA's major donors, we have been able to raise over £10,000 for this project.

The wildlife department has also conducted research into the effectiveness of the Code of Practice for the Welfare of Privately Kept Non-Human Primates in England, which will be reviewed by Defra in 2015. Our data indicates that local authorities in England (which issue licences for some pet primates) tend not to be aware of, or use the Code, suggesting that the Code is failing to safeguard the welfare of pet primates.

Other work in this area has included investigations into internet trade, and supplying information to the UK government and the Welsh Government about the scale of primate keeping.

Numbers of hedgehogs admitted to RSPCA wildlife centres since 1998.



RSPCA wildlife centres data: 1998-2011

Wild animal 'pets'

The RSPCA considers exotics to be wild animals in captivity because they have not undergone the same period of domestication as more familiar pets like cats and dogs. Their needs can be challenging to meet because they are tied to the animals' natural way of life in the wild. We believe some exotics, like primates, are unsuitable as pets because they have such highly complex needs.

Reliable data is scarce but exotic pets do appear to be increasing in popularity[1]. The RSPCA is facing growing numbers of incidents relating to certain exotics such as bearded dragons and meerkats[2].

Exotic pets were chosen as the focus of one of five *RSPCA Pledges*, launched in February 2012. While the pledge[3] covers all non-domestic species, work is initially focusing on reptiles and primates.

This year has been one of laying groundwork and assessing priorities. We have produced a fundraising and project brief, outlining the pledge rationale, major work plans and associated costs; sought to build links with other individuals and organisations; determined knowledge gaps, highlighted areas for research and initiated projects; and participated in knowledge sharing through attendance at conferences. We have also been working internally to enhance training for field staff; invest in development and training of specialist field officers; and develop a network of boarding facilities in our animal centres.

REFERENCES

1. Pet Food Manufacturers' Association annual small animal population survey. UK population estimate for turtles, tortoises, lizards and snakes rose from 400,000 (2008) to 700,000 (2012).
2. Data extracted from the RSPCA national call centre database in 2011.
3. RSPCA exotics pledge: *To reduce the number of exotics kept as pets and increase their humane care.*

Badger cull controversy

'To cull or not to cull' continues to be the question featuring at the heart of much of the ongoing debate about badgers and bovine tuberculosis. The RSPCA welcomed the Welsh Government decision to pursue a badger vaccination project in the Intensive Action Area in Pembrokeshire as part of its strategic framework for bTB eradication. This followed a review of the scientific evidence commissioned by the Minister for Environment and Sustainable Development. By the end of the year about 1,400 badgers had been vaccinated.

However, in England, Defra continued to pursue a policy involving licensing farmers to cull badgers. Two areas were selected for pilot culls; in West Somerset and West Gloucestershire. Applicants were required to meet various criteria, including culling *at least 70 per cent* of the badger population. This required robust evidence regarding the number of badgers in the specific areas, as was highlighted by an important letter in the journal Nature from two research scientists.

The RSPCA submitted an evidence statement in support of the Badger Trust's application for Judicial Review in which we indicated some of the problems and scientific uncertainties but, whilst recognising the scientific controversy, the decision was based solely on legal interpretation and the application failed.

Another scientific challenge emerged just before culling was due to commence, with more than 30 eminent scientists signing a letter to *The Observer* urging the government to reconsider its strategy. However, plans for the pilot culls were postponed late in October when specific surveys revealed that badger numbers in the areas were roughly double that initially estimated and it was considered unlikely that a cull could be completed so late in the year.

RSPCA wildlife centres review

The RSPCA wildlife centres at East Winch, Mallydams Wood, Stapeley Grange and West Hatch continue to strive for a better understanding of the casualties in their care. Numerous research projects are undertaken to investigate post-release survival in rehabilitated species. Techniques such as radio-tracking are used, as well as simpler methods such as marking, e.g. ringing birds and relying on re-sightings for information on how long these animals survive and how far they have travelled.

Some of this work is carried out in conjunction with the wildlife department and has been promoted widely at various conferences and symposia. In addition, the wildlife department and centres continue to develop species rehabilitation protocols, based on best practice and sound science.

RSPCA EAST WINCH WILDLIFE CENTRE

Unusual pinniped mortalities associated with 'corkscrew' injuries of anthropogenic origin

Between June 2008 and December 2010, 76 dead pinnipeds* were found on the coast of the UK with peculiar injuries consisting of a single continuous curvilinear skin laceration spiralling down the body. The skin and blubber had been sheared from the underlying fascia and, in many cases, the scapula also had been avulsed from the thoracic wall.

Although previously unreported in the UK, similar distinctive lesions had been described in Canadian pinnipeds where they were referred to as *corkscrew injuries*. In the UK, identical injuries were seen in both native species of pinniped, with 43 harbour seals (*Phoca vitulina*)** (57 per cent) and 26 grey seals (*Halichoerus grypus*) (34 per cent) affected, and seven carcasses (9 per cent) for which the species could not be determined. There were two apparent seasonal peaks in incidence; predominantly adult harbour seals were discovered during the summer and juvenile grey seals during the winter.

Post-mortem examinations of 20 harbour seals revealed they had been alive and healthy when the injuries were sustained, with no evidence of any underlying disease or disability. Based on the pathological findings, it was concluded that mortality was caused by a sudden traumatic event involving a strong rotational shearing force. The injuries were consistent with the animals being drawn through the ducted propellers of marine vessels and, in some cases, there was a direct correlation with the presence of work boats operating in the vicinity. This challenges the conclusions of a previous study in Canada that suggested natural predation by Greenland sharks (*Somniosus microcephalus*) was likely to be responsible for these injuries.

TEXT TAKEN FROM ABSTRACT - PAPER PUBLISHED 2012:
Bexton, S., Thompson,D., Brownlow,A., Barley,J., Milne,R. and Bidewell, C. (2012) *Unusual Mortality of Pinnipeds in the United Kingdom Associated with Helical (Corkscrew) Injuries of Anthropogenic Origin*. Aquatic Mammals 38(3), 229-240.
* Pinnipeds – comprises the families of *Otariidae* (sea lions), *Odobenidae* (walrus) and *Phocidae* (seals) together with their immediate ancestors. Allaby, M. (2003) Oxford Dictionary of Zoology (reissue), p413.
**Harbour seal – also known as the common seal.

RSPCA MALLYDAMS WOOD WILDLIFE CENTRE

Post-release monitoring of common buzzards

Between 2005 and 2011 the four RSPCA wildlife centres have admitted a total of 900 common buzzards (*Buteo buteo*) into care. The national trend for the species is one of rapid population increase and range expansion[1]. Therefore in the future we are likely to see more and more common buzzards admitted into wildlife rehabilitation centres. This highlights the importance of assessing the success of our rehabilitation techniques through post-release monitoring.

Since 2006, RSPCA West Hatch and RSPCA Mallydams Wood have fitted a total of 16 common buzzards with radio tags, initially using tail mount tags which are fitted to the bird's central tail feather but then moving on to leg mount tags which are fitted around the tarsus of the bird. This switch in attachment technique was in response to poor tag retention experienced with tail mounted birds. The tags have a battery life of approximately 7.5 months and the aim of the project has been to track individuals for as long as possible to examine their post-release survival and dispersal.

Nine of the 16 birds have been tracked by RSPCA Mallydams Wood; of these birds two died, two shed their tags, and one was caught in a Larson trap and lost its tag. Two of the birds survived the duration of the radio tags' battery life, with both being tracked for over 200 days. The final two birds are still being tracked but have both been out for over 100 days. The tagged birds have been observed displaying natural behaviours, foraging on worms and interacting with conspecifics. The project is ongoing and will be written up in 2013.

REFERENCE
1. Baillie, S.R., Marchant, J.H., Leech, D.I., Renwick, A.R., Eglington, S.M., Joys, A.C., Noble, D.G., Barimore, C., Conway, G.J., Downie, I.S., Risely, K. & Robinson, R.A. (2012). *Bird Trends 2011*. BTO Research Report No. 609. BTO, Thetford. http://www.bto.org/birdtrends

RSPCA STAPELEY GRANGE WILDLIFE CENTRE

Monitoring stress and post-release survival in fox cubs

As wildlife rehabilitators, we must have confidence in our rehabilitation protocols so that we are releasing fit and healthy animals that can survive back in the wild.

Between January 2006 and December 2011 RSPCA Stapeley Grange received 754 red foxes (*Vulpes vulpes*); 289 adults/immature and 465 juveniles/orphans. Over this six year period 58 adults and 262 juveniles/orphans were released back to the wild. Before taking in apparently abandoned cubs, every effort is made to leave cubs in the wild so that they have a good chance of being reunited with their parents. This RSPCA policy ensures that every rescued cub is truly an orphan.

The return of orphaned cubs can take up to seven months which is both expensive and labour intensive, however little evidence is available as to how well these 'soft released' cubs do following release. Over the next four years and in conjunction with Manchester Metropolitan University, RSPCA Stapeley Grange will be running three projects, all of which relate to fox rehabilitation.

1. Monitoring stress levels of fox cubs during rehabilitation, by measuring cortisol levels in faecal samples (these levels act as indicators to stress).
2. Assessing, using behavioural software, the impact of our GSM collars on our juvenile foxes, to ensure they are unhindered when returned to the wild.
3. Monitoring 28 rehabilitated fox cubs, using GSM collars, for up to four months post-release.

In 2012, four fox cubs were collared using GSM collars. Initial data from two of the collared foxes show that they are adapting well after eight weeks and have appeared to have found and settled in new locations, some distance from their initial release sites. Whilst one collar was remotely dropped after one week, the other has broken and now only works using VHF mode, which is being tracked by the RSPCA Stapeley Grange team.

Lee Stewart/RSPCA Stapeley Grange

RSPCA WEST HATCH WILDLIFE CENTRE

Prevalence of *Borrelia* infection in ticks from wildlife in south-west England

Lyme borreliosis, or Lyme disease, is a common vector-borne disease of human beings. It also occurs in domestic animals. Lyme borreliosis is caused by a group of closely related *Borrelia* species (spirochaete bacteria), which are transmitted between hosts by Ixodid ticks. Although various species of wild mammals and birds are the reservoir hosts for *Borrelia* species, disease in wildlife appears to be rare.

In order to improve our understanding of the epidemiology of Lyme borreliosis, we undertook a pilot study (funded by the University of Bath) to gather information on the tick species present on wild animals in south-west England, and the *Borrelia* species they carry.

Seventy-five ticks were collected opportunistically from 15 native wild animals (eight European hedgehogs *Erinaceus europaeus*, five Eurasian badgers *Meles meles*, one red fox *Vulpes vulpes*, and one roe deer *Capreolus capreolus*). The ticks were preserved in 70 per cent alcohol, and submitted for speciation and analysis for the presence of *Borrelia* species.

Ticks were identified to species level by microscopy, according to morphological criteria. DNA was extracted from each tick, and *Borrelia* species were identified by PCR. 57 *Ixodes hexagonus* (hedgehog ticks), 16 *Ixodes canisuga* (dog or fox ticks) and two *Ixodes ricinus* (sheep or deer ticks) were identified.

Borrelia species DNA was identified in 31 of the 75 ticks examined (41 per cent). 23 *Borrelia*-positive ticks (16 *I.hexagonus* and seven *I.canisuga*) were recovered from five badgers, five *Borrelia*-positive *I.hexagonus* were recovered from four of the eight hedgehogs, two *Borrelia*-positive *I.canisuga* were recovered from the fox and one *Borrelia*-positive *I.ricinus* was recovered from the roe deer.

The *Borrelia*-positive samples were identified to species level as follows: 14 *Borrelia garinii*, seven *Borrelia valaisiana*, one *Borrelia afzelii*, one *Borrelia lusitaniae*, and eight samples that were not typed.

Engaging with decision makers

Scientific staff from the RSPCA's wildlife department promote the Society's agreed policies, aims and objectives through advocacy to statutory bodies and other organisations at the highest level. They are members of many national and international committees and working groups and also have key input into a range of consultations, both to government and non-governmental bodies, on a wide range of wildlife issues. Below is a small selection of the committees, meetings, events and consultations in which wildlife staff have participated during 2012.

Representation on external committees

- Animal Welfare Network (Wales).
- British Wildlife Rehabilitation Council (BWRC) Steering Committee.
- International Wildlife Rehabilitation Council (IWRC).
- Marine Animal Rescue Coalition (MARC).
- Species Survival Network (SSN) Board.
- The Deer Initiative.
- The Mammal Society.

- Sea Alarm.
- CITES Joint Animals and Plant Committee meeting.
- Wildlife and Countryside Link: Wildlife Trade working group.
- World Conservation Union's Otter Specialist Group.

Consultation responses

- Opportunity to comment on Natural England's pilot cull areas.
- Law Commission review.
- ABTA Global Guidelines for Animal Welfare.

Meetings and events

- Attended *Effects of oil on wildlife* conference, New Orleans.
- Law Commission advisory group.
- Meeting with Angling Trust and National Swan Convention.
- Meeting with QC/Badger Trust.
- Presentation on wild animals as pets to the local authority animal welfare officer managers' Animal Welfare Forum in London.
- Attended badger press event at Westminster.
- Meeting with the CVO Wales – badger vaccination project.
- Meeting with the Welsh Government Environment Department to discuss wildlife general licences and the new Environment Bill and its potential impact.
- 26th Animals Committee meeting of Conference of the Parties to the Convention on International Trade in Endangered Species of Flora and Fauna (CITES), March 15-19 in Geneva, Switzerland.
- Defra meeting – EU IAS Strategy Development meeting.
- Along with IFAW and HSI UK, met with JNCC and Defra to discuss welfare provisions in CITES (Convention on International Trade in Endangered Species of Flora and Fauna).
- Reception hosted by LACS, London.
- Presentation at International Society for Applied Ethology (ISAE) at Harper Adams University College.
- CASJ Wild Animal Welfare Policy Seminar at University of Leicester.
- Meeting with Defra/AHWB – future strategic direction re bTB, London.
- Presentation given on reptiles as pets at the Exotic pet trade day held by Wild Futures.
- Presentation given on the trade and welfare of wild animal pets at the National Dog Wardens' Association Animal Welfare Symposium.
- Universities Federation for Animal Welfare conference,York .
- HSI (UK) Joint Parliamentary Meeting about hares, House of Commons.
- Vet Net LLN Welfare & Conservation, Birmingham.
- APGAW meeting at House of Commons, London.
- Balex Delta exercise for oil spill response, Helsinki.
- Wildlife Rocks event at Guildford Cathedral, hosted by Brian May and Save Me.
- Wild Futures meeting, London.
- Briefing meeting House of Commons – badger culling.
- Attended Irish rehabilitation conference.
- Attended a conference on the *Import and keeping of exotic pets in Europe* in Brussels, organised by the Federation of Veterinarians of Europe, Cyprus Presidency of the Council of the EU, the EU Commission and the Swiss Federal Veterinary Office.
- Attended the first annual Tortoise Welfare Conference, held at Colchester Zoo.
- Ethics of Animals in Entertainment conference – Royal Veterinary College.
- Gave presentation on cognitive enrichment in great apes – REEC 4 Shape of Enrichment conference, Port Lympne.
- RSPCA regional chief inspectors meetings (all regions) – gave presentation on exotics pledge, exotics incidents and RSPCA wildlife department.
- RSPCA Block Fen branch meeting – gave presentation on exotics pledge, exotics incidents and wildlife department.
- Species Survival Network Elephant Working Group meeting – Born Free Foundation.
- Elephant Haven meeting on new elephant sanctuary in Europe – Born Free Foundation.
- Monkey World meeting to discuss new marmoset complex.

External funding

- Ongoing research into the effect of tags on rehabilitated and released seabirds (Swansea University).
- Survival of hedgehogs during hibernation (Brighton and Reading University).
- Review of the humaneness of rat, mouse and mole traps (Wildlife Conservation Research Unit (WildCRU), University of Oxford). For more information, see *RSPCA Science Group Review of 2011*.
- Research into badger behaviour and movements during and post rehabilitation with Swansea University.

Scientific publications

- Baker, S. E., Ellwood S. A., Tagarielli, V.L., and Macdonald, D.W. (2012) *Mechanical performance of rat, mouse and mole spring traps, and possible implications for welfare performance.* PLoS ONE 7(6): e39334. Research funded by RSPCA.
- Bexton, S., Thompson, D., Brownlow, A., Barley, J., Milne, R. and Bidewell, C. (2012) *Unusual Mortality of Pinnipeds in the United Kingdom Associated with Helical (Corkscrew) Injuries of Anthropogenic Origin*. Aquatic Mammals 38(3), 229-240.
- Couper, D. and Bexton, S. (2012) *Veterinary care of wild owl casualties*. In Practice 34: 270–281.
- Grogan A and Kelly A (in press). *A review of RSPCA research into wildlife rehabilitation*. Veterinary Record.
- Kelly, A., Goodwin, S., Grogan, A. and Mathews, F. (2012) *Further evidence for the post-release survival of hand-reared, orphaned bats based on radio-tracking and ring-return data*. Animal Welfare 21(1):27-31.

For a full list of papers produced by or in conjunction with the RSPCA wildlife centres, please go to www.rspca.org.uk/sciencegroup/wildlife/currentresearch.